

4 MC-073

SEDGWICK COUNTY PUBLIC WORKS

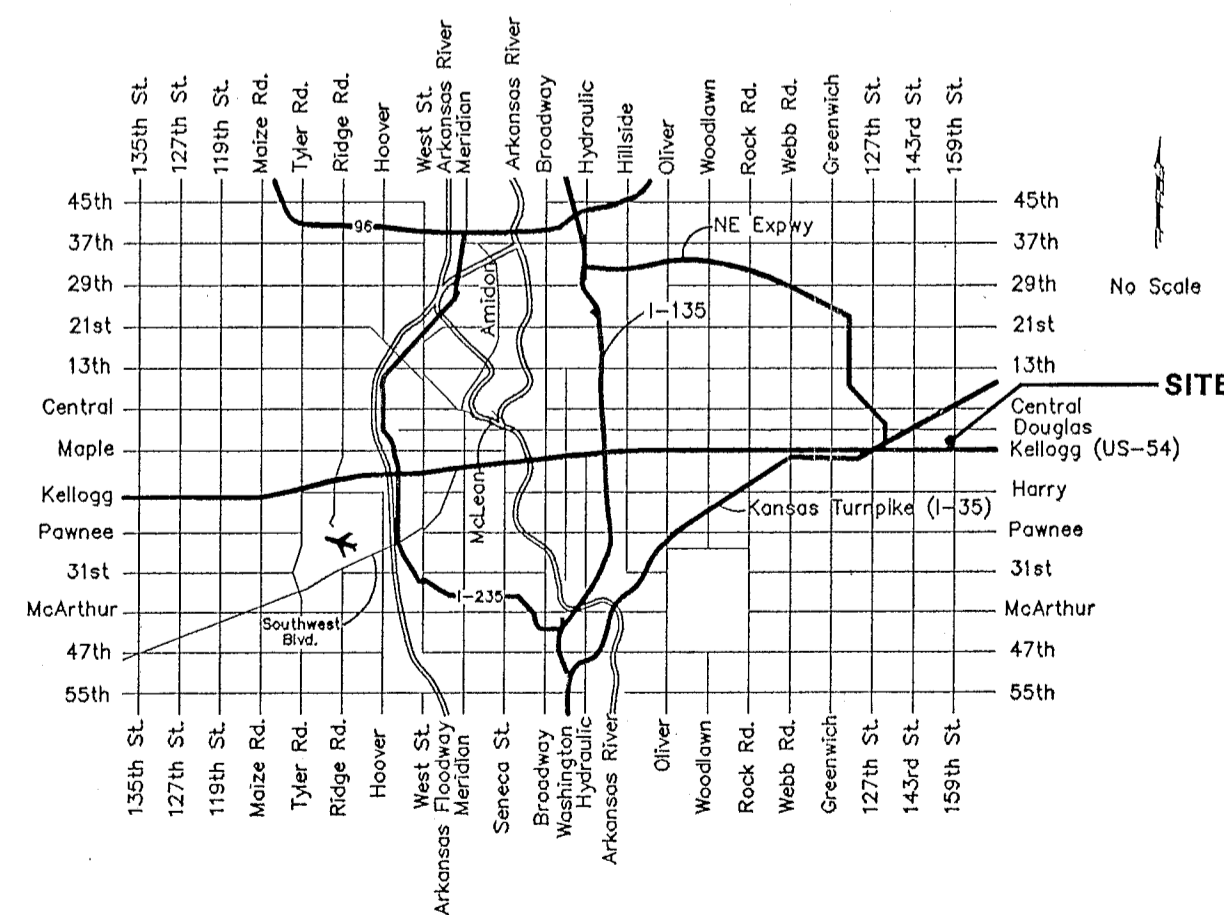


SANITARY SEWER IMPROVEMENTS FOR BELRIV ADDITION

JANUARY 2000

INDEX of SHEETS:

1. COVER SHEET
2. GENERAL NOTES & PROJECT AREA
3. SANITARY SEWER LINE 90-11
4. SANITARY SEWER LINE 90-10
5. SANITARY SEWER LINE 90-6
6. EASEMENT GRADING PLAN
7. PRECAST MANHOLE DETAILS
8. BACKFILL DETAILS
9. SERVICE CONNECTION DETAILS
10. PLAT OF BELRIV ADDITION



Vicinity Map

Delivered to Teresa 4-26-00

NET LENGTH OF PROJECT 2139 FT. 0.4 MILES

As Built 7/00 R.K. Baughman Co.

APPROVED:

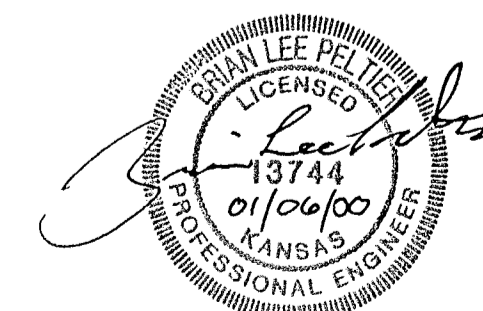
David C. Spears
 DIRECTOR OF PUBLIC WORKS / COUNTY ENGINEER
 DATE: 2/1/00

APPROVED:

Shroo Swintos
 CHAIRMAN, BOARD OF COUNTY COMMISSIONERS
 DATE:

FILED IN THE OFFICE OF THE SEDGWICK COUNTY CLERK:

James A. [Signature]
 COUNTY CLERK
 DATE: 2/2/00



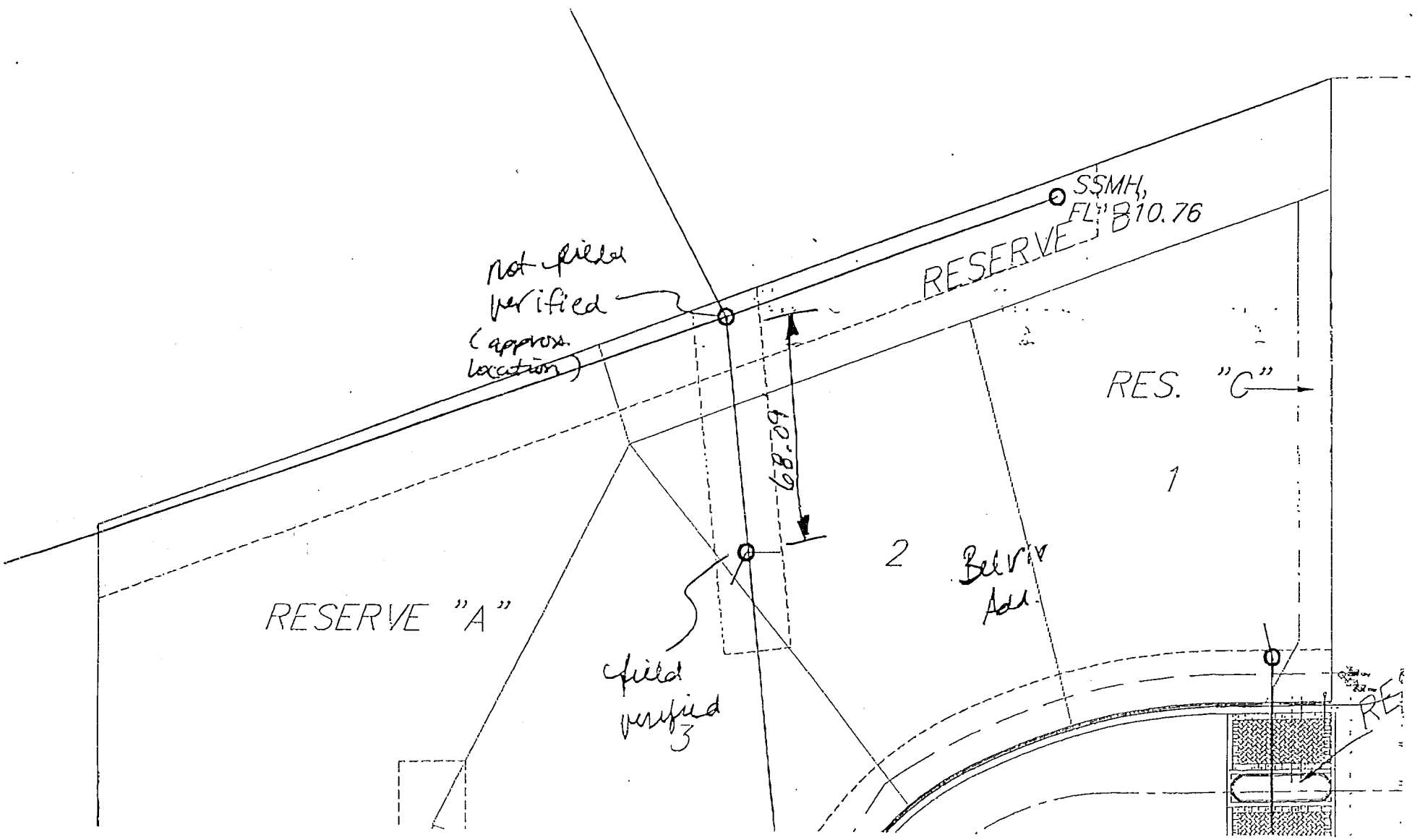
PLANS PREPARED BY:

BAUGHMAN COMPANY P. A.
 ENGINEERING, SURVEYING & PLANNING
 316/262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

BELRIV ADD. # 90

4 MC-073

Post-it® Fax Note 7671		Date	# of pages
To Paul Ryn		8-14-00	1
Co./Dept. Sg. Co.		From Teresa G.	
Phone #		Co. Baughman	
Fax # 660 3191		Phone # 2627271	
		Fax #	

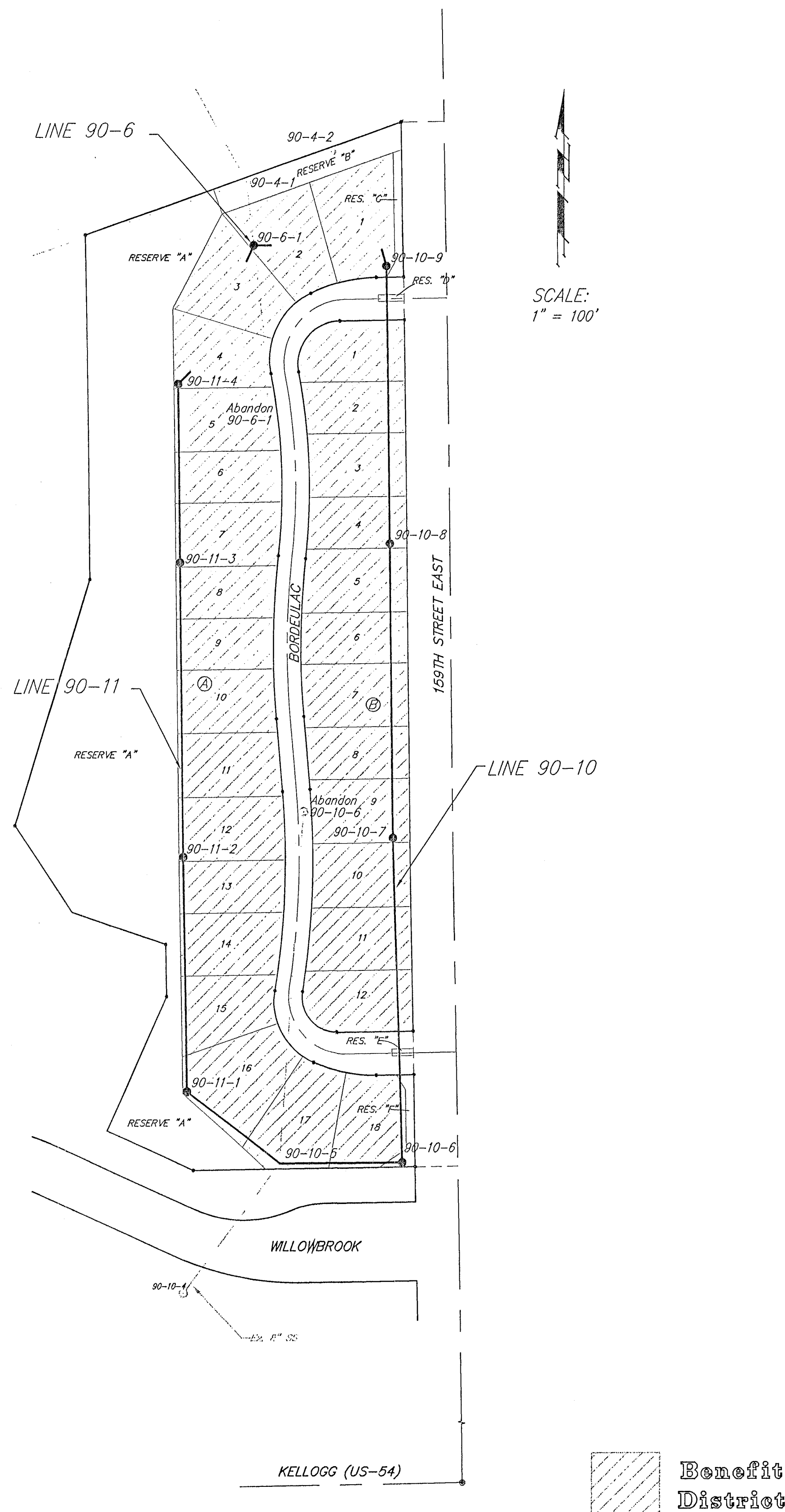


BELRIV ADDITION SEDGWICK COUNTY, KANSAS.

SANITARY SEWER

GENERAL NOTES

- All Elevations shown are USGS Datum.
- At least 72 hours prior to beginning any excavation (excluding weekends and holidays), the Contractor shall contact the Kansas One-Call system, a utility location service, at 687-2470 to request all members to locate any existing lines within the project area.
- The buried utilities as shown on the plans are approximate locations only. It should be noted that other buried lines and cables may exist which are not shown on these plans. The Contractor shall exercise extreme caution during trenching operations to avoid damaging these lines. Any lines damaged shall be replaced or repaired immediately as directed by the Engineer at the Contractor's expense.
- At least 24 hours before connecting new sewer pipe to the existing sewage system, the Contractor shall contact the Sedgwick County Eastern Sewer District (733-0202). The Contractor shall keep any construction debris from entering the existing sanitary sewer during construction. To prevent water or 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.
- 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 at the Contractors expense.
- Excess excavation material and other debris shall be wasted on sites to be provided by the Contractor as approved by the engineer at no additional cost to the Owner. Approved excess material shall be stockpiled in a location as approved by the developer.
- 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 the 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.
- The Contractor shall restore all ditches, swales, road shoulders, and banks to their original slopes and grades. Where existing entrance pipe, drainage pipe, signs, fences, etc., conflict with the proposed work herein, they shall be removed and replaced or reset unless otherwise indicated on the plans replacement of all the aforementioned items, including seeding, fertilizer, and mulching shall be considered subsidiary to "Site Clearing and Restoration".
- Easements and right-of-ways provided by the Owner for the project are shown in the plans. The Contractor shall be responsible for the acquisition of any additional temporary easements or right-of-ways that he desires to use in completing the work.
- Positive drainage shall be provided for all areas on or near spoil areas. Natural drainage ways shall be maintained.
- The Contractor shall provide positive drainage away from all manhole covers.
- The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of 10 days advance notice prior to start of construction in the vicinity of the affected property.
- All trench backfill shall be either type I or type III unless noted otherwise.
- The Contractor shall contact the following at least 72 hours prior to beginning construction to advise them of the intended work and of his proposed schedule:
Sedgwick County Department of Public Works
1144 S. Seneca
Wichita, KS. 67213
Mr. Paul Taylor
(316) 383-7901
- The Contractor shall avoid removal or trimming or any trees where possible. Where the Contractor believes the removal or trimming is unavoidable, he shall obtain the concurrence of the engineer before proceeding with such work.
- Rubble from the removal of miscellaneous structures including any trees removed, tree trimmings, and excess excavation which is to be wasted, shall be disposed of on sites provided by the Contractor. These sites shall also be approved by the engineer as to suitability, appearance, and site location. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a floodplain will require a Kansas State Board of Agriculture permit and a floodplain development permit from Sedgwick County. Any materials dumped in waters of the United States or wetlands is subject to U.S. Corps of Engineers permitting regulations. Any materials buried or stockpiled beyond approved construction limits may require archaeological investigations unless buried in a previously approved disposal location.
- Each bidder shall visit the site of the project before submitting the proposal for this work so that he will be fully informed of the existing field conditions and the obstacles which might be encountered. Upon award of the contract, the Contractor will not be granted any additional compensation with regards to time and money for conditions that may have been evaluated during an inspection of the site.
- All grassed areas disturbed by construction of the proposed improvement shall be replanted with grass and fertilized in accordance with the specifications for such work. All costs for seeding and fertilizing shall be considered subsidiary to "Site Clearing and Restoration".
- Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with new construction. Contractor will be required to remove such improvements should they not be removed by their owner at the time of construction of the project. The Contractor will be required to salvage all sprinkler heads and/or valves and give such material to their owner. Portions of underground sprinkler systems not in conflict with new construction shall be protected from damage and shall remain in place. All work in connection with underground sprinkler systems shall be considered as subsidiary to price bid for pipe in place.
- The Contractor shall not bury manholes that have rim elevations which are lower than existing ground at the manhole. The ground around such manholes and along the sewer alignment shall be backfilled to the approximate elevation of the proposed ground elevation shown on the plan/profile sheets. The Contractor shall provide drainage away from these manholes and sewer lines by construction of temporary ditches or sloping the ground as required. All costs for this work shall be considered subsidiary to the installed bid price for manholes or pipe.
- The Contractor shall provide mounded earth at manholes and cleanouts that have top elevations greater than 1 foot above finished grade, as shown on the plans. Costs for mounding shall be considered subsidiary to the lump sum price bid for "Easement Grading".
- Contractor shall grade the sanitary sewer alignment to the profile and elevations shown on the easement grading plan. All costs for easement grading shall be subsidiary to the lump sum price bid for "Easement Grading".
- 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 County. 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 work.
- It shall be the responsibility of the Contractor to satisfy himself as to the existence of unusual subsurface conditions, and to allow for such conditions in his bid.
- Utility easement by separate instrument: Film 1972, Page 1866.



BENCHMARK:
BM #1: RR spike in PP east of 159th Street East, south of SE corner of Belriv Addition.
Elev. = 1304.55 MSL

BM #2: "□" cut in top of curb at the west end of the south curb of median on Elm Street east of 159th Street East.
Elev. = 1313.04 MSL

BM #3: Concrete nail in pavement at centerline of Lakeside Drive on the east shoulder of 159th Street East.
Elev. = 1310.21 MSL

BELRIV ADDITION GENERAL NOTES & PROJECT AREA				
BAUGHMAN COMPANY P.A. ENGINEERING, SURVEYING, & PLANNING 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211				
PROJECT NUMBER				SHEET
DESIGN BP				2
DRAWN TMC				OF
APPROVED				10
DATE		SCALE		
12-99		NOTED		

99-07-E406
Benefit Districts

BENCHMARK:
 BM #1: RR spike in PP east of 159th Street East, south of SE corner of Belriv Addition.
 Elev. = 1304.55 MSL

BM #2: "□" cut in top of curb at the west end of the south curb of median on Elm Street east of 159th Street East.
 Elev. = 1313.04 MSL

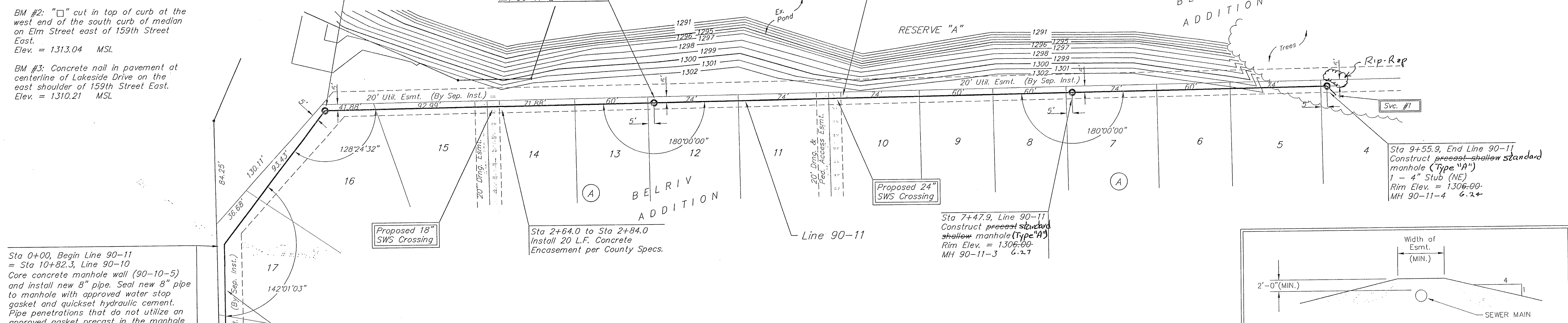
BM #3: Concrete nail in pavement at centerline of Lakeside Drive on the east shoulder of 159th Street East.
 Elev. = 1310.21 MSL

Sta 1+36.3, Line 90-11
 Construct inside drop manhole (Type "B")
 Rim Elev. = 1306.00
 MH 90-11-1 6.05

Sta 4+05.9, Line 90-11
 Construct standard manhole (Type "A")
 Rim Elev. = 1306.00
 MH 90-11-2 6.07

Sta 5+44.0 to Sta 5+64.0
 Install 20 L.F. Concrete Encasement per County Specs.

Scale: 1" = 40' Horizontal
 1" = 5' Vertical
 • = Iron

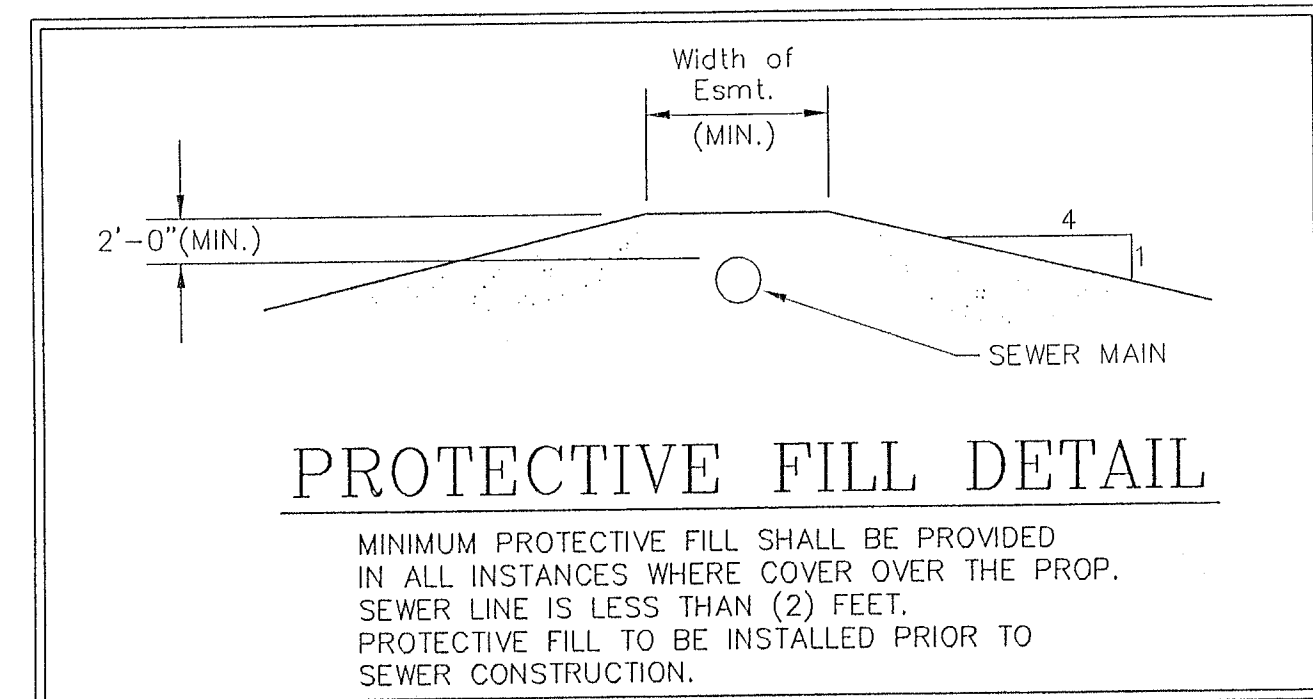


Sta 0+00, Begin Line 90-11 = Sta 10+82.3, Line 90-10
 Core concrete manhole wall (90-10-5) and install new 8" pipe. Seal new 8" pipe to manhole with approved water stop gasket and quickset hydraulic cement. Pipe penetrations that do not utilize an approved gasket precast in the manhole wall shall have the pipe encased a minimum of 3' from the face of the outside wall with Class I concrete. The contractor shall drill and epoxy 4-#4 dowels 12" in length into the manhole wall (2" into MH wall) and tie these dowels into the reinforcement for the concrete encasement at all pipe penetrations that do not use the gasket precast in the manhole.

SERVICE CONNECTION LOCATION TABLE

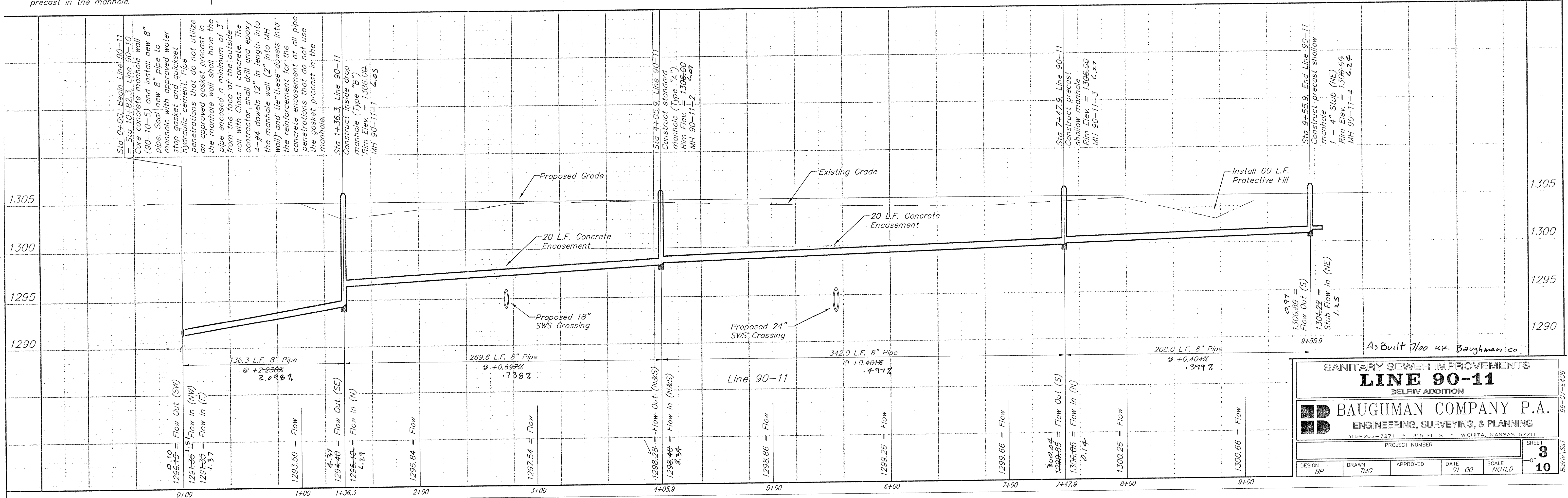
NUMBER	TYPE	LINE NO.	STATION	LOT	BLOCK	DIRECTION	Flow	TOP ELEV.
1	4" Stub	90-11	9+55.9	4	A	Right	1301.22	-

Remove Trees Only as Necessary for Sanitary Sewer Construction. Cost of Removal to be Subsidiary to Bid Item "Site Clearing and Restoration".



PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE SEWER LINE IS LESS THAN (2) FEET. PROTECTIVE FILL TO BE INSTALLED PRIOR TO SEWER CONSTRUCTION.



SANITARY SEWER IMPROVEMENTS
LINE 90-11
 BELRIV ADDITION

BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: _____ SHEET **3** OF **10**

DESIGN: BP DRAWN: TMC APPROVED: _____ DATE: 01-00 SCALE: NOTED

99-07-E406

BENCHMARK:
 BM #1: RR spike in PP east of 159th Street East, south of SE corner of Belriv Addition.
 Elev. = 1304.55 MSL

BM #2: "□" cut in top of curb at the west end of the south curb of median on Elm Street east of 159th Street East.
 Elev. = 1313.04 MSL

BM #3: Concrete nail in pavement at centerline of Lakeside Drive on the east shoulder of 159th Street East.
 Elev. = 1310.21 MSL

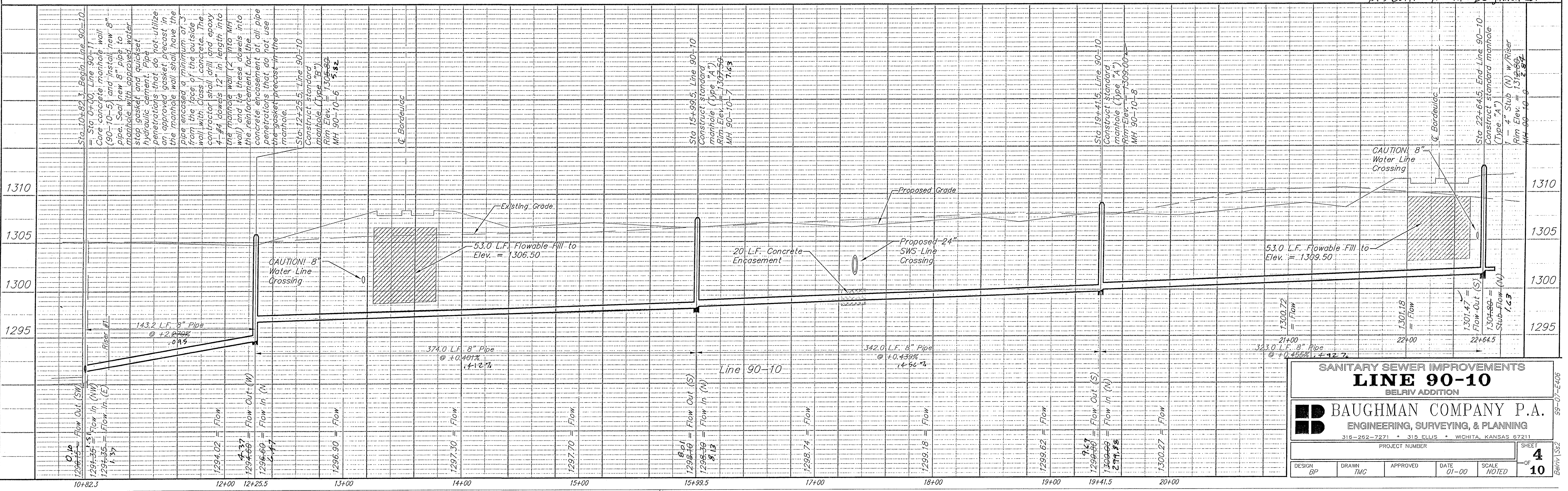
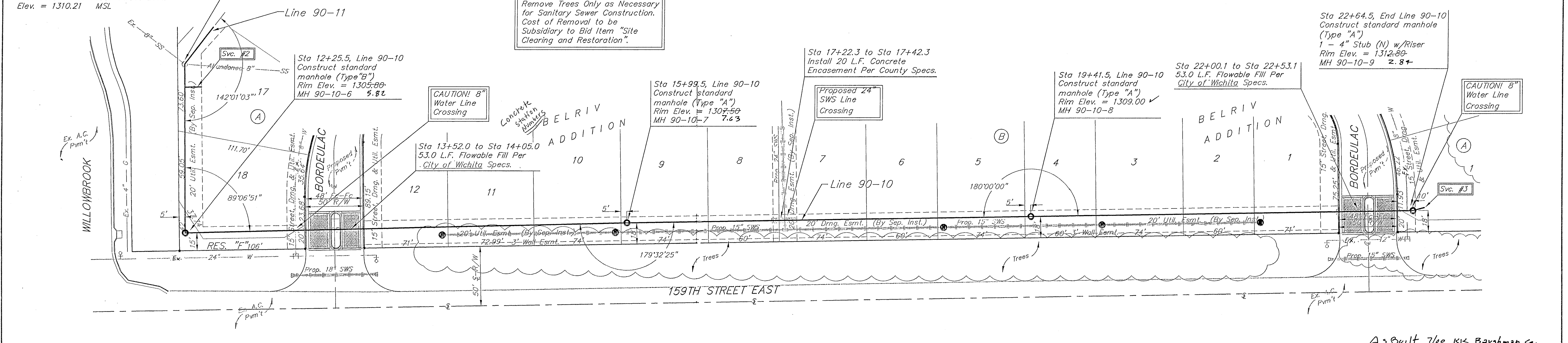
Sta 10+82.3, Begin Line 90-10 = Sta 0+00, Line 90-11
 Core concrete manhole wall (90-10-5) and install new 8" pipe. Seal new 8" pipe to manhole with approved water stop gasket and quickset hydraulic cement. Pipe penetrations that do not utilize an approved gasket precast in the manhole wall shall have the pipe encased a minimum of 3' from the face of the outside wall with Class I concrete. The contractor shall drill and epoxy 4-#4 dowels 12" in length into the manhole wall (2" into MH wall) and tie these dowels into the reinforcement for the concrete encasement at all pipe penetrations that do not use the gasket precast in the manhole.

SERVICE CONNECTION LOCATION TABLE

NUMBER	TYPE	LINE NO.	STATION	LOT	BLOCK	DIRECTION	Flow	TOP ELEV.
2	4" Riser	90-10	11+02.3	17	A	Left	1291.30	1297.30
3	4" Stub	90-10	22+64.5	1	A	Left	1301.80	1304.80

NOTE: Flowable Fill to be subsidiary to L.F. 8-Inch Pipe.

Scale: 1" = 40' Horizontal
 1" = 5' Vertical
 • = Iron



SANITARY SEWER IMPROVEMENTS
LINE 90-10
 BELRIV ADDITION

BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING

316-252-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: _____ SHEET: **4** OF **10**

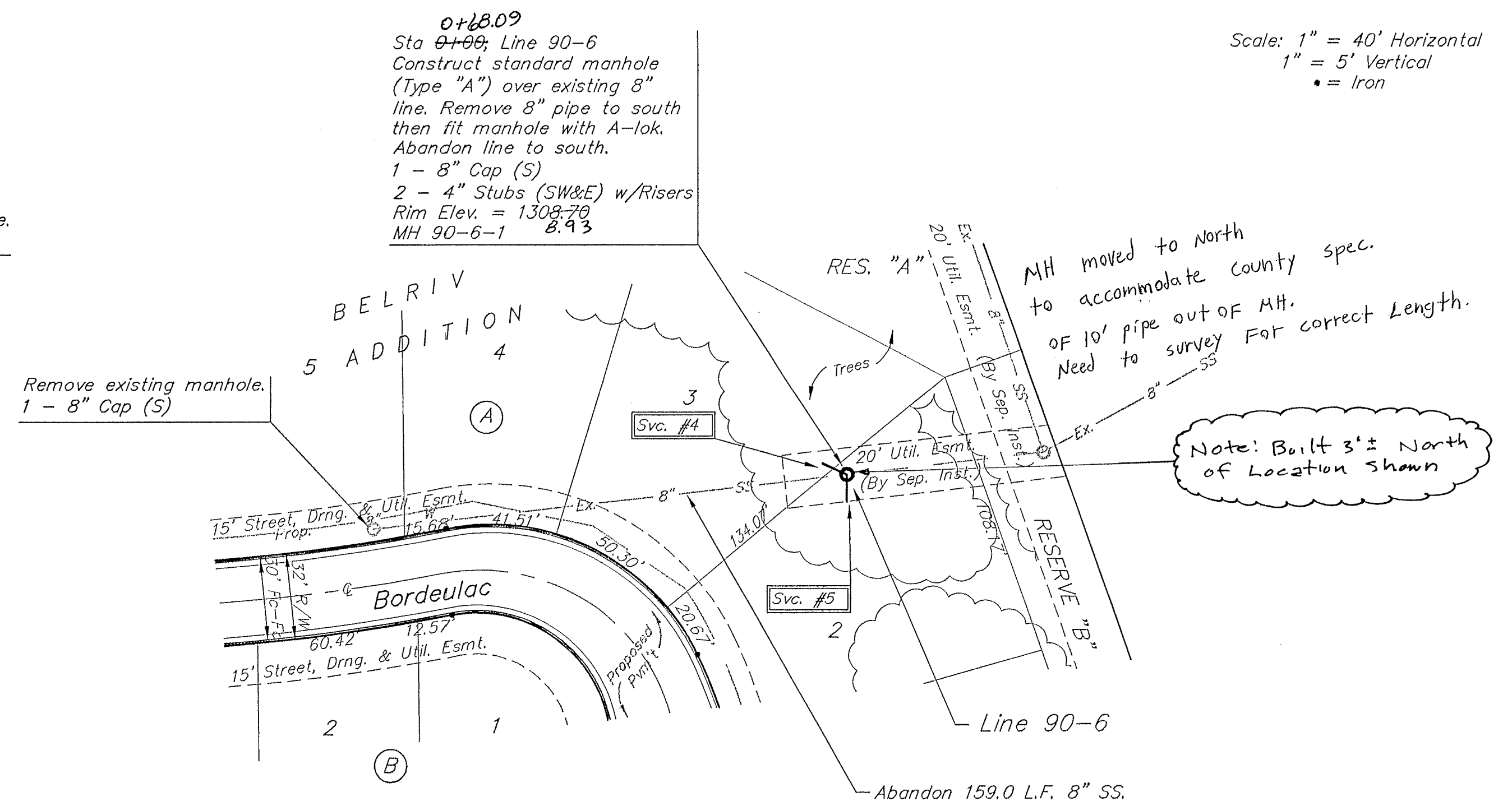
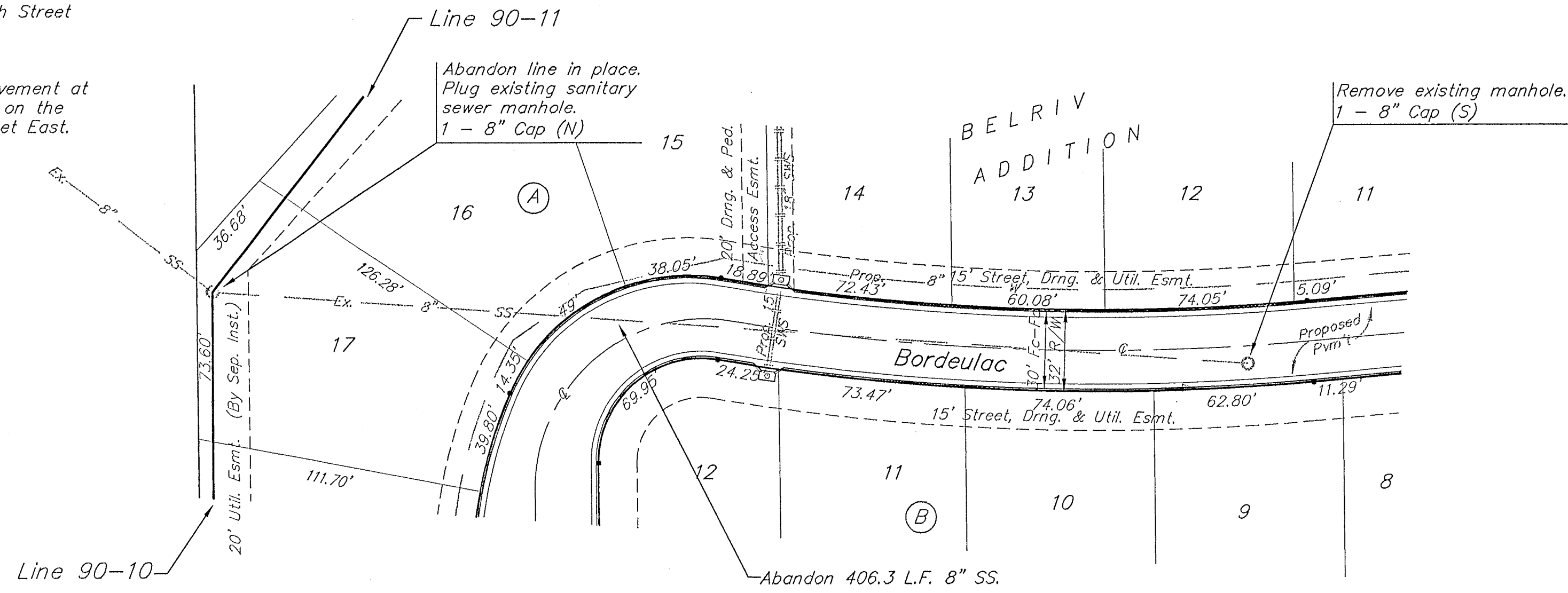
DESIGN: BP DRAWN: TMC APPROVED: _____ DATE: 01-00 SCALE: NOTED

89-07-E206
Barn\SS

BENCHMARK:
 BM #1: RR spike in PP east of 159th Street East, south of SE corner of Belriv Addition.
 Elev. = 1304.55 MSL

BM #2: "□" cut in top of curb at the west end of the south curb of median on Elm Street east of 159th Street East.
 Elev. = 1313.04 MSL

BM #3: Concrete nail in pavement at centerline of Lakeside Drive on the east shoulder of 159th Street East.
 Elev. = 1310.21 MSL



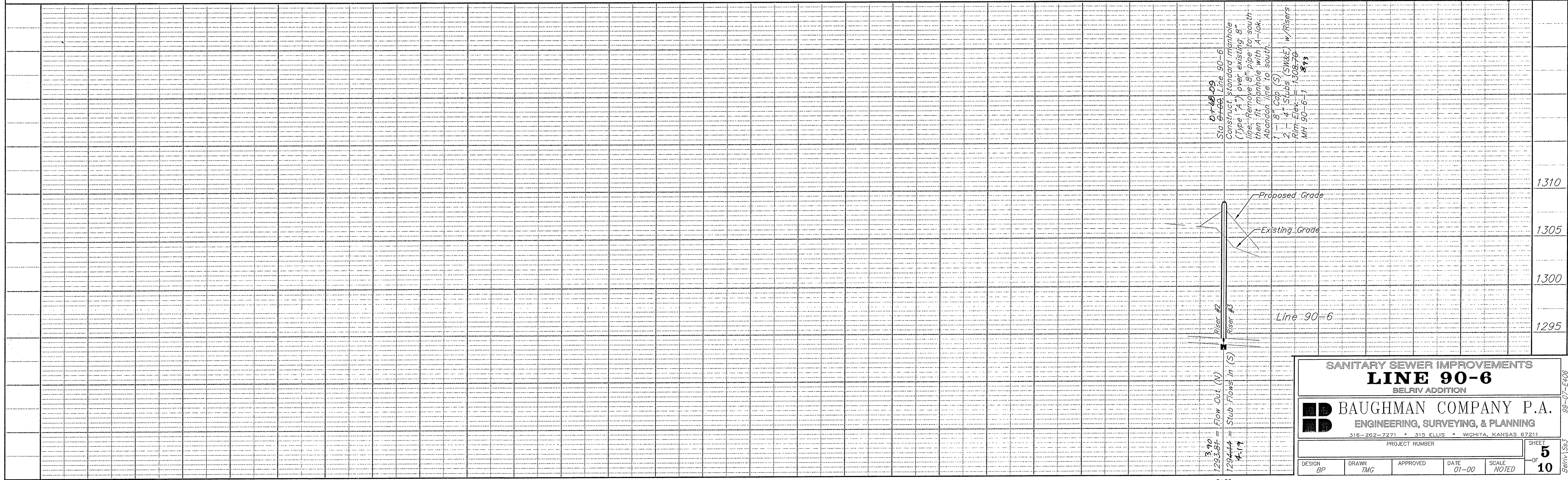
Scale: 1" = 40' Horizontal
 1" = 5' Vertical
 • = Iron

Remove Trees Only as Necessary for Sanitary Sewer Construction. Cost of Removal to be Subsidiary to Bid Item "Site Clearing and Restoration".

SERVICE CONNECTION LOCATION TABLE

NUMBER	TYPE	LINE NO.	STATION	LOT	BLOCK	DIRECTION	Flow	TOP ELEV.
4	4" Riser	90-6	0+80.09	3	A	-	1294.14	1303.14
5	4" Riser	90-6	0+80.09	2	A	-	1294.14	1303.14

As Built 7/00 KK Baughman Co.



SANITARY SEWER IMPROVEMENTS
LINE 90-6
 BELRIV ADDITION

BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: _____ SHEET **5** OF **10**

DESIGN: BP	DRAWN: TMG	APPROVED: _____	DATE: 01-00	SCALE: NOTED
------------	------------	-----------------	-------------	--------------

0+00

99-07-E06

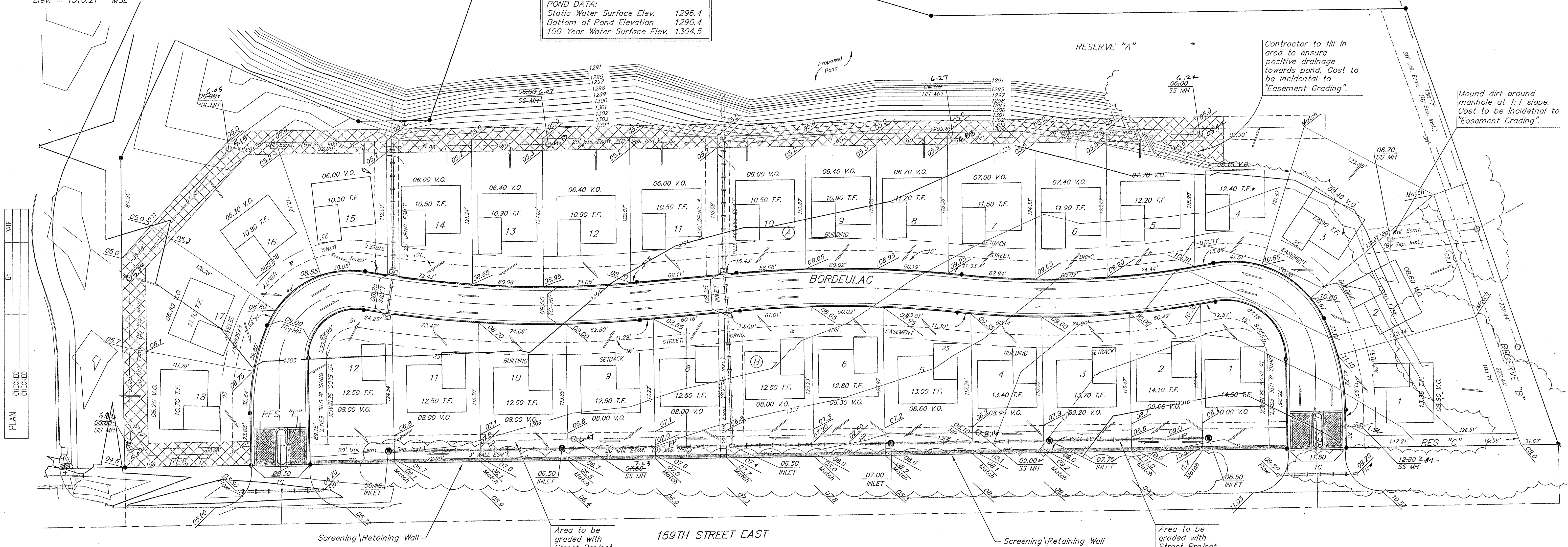
BENCHMARK:
 BM #1: RR spike in PP east of 159th Street East, south of SE corner of Belriv Addition.
 Elev. = 1304.55 MSL

BM #2: "□" cut in top of curb at the west end of the south curb of median on Elm Street east of 159th Street East.
 Elev. = 1313.04 MSL

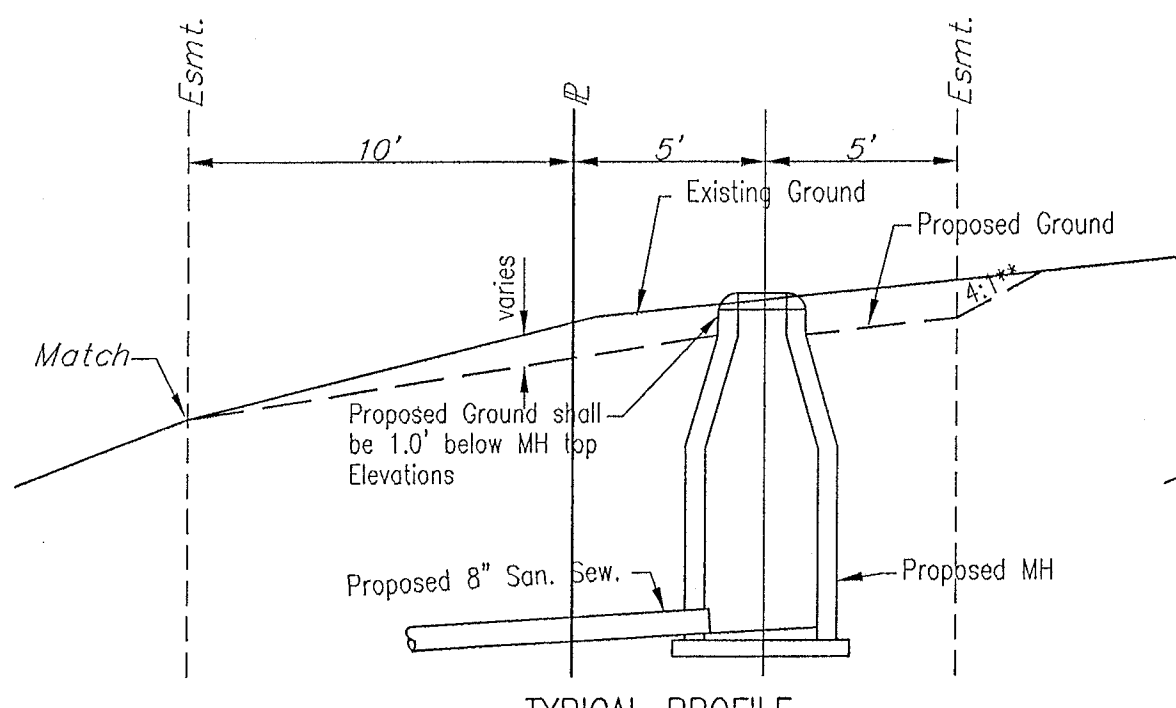
BM #3: Concrete nail in pavement at centerline of Lakeside Drive on the east shoulder of 159th Street East.
 Elev. = 1310.21 MSL

POND DATA:
 Static Water Surface Elev. 1296.4
 Bottom of Pond Elevation 1290.4
 100 Year Water Surface Elev. 1304.5

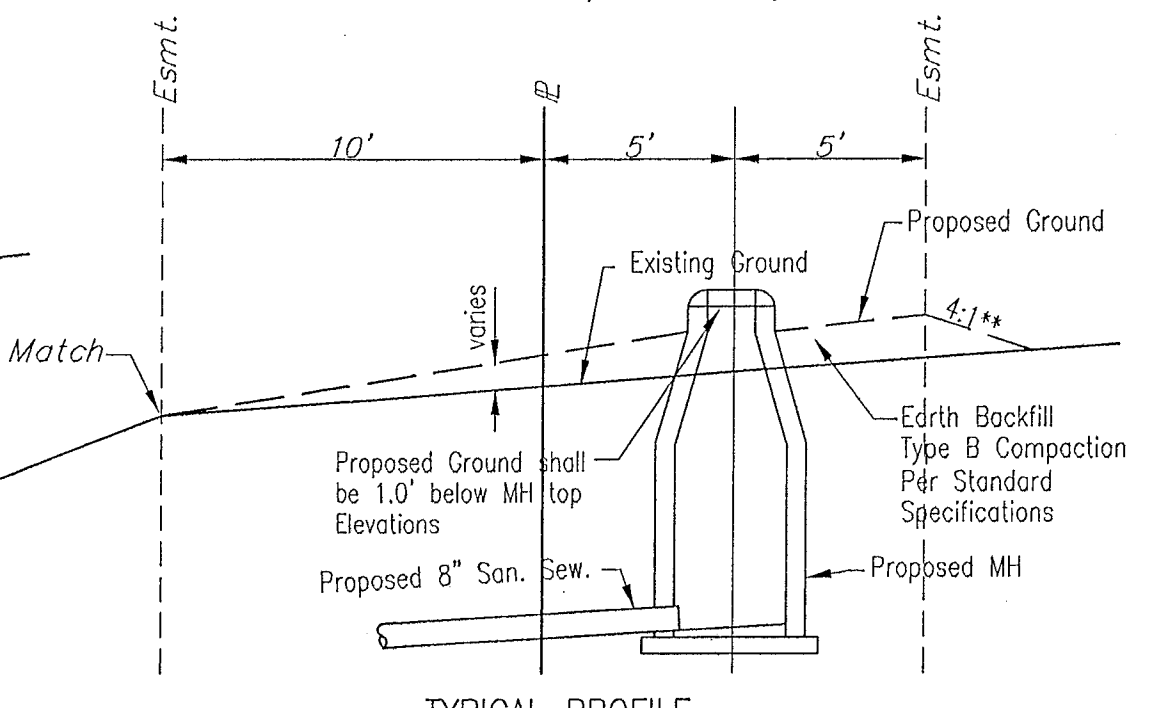
Scale: 1" = 40'
 • = Iron



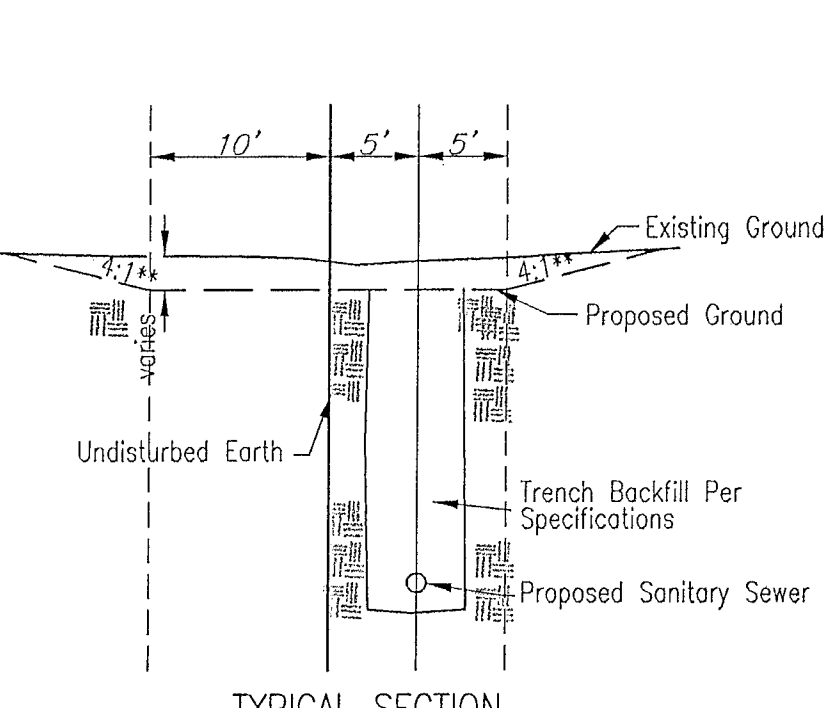
PLAN	CHECKED	CHECKED
BY		
DATE		



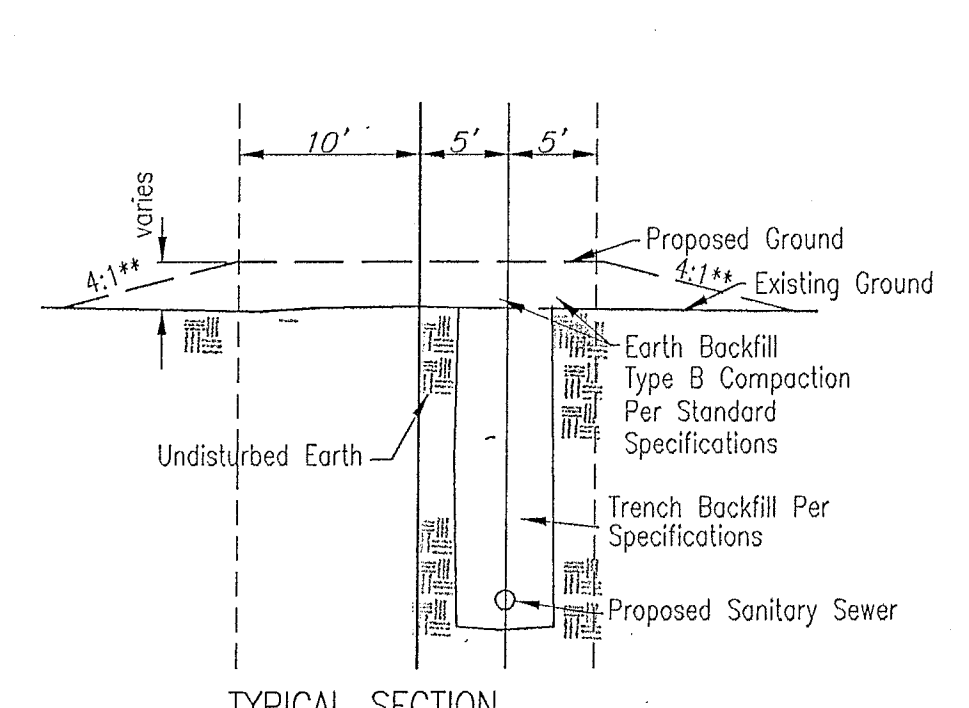
"CUT" SITUATIONS



"FILL" SITUATIONS



"CUT" SITUATIONS



"FILL" SITUATIONS

▨ = AREAS TO BE GRADED
 H.P. = HIGH POINT
 M.E. = MATCH EXISTING

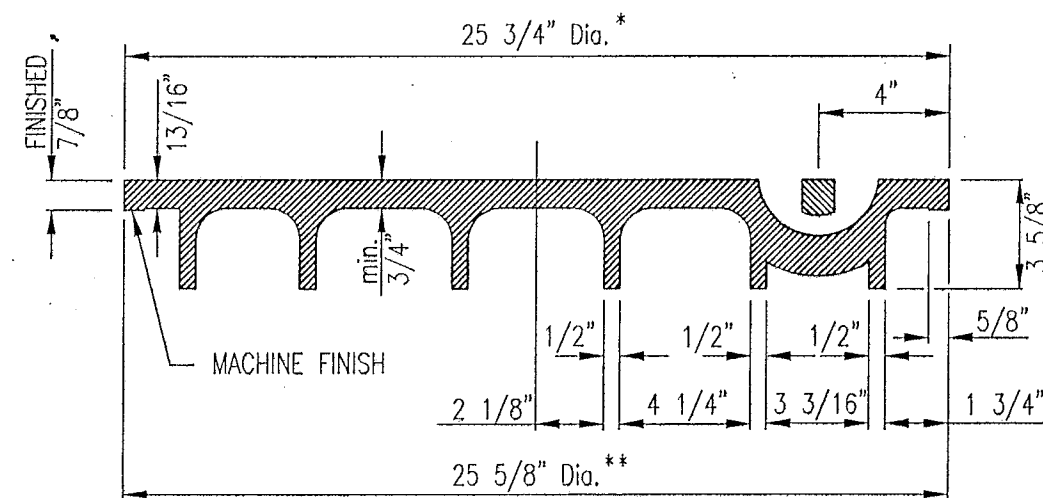
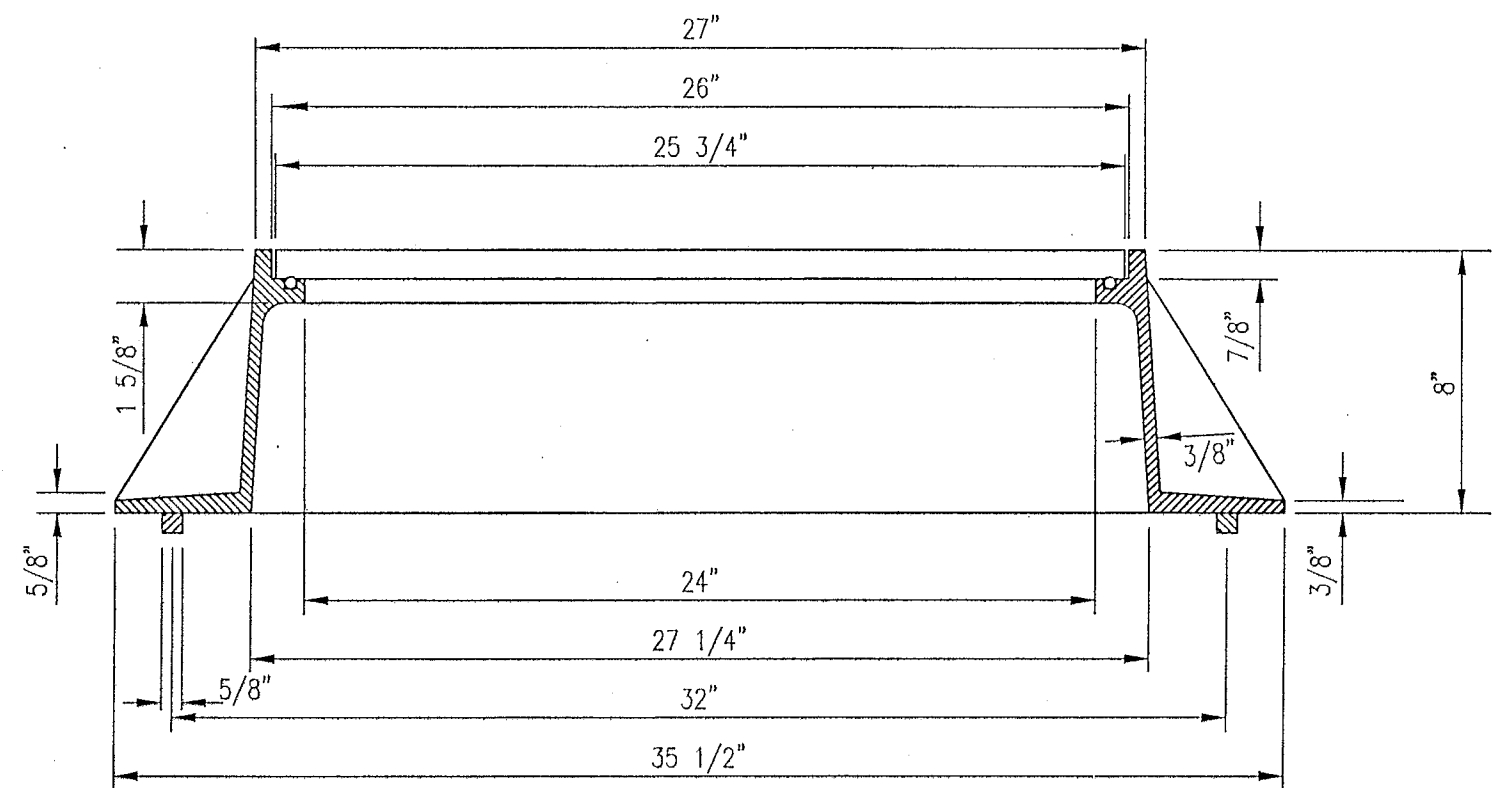
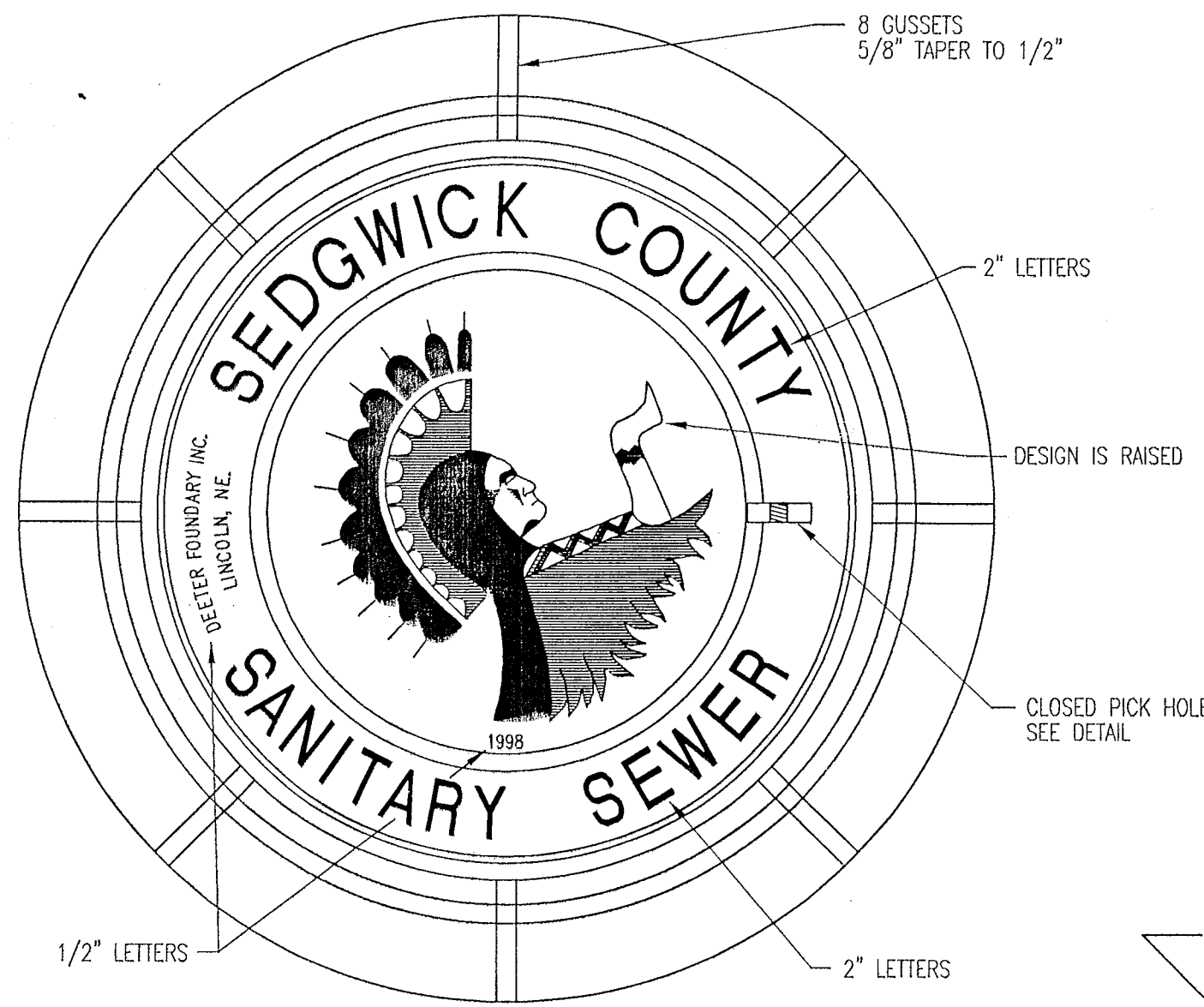
**Graded widths and slopes may vary as approved by the Engineer to minimize conflict with existing trees.

Easement Grading will be bid on a lump sum basis for grading the easements to the profile and elevations shown on the Easement Grading Plan (this sheet). Approximate quantities of earthwork for easement grading are shown below. These approximate quantities are given for information only. The Contractor should verify the quantities when preparing the proposal.
 Cut 209 C.Y. (Approximate)
 Fill 858 C.Y. (Approximate)

EASEMENT GRADING DETAILS

SHEET 6/10
 As Built 7/00 KR Bughman G. FIGURE 3

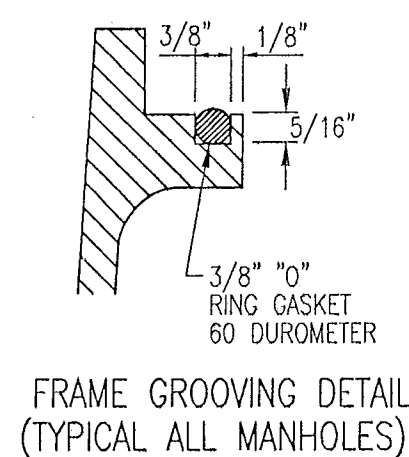
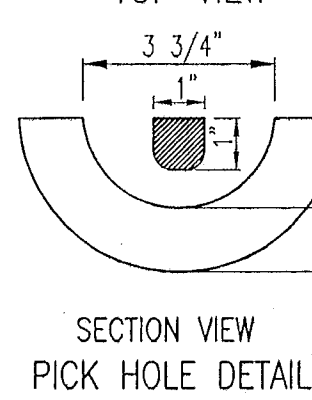
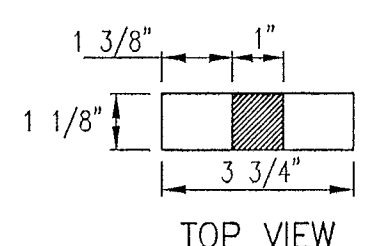
EASEMENT GRADING DETAILS
 ADOPTED AS STANDARD DESIGN JANUARY 1998
 BY
 SEDGWICK COUNTY PUBLIC WORKS
 DAVID C. SPEARS, P.E. DIRECTOR, PUBLIC WORKS/COUNTY ENGINEER



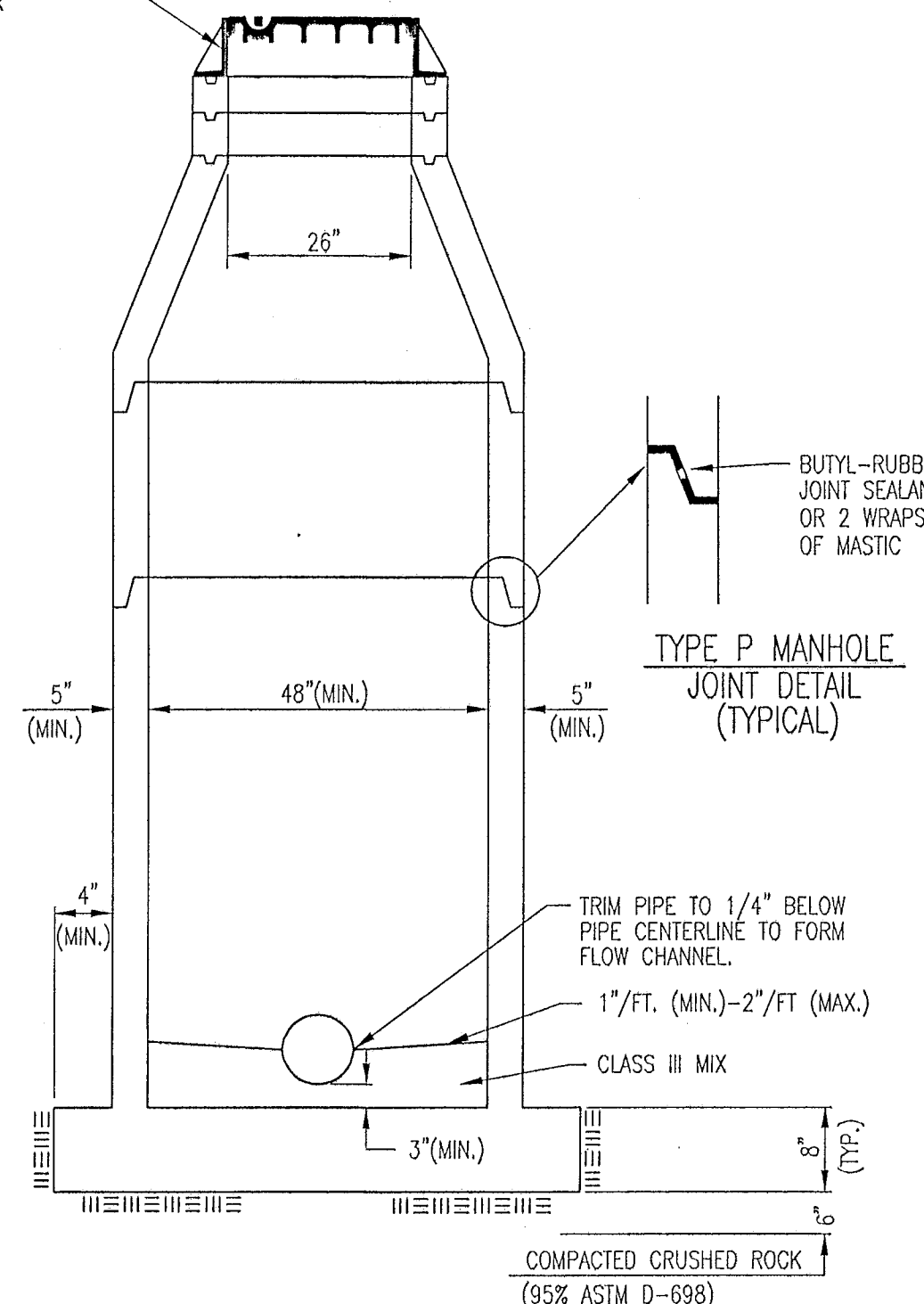
MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 325 LBS.)

MANHOLE FRAME AND COVER NOTES

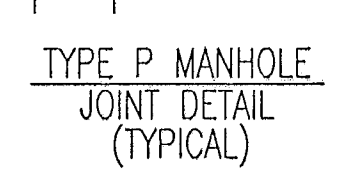
1. CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 30B, OR BETTER.
2. CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GRINDING SMOOTH. DIMENSIONS AS DETAIL ON PLAN SHALL NOT VARY BY 1/16" PER FOOT.
3. NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
4. CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
5. THE FRAMES AND COVERS SHALL BE FINISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
6. MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261C OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT. = 325 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
7. THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REQUEST CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
8. THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED CONTINUOUS "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (PER DETAIL). THE "O" RING GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE FRAME WITH 100% SILICON SEALANT-DOW CORNING OR EQUAL.



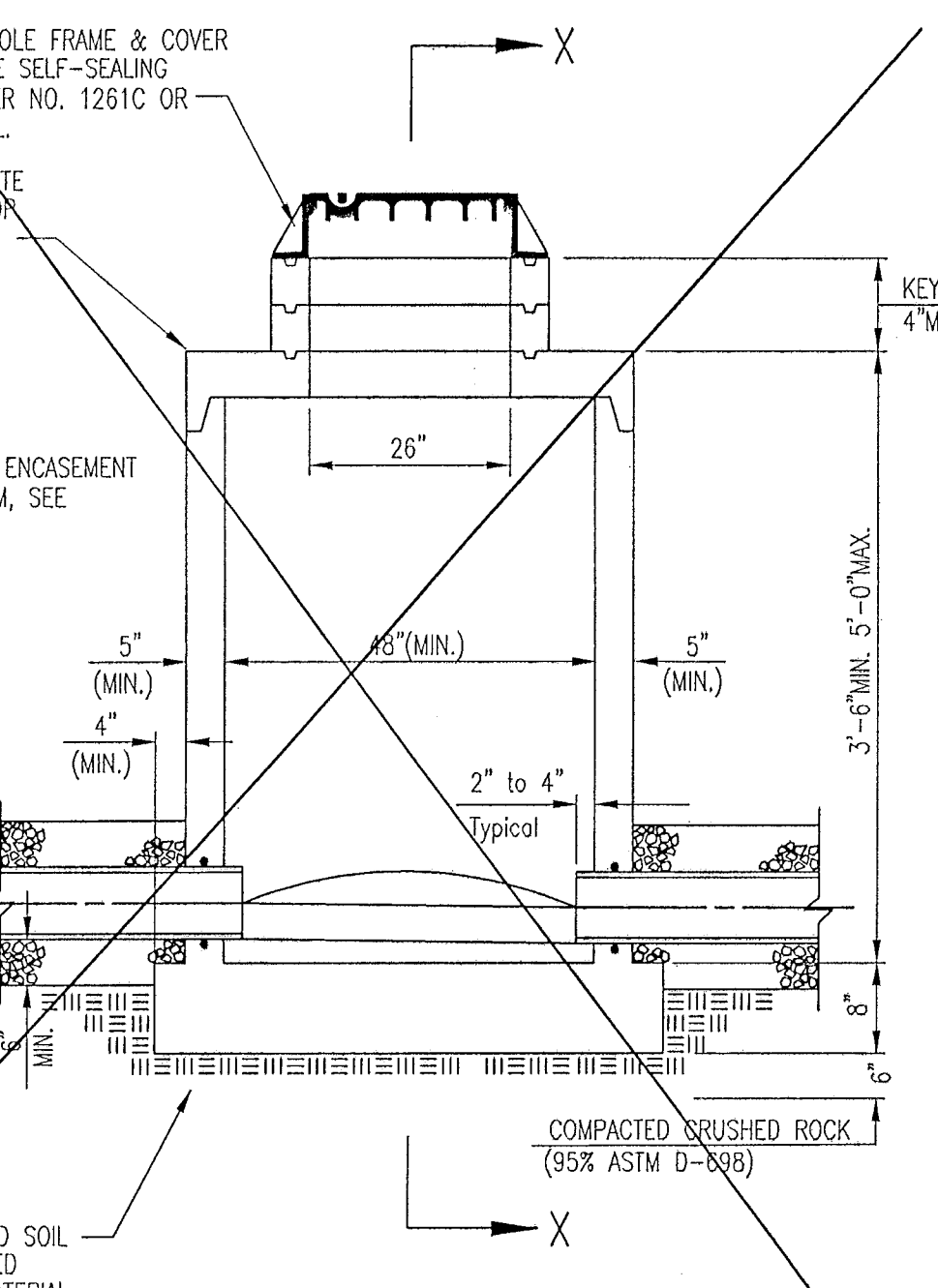
MANHOLE FRAME & COVER TO BE SELF-SEALING DEETER NO. 1261C OR EQUAL.



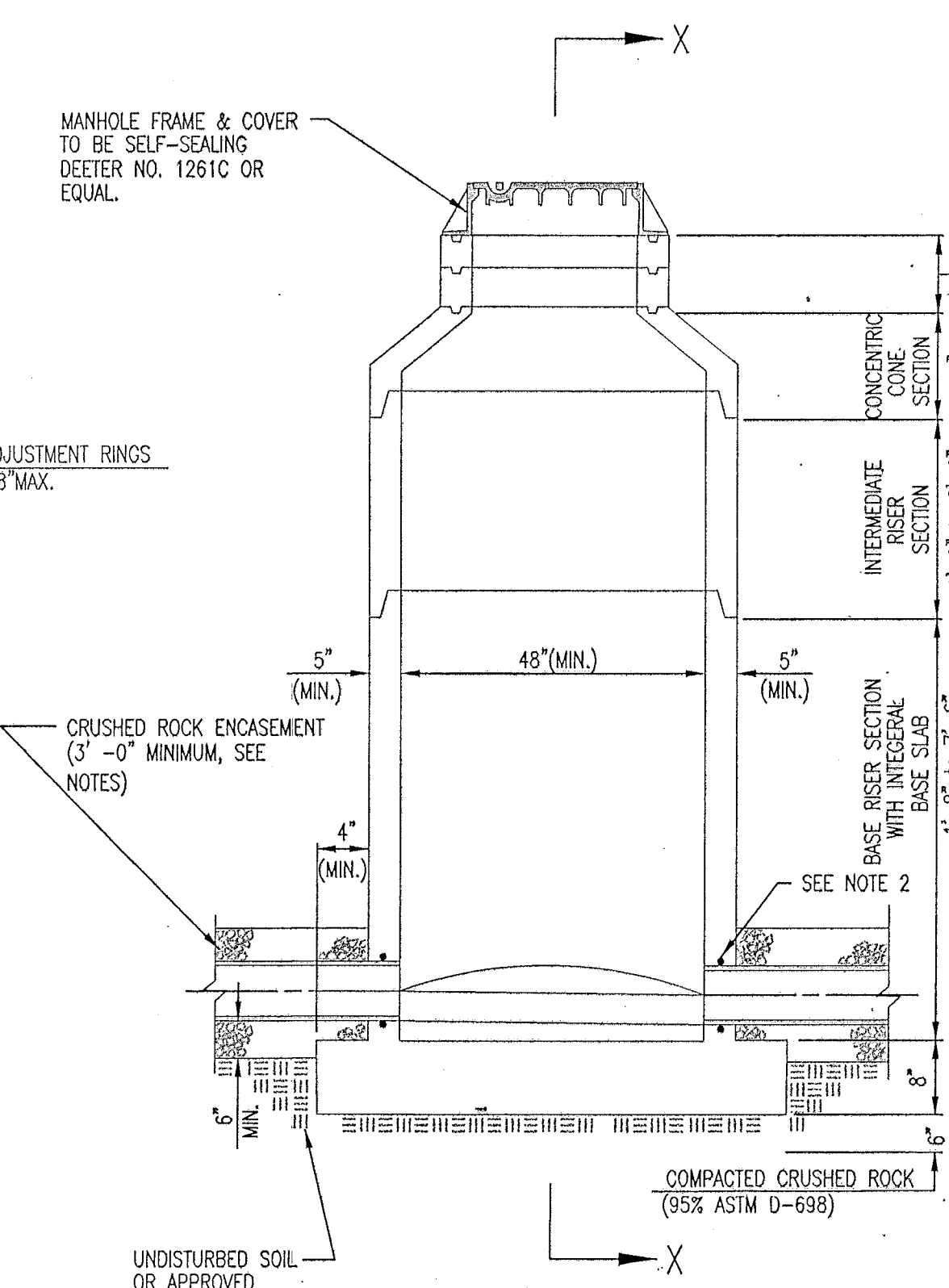
SECTION X (TYPICAL)



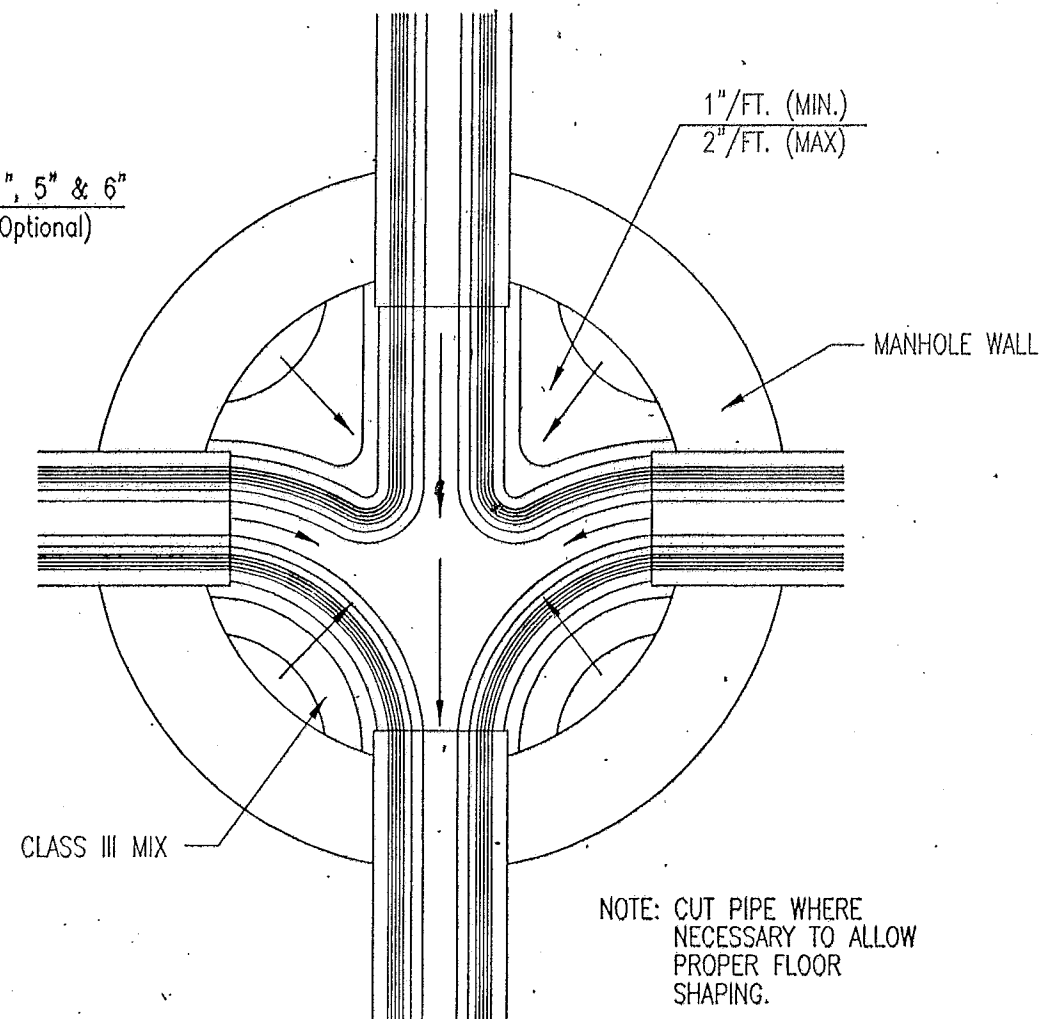
TRIM PIPE TO 1/4" BELOW PIPE CENTERLINE TO FORM FLOW CHANNEL.
1" FT. (MIN.) - 2" FT. (MAX.)
CLASS III MIX



PRECAST SHALLOW MANHOLE TYPE "D"



PRECAST SHALLOW MANHOLE



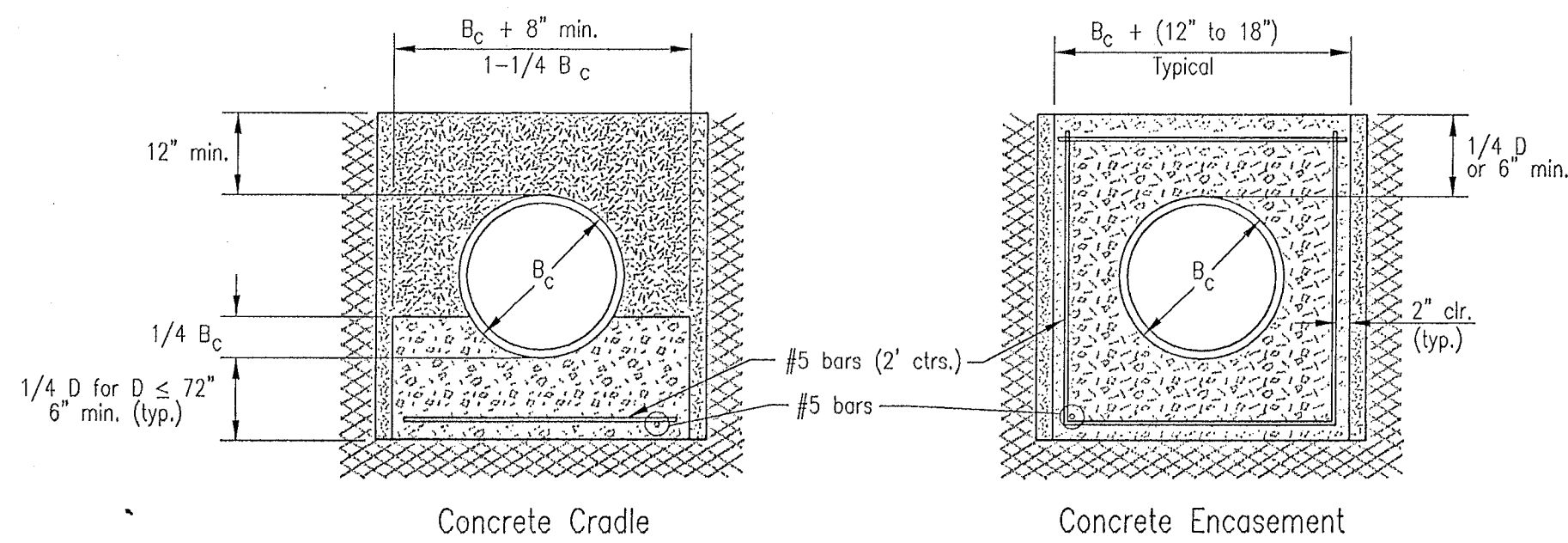
TYPICAL MANHOLE FLOOR SHAPING

PRECAST MANHOLE DETAILS

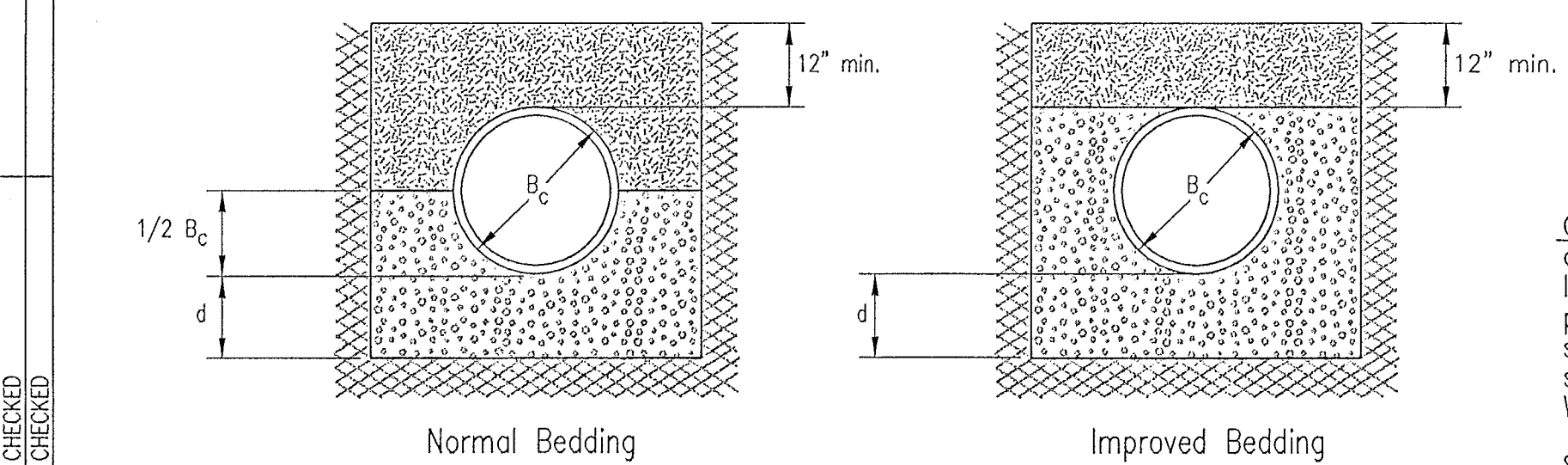
ADOPTED AS STANDARD DESIGN JANUARY 1998
BY
SEDGWICK COUNTY PUBLIC WORKS
DAVID C. SPEARS, P.E. DIRECTOR, PUBLIC WORKS/COUNTY ENGINEER

- PRECAST MANHOLE NOTES**
1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
 2. "A-LOCK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO CONNECT THE SEWER TO THE MANHOLE WALL.
 3. THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER OR MASTIC SEALANT TO PROVIDE WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RINGS AND THE MANHOLE FRAME.
 4. GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GULLED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
 5. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
 6. 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.
 7. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5" INSIDE DIAMETER (MIN.).
 8. INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE REDUCING FLAT TOP WHICH CONNECTS THE FOUR-FOOT DIAMETER CONE SECTION TO THE FIVE-FOOT DIAMETER CARRYING FLOW OUT OF THE MANHOLE.
 9. MANHOLES SHALL BE SUPPLIED WITH PRECAST BASE SECTIONS UNLESS OTHERWISE APPROVED. ALL PRECAST CONCRETE MANHOLE SECTIONS AND BASES SHALL CONFORM TO THE LATEST REVISION OF ASTM C478 AS MODIFIED BY THE SPECIFICATIONS. ALL MANHOLES WITH PRECAST BASES SHALL INCLUDE A-LOCK GASKETS FOR ALL PIPE PENETRATIONS INTO THE MANHOLES.
 10. WHERE MANHOLE STUBS ARE SHOWN ON THE PLANS, THE STUB SHALL EXTEND AT LEAST 5 FEET FROM THE INSIDE WALL OF THE MANHOLE. 4" STUBS SHALL BE SET AT 2.0% GRADE. 6" STUBS SHALL BE SET AT 1.0% GRADE.
 11. MANHOLE SECTIONS SHALL BE SUPPLIED WITH RECESSED LIFTING EYES. LIFTING EYE RECESSES SHALL BE GROUDED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
 12. WHERE A-LOCK GASKETS ARE REQUIRED, THE CONTRACTOR SHALL UTILIZE A CRUSHED ROCK BEDDING MATERIAL. THE ROCK BEDDING MATERIAL SHALL EXTEND TO 3 FEET FROM THE MANHOLE WALL, AND SHALL BE COMPACTED IN PLACE FROM THE BOTTOM OF THE DISTURBED AREA TO 1 FOOT ABOVE THE TOP OF PIPE. THE CRUSHED ROCK WHICH IS PLACED BELOW THE PIPE BEDDING ZONE SHALL BE COMPACTED TO 95% ASTM D-698(4IN).
 13. WHERE MANHOLES ARE TO BE BUILT OVER EXISTING SANITARY SEWER LINES, SEWER PIPES SHALL BE SUPPORTED WITH CLASS I CONCRETE ENCASEMENT A MINIMUM OF 3 FEET OUTSIDE THE MANHOLE WALL.
 14. CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

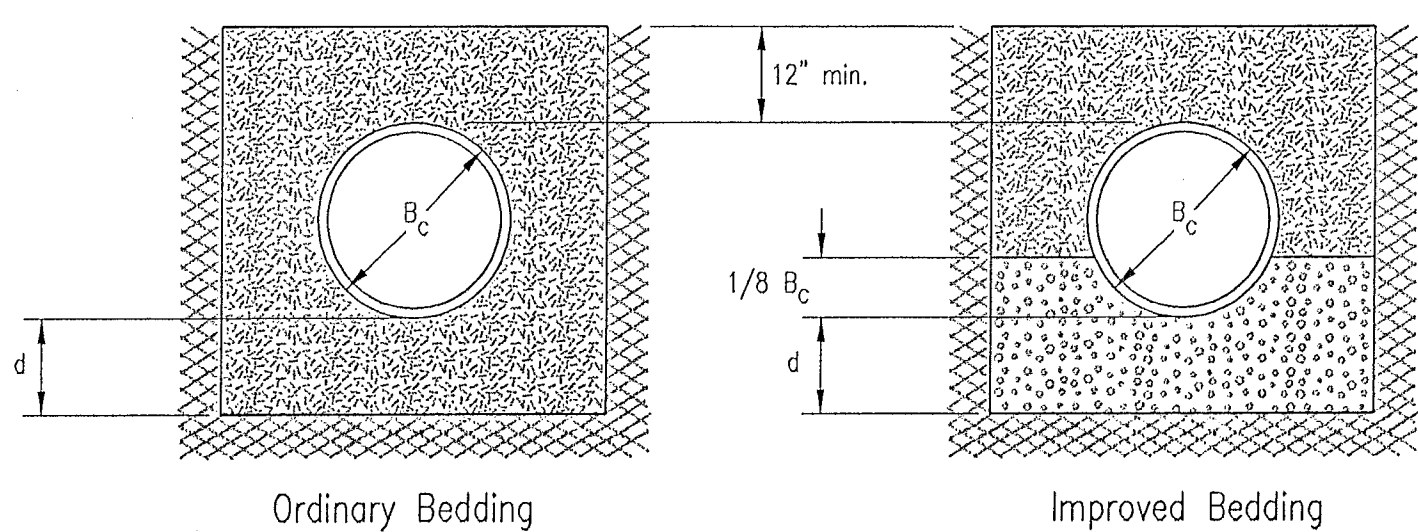
Revised 01-00 By Baughman Co. - Precast Shallow MH



CLASS A



CLASS B



CLASS C

PIPE ZONE BACKFILLING

- B_c = Outside Pipe Diameter
- H = Backfill from Top of Pipe to Existing Ground
- D = Inside Pipe Diameter
- d = Depth of Bedding Material Below Pipe
- [Symbol] = Granular Bedding Material or Sand-Gravel Bedding
- [Symbol] = Compacted Embedment
- [Symbol] = Concrete

Depth of Bedding Material Below Pipe		
D	d(min) Soil	d(min) Rock
27" & smaller	4"	6"
30" to 60"	5"	9"
66" & larger	6"	12"

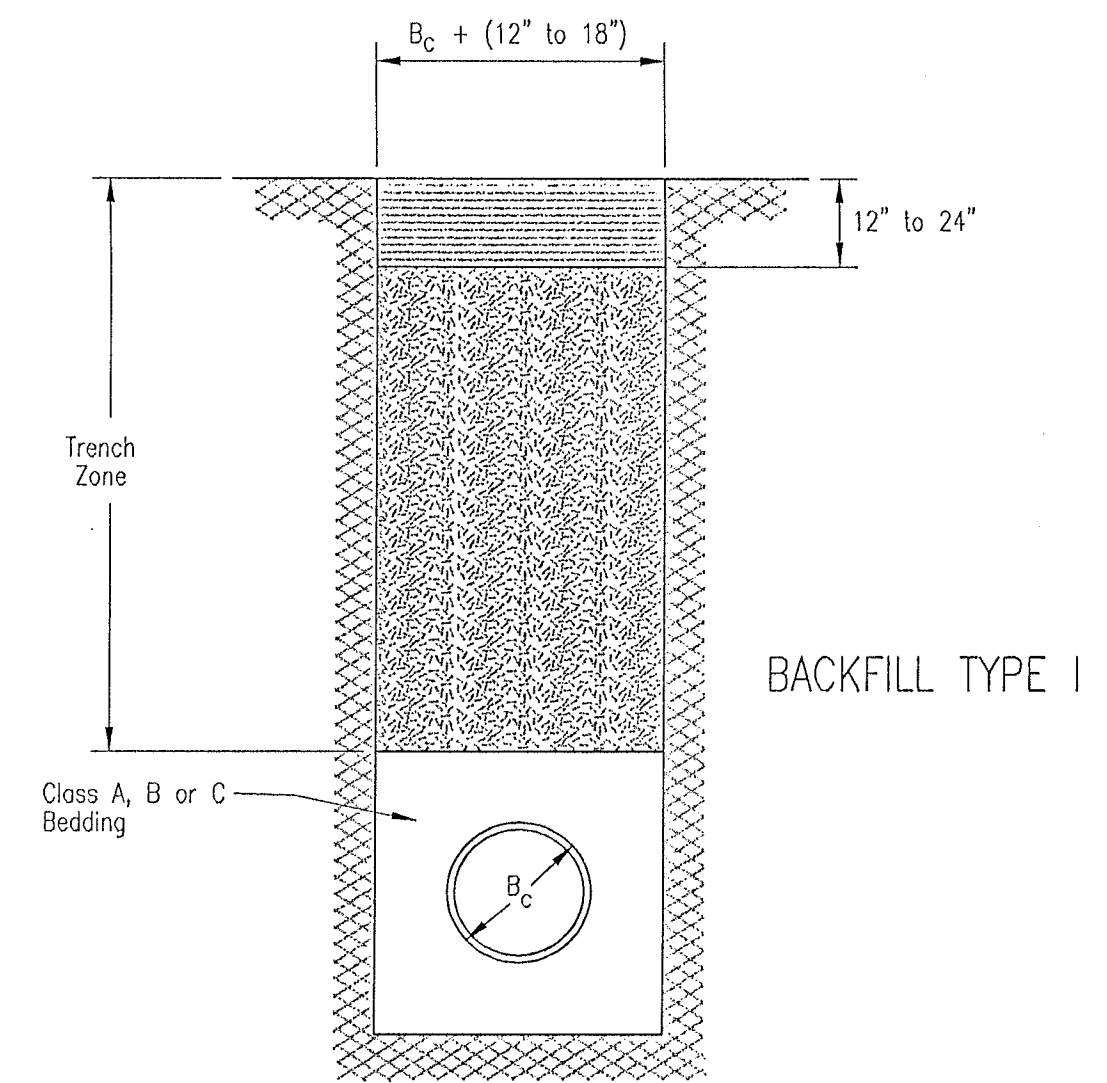
Granular Bedding Material shall be an approved material consisting of durable crushed rock conforming with the requirements of the latest revision of ASTM C-33 Size No. 67 (3/4" to No. 4); to be placed in not more than 6" layers and compacted by slicing with a shovel or vibrating. Soundness, abrasion, and absorption limits shall be as required for coarse aggregates in Section 03010-Concrete Work in the specifications.

Sand-Gravel Bedding Material - sand-gravel mix meeting Type UD-1 of the 1990 Kansas Standard Specifications for State Road and Bridge Construction.

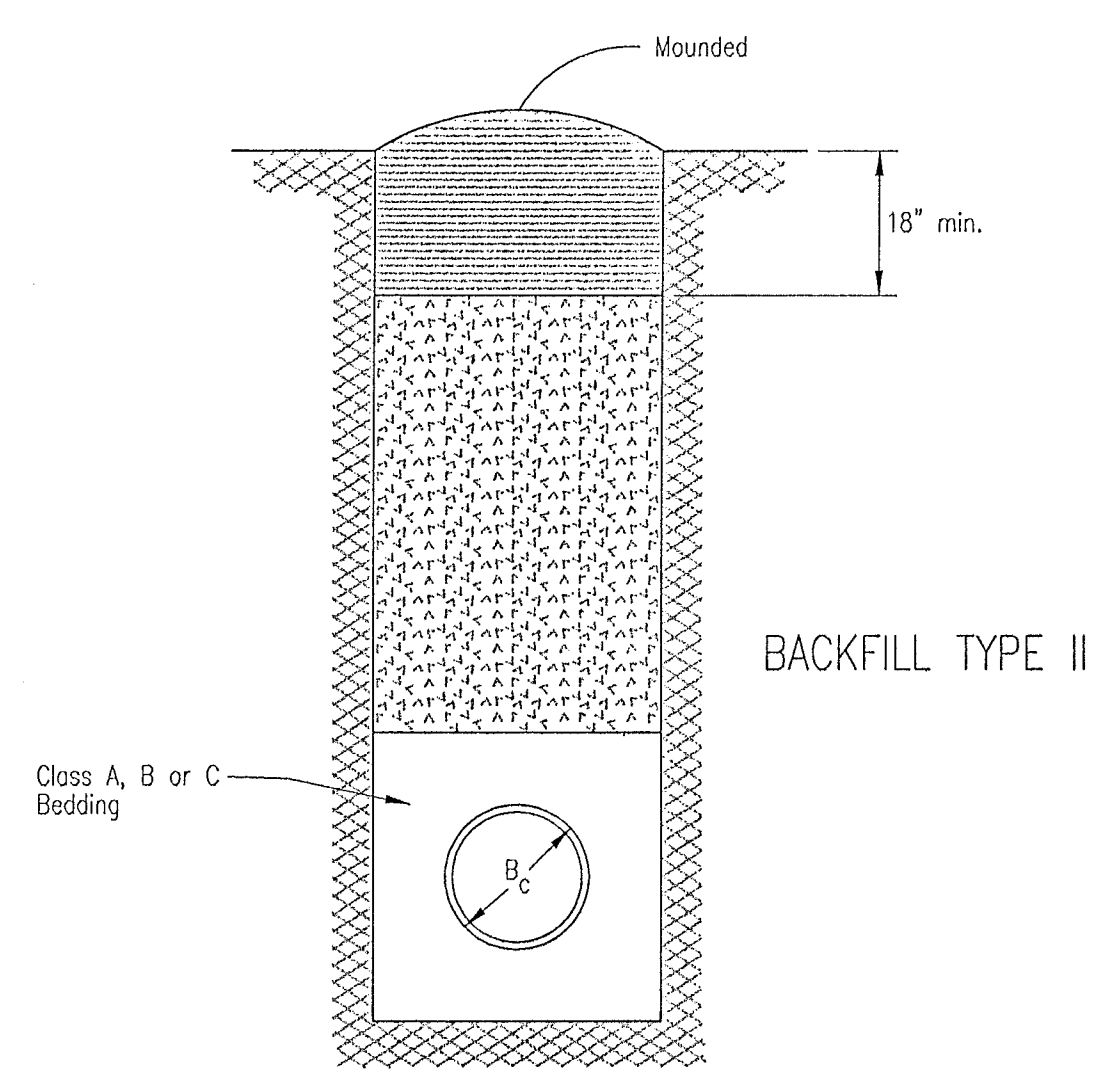
Compacted Embedment shall be an approved sand material free from debris, organic material, and stones with 100% passing the 3/4" sieve to be placed in uniform layers not more than 6" thick and compacted to 95 percent maximum density as determined by ASTM D698. Granular Bedding Material may be substituted for all or part of Compacted Embedment Materials.

Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

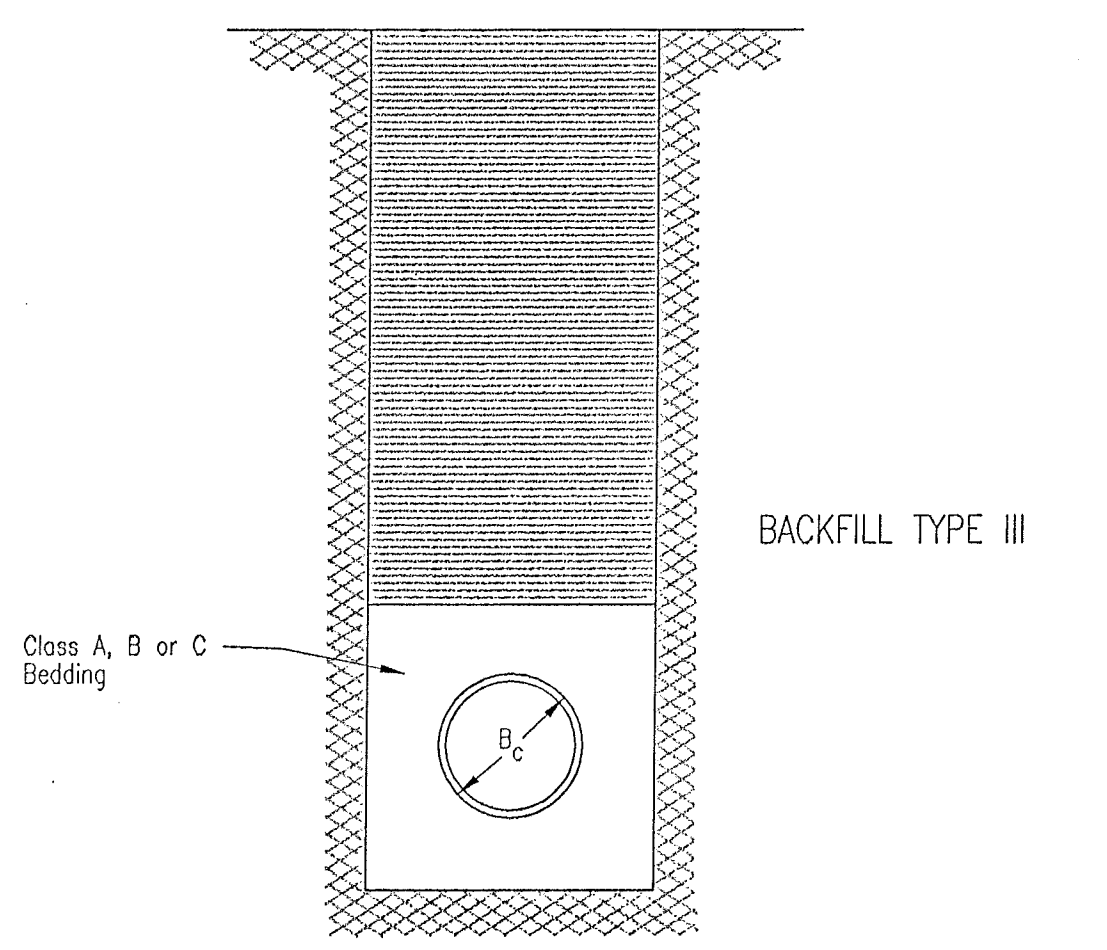
- Class B Bedding shall be used for all flexible pipe.
 - a. Class B Normal Bedding shall be used for PVC Pipe unless wet conditions are encountered.
 - b. Class B Improved Bedding shall be used for other flexible pipe, and for PVC pipe in wet conditions.
- Class C Bedding shall be used for all rigid pipe.
 - a. Class C Ordinary Bedding shall be used for all rigid pipe unless wet conditions are encountered.
 - b. Class C Improved Bedding shall be used for wet conditions existing in the trench, as directed by the Engineer, at no additional cost to the Owner. The dimensions shall be equal to that required for "rock" excavation (see specifications).



BACKFILL TYPE I



BACKFILL TYPE II



BACKFILL TYPE III

- B_c = Outside Pipe Diameter
- [Symbol] = Compacted Granular Backfill
- [Symbol] = Uncompacted Earth Backfill
- [Symbol] = Compacted Earth Backfill

Compacted Granular Backfill material shall be an approved sand material free from debris, organic material and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jetted and mechanically vibrated into place and compacted to 95% density as determined by ASTM D698.

Uncompacted Earth Backfill material may be natural soil free from large clods or stones, brush, roots more than 2 inches in diameter, debris, and junk. Flooding with water shall be provided as directed by the Engineer.

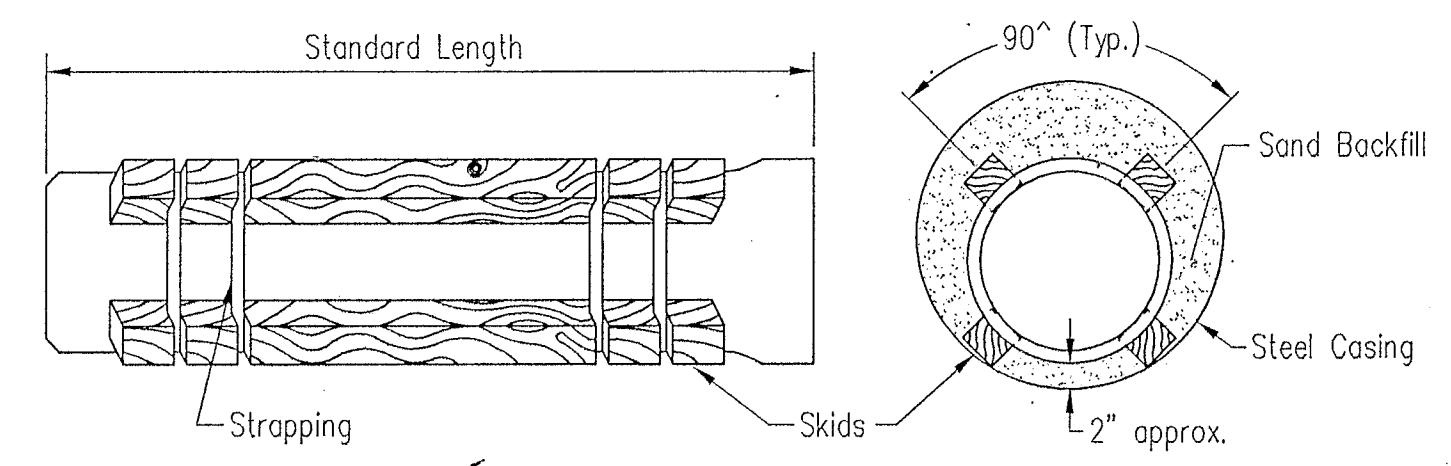
Compacted Earth Backfill shall consist of material existing prior to trenching or selected material as directed by the Engineer, and shall be compacted to 90% density as determined by ASTM D698.

Backfill: Backfill material and compaction requirements shall conform to either Type I, Type II or Type III as specified in the plans. One years maintenance will be required on all backfill.

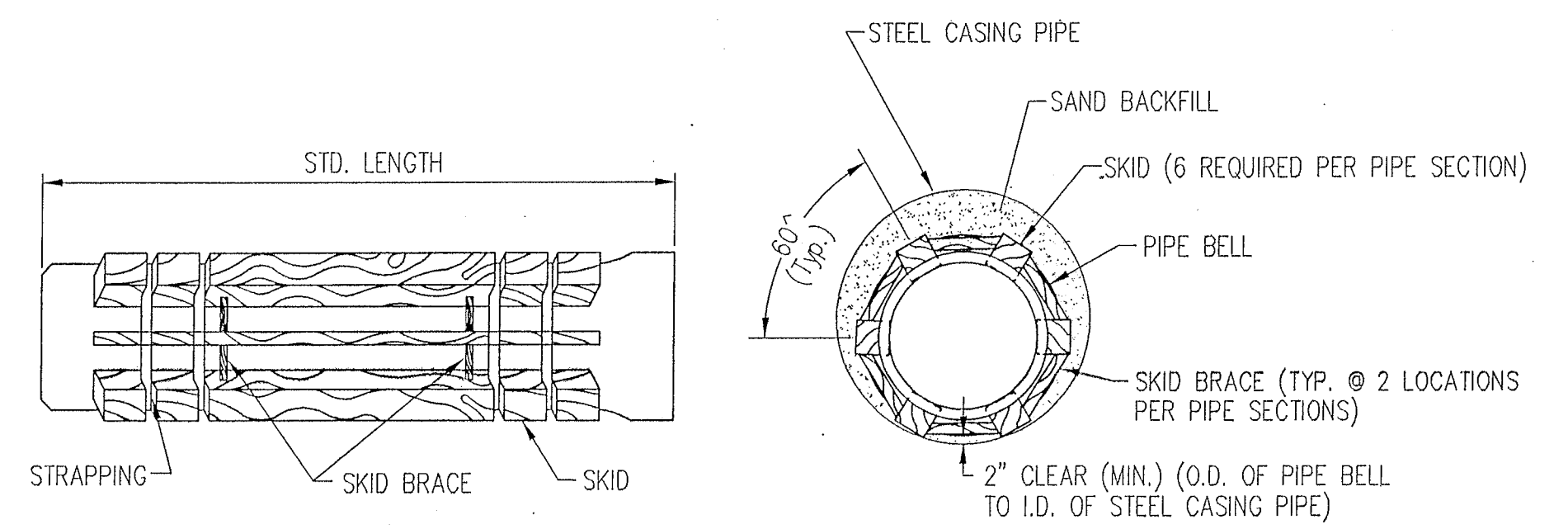
Backfilling Through Rock: Backfilling through rock shall be performed as specified in the paragraph Backfill above, except that the Pipe Zone is increased to provide eighteen (18) inches of cover over the pipe. When approved by the Engineer the remainder of the backfill may be excavated rock provided the excavated rock has been broken up so that earth and rock will thoroughly mix and not result in voids around the larger pieces of rock. Any excess rock remaining after the trench has been backfilled shall be removed or wasted as directed by the Engineer.

Backfilling Under Pavement: Backfilling under existing or proposed pavement shall be performed as Backfill Type I to a level of two (2) feet from the bottom of the pavement. The remainder of the trench shall be backfilled with selected material, sufficiently damp to be properly compacted in layers not exceeding six (6) inches in depth, compaction shall be performed with mechanical tampers and continued until a relative density of 100 percent of standard density, in conformance with ASTM D698 is attained, *or as otherwise noted

Backfilling Under Gravel Streets: Where the trench crosses or is in existing gravel surfaced streets, the backfill shall be compacted as provided in the paragraph "Backfilling Under Pavement".



STEEL ENCASEMENT DETAIL
SEWER MAIN 12" AND UNDER



STEEL ENCASEMENT DETAIL
SEWER MAIN OVER 12"

BELRIV ADDITION SEDGWICK COUNTY, KANSAS

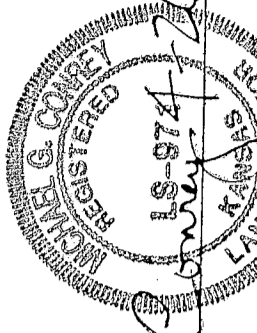
State of Kansas) SS

We, Baughman Company, P.A., Surveyors in Sedgwick County and state do hereby certify that we have surveyed and plotted "BELRIV ADDITION", Sedgwick County, Kansas and that the accompanying plat is a true and correct exhibit of the property surveyed, described as and being a replat of Lots 12, 13, 14, 15, and 16, Block 3, Belle Terre South, an Addition to Sedgwick County, Kansas.

All being situated in the SE 1/4 of Sec. 24, Twp. 27-S, R-2-E of the 6th P.M., Sedgwick County, Kansas. Existing easements and dedications being vacated by virtue of K.S.A. 12-512(b).

Baughman Company, P.A.

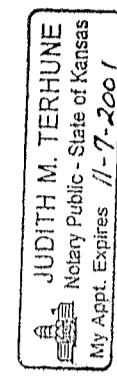
Michael G. Conroy
Surveyor



Know all men by these presents that we, the undersigned, have caused the land in the surveyors certificate to be plotted into Lots, Blocks, a Street, and Reserves, to be known as "BELRIV ADDITION", Sedgwick County, Kansas. The street, drainage, and utility easements are hereby granted as indicated for street related purposes, for drainage purposes and for the construction and maintenance of all public utilities. The drainage easement is hereby granted as indicated for drainage purposes. The drainage and pedestrian access easement is hereby granted as indicated for drainage purposes and for pedestrian access purposes to or from Reserve "A" and no fences or other obstructions shall be constructed or placed on or within this easement. The wall easement is hereby granted as indicated for the construction and maintenance of a private screening wall and utility main lines and service lines shall be allowed to cross this easement. Reserve "A" is hereby reserved for floodway lakes, drainage, sidewalks, landscaping, and berms. Reserve "B" is hereby reserved for drainage, sidewalks, landscaping, and berms. Reserve "C" and "F" are hereby reserved for screening walls, entry monuments, sidewalks, landscaping, berms, and streets, drainage, and utilities as continued to easements. Reserves "D" & "E" are hereby reserved for streets, entry monuments, landscaping, and utilities. Reserves "A", "B", "C", "D", "E", and "F" shall be owned and maintained by the homeowners association for the addition. The streets are hereby dedicated to and for the use of the public. All abutting rights of access to or from 159th Street East over and across the east line of Reserves "B", "C", and "F", and over and across the east line of Lots 1 through 12, inclusive, Block B, are hereby granted to the appropriate governing body. The Minimum Building Pad Elevations for the lowest opening to the structures shall be as indicated on the face of the plat.

K. TODD ALLAM CONSTRUCTION, LLC
K. Todd Allam, Member

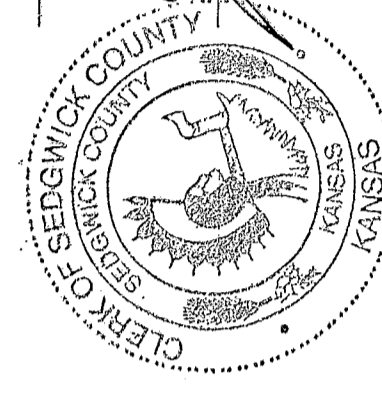
State of Kansas) SS
Sedgwick County) The foregoing instrument acknowledged before me, this 17th day of APRIL, 1999, by K. Todd Allam, Member of K. Todd Allam Construction, LLC, on behalf of the company.



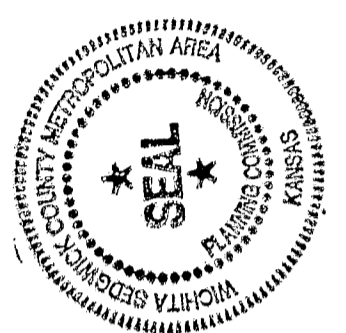
Judith M. Terhune, Notary Public
My App't. Exp. 11-7-2001

This plat approved and all dedications shown hereon accepted by the Board of Commissioners of Sedgwick County, Kansas, this 14th day of July, 1999.

Bill Hancock, Chairman
James Boyd, County Clerk

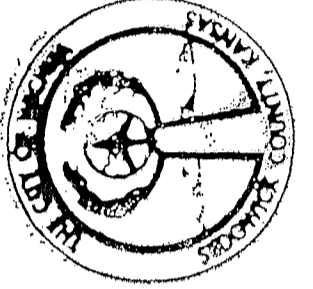


This plat of "BELRIV ADDITION", Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas. Dated this 15 day of April, 1999. Wichita-Sedgwick County Metropolitan Area Planning Commission



William M. Johnson, Chairman
Marvin S. Kroul, Secretary

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 21 day of JUNE, 1999.



Bob Knight, Mayor
Pat Burnett, City Clerk

Entered on transfer record this 14th day of July, 1999.
James Boyd, County Clerk

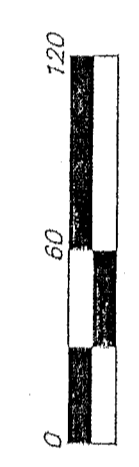
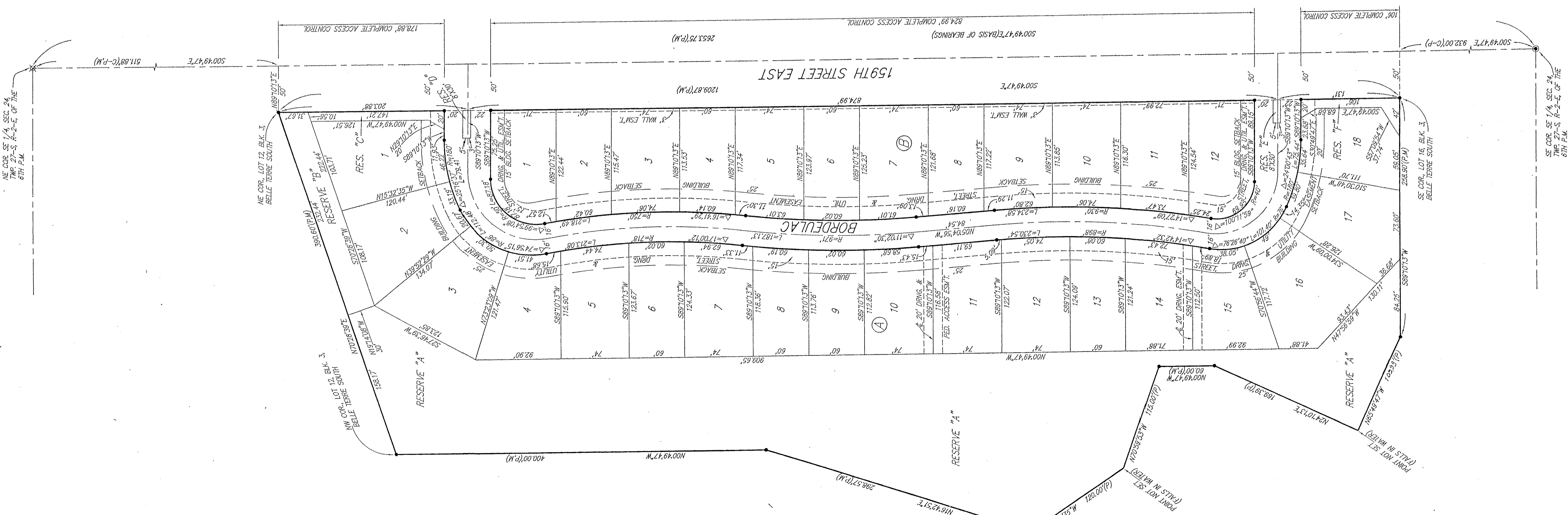


State of Kansas) SS This is to certify that this plat has been filed for record in the office of the Register of Deeds, this 15th day of July, 1999, at 3:21 o'clock P.M. and is duly recorded.

Bill Meek, Register of Deeds
Ginda Kizyre, Deputy



1811859



- = #4 REBAR W/ "BAUSHAM" CAP (FOUND)
 - = #4 REBAR W/ "BAUSHAM" CAP (SET)
 - = #5 REBAR IN TRIMBLE (FOUND)
 - = #4 REBAR (FOUND)
- (M) = MEASURED
(P) = PLATTED
(C-P) = CALCULATED PER PLATTED INFO

BENCHMARK:
U.S.G.S. STANDARD TABLE 79, NORTH AND 42° EAST OF S.E. CORNER SEC. 24, 47 U.S. ELEVATION=1520.63 MGLD.

MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES			
LOT	BLOCK	MGLD	ELEVATION
1-3	A	1.307	
4-17	A	1.306	

NOTE:
NO BUILDING PERMITS ARE TO BE ISSUED FOR ANY LOTS THAT ARE LOCATED IN THE SPECIAL FLOOD HAZARD AREA WITHIN "BELRIV ADDITION" UNLESS THE LATEST FLOOD HAZARD AREA MAP HAS BEEN OBTAINED FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THAT REMAINS IN EFFECT FOR THE PROPERTY FROM THE SPECIAL FLOOD HAZARD AREA WHICH INCLUDES THE FLOW OF THIS DRAINAGE SYSTEM SHALL BE ALLOWED AS SPECIFIED ABOVE.

NOTE:
A MASTER GRADING PLAN FOR DRAINAGE HAS BEEN DEVELOPED FOR THIS SUBMISSION AND IS ON FILE WITH THE APPROPRIATE GOVERNING BODY. ALL DRAINAGE EASEMENTS, RIGHTS-OF-WAY, OR RESERVES SHALL REMAIN AS ESTABLISHED UNLESS CHANGES OR AS INDICATED WITH THE APPROVAL OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THAT REMAINS IN EFFECT FOR THE PROPERTY FROM THE SPECIAL FLOOD HAZARD AREA WHICH INCLUDES THE FLOW OF THIS DRAINAGE SYSTEM SHALL BE ALLOWED AS SPECIFIED ABOVE.