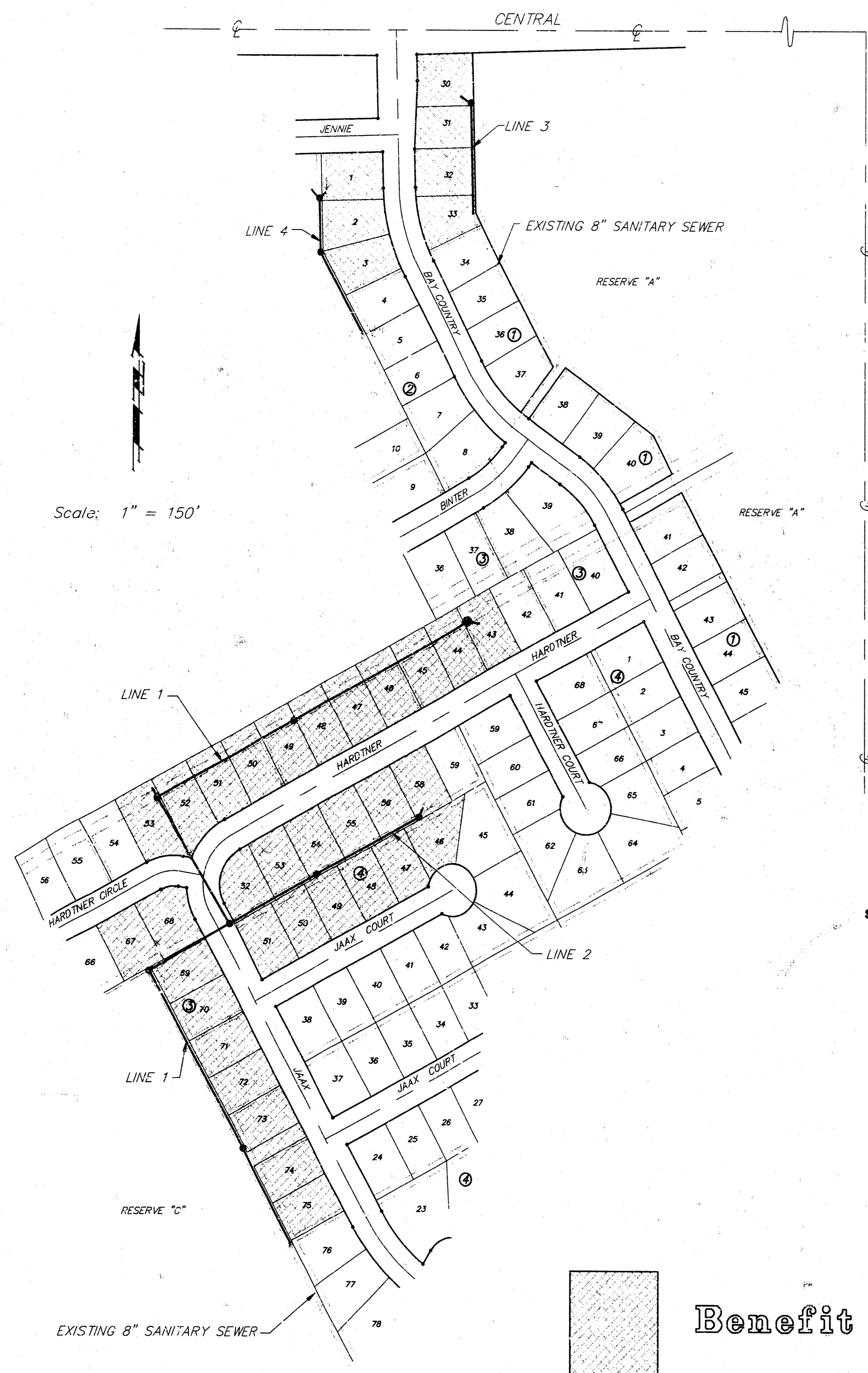


SANITARY SEWER IMPROVEMENTS
To Serve
BAY COUNTRY - PHASE V

Private Project Number
841 PPS (607861)

CITY OF WICHITA, KANSAS
Michael E. Lindebak, P.E. City Engineer



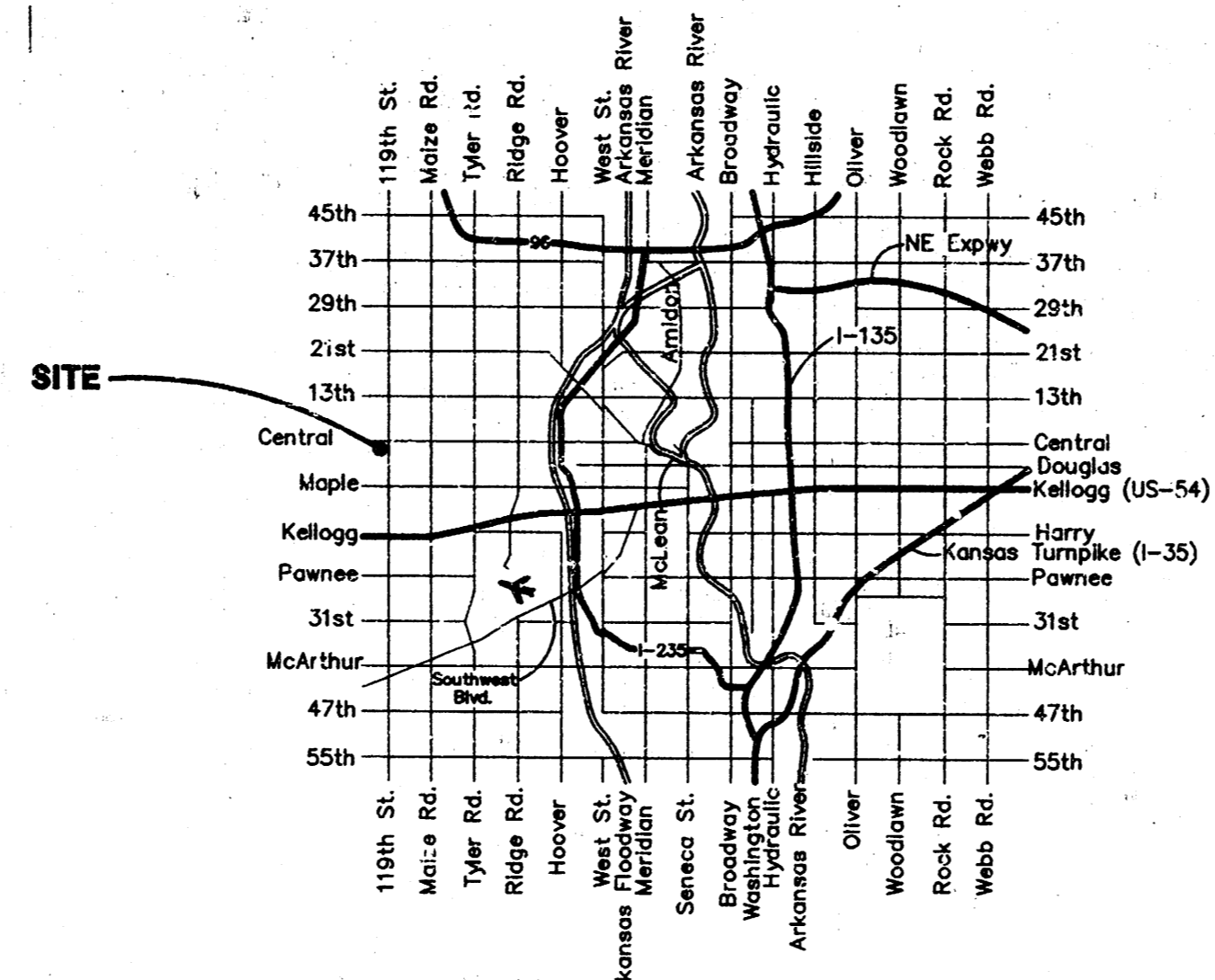
Benchmarks:

Railroad Spike in High Line Pole
Located at the Northeast Corner of
Lot 30, Block 1, Bay Country.
Elevation = 154.44 (City Datum)

"□" Cut in Top of Curb Located at
the Northwest Corner of Lot 45,
Block 1, Bay Country.
Elevation = 153.87 (City Datum)

Sheet Index:

1. Title Sheet
2. Line 1
3. Line 1 (Cont.)
4. Lines 2 & 3
5. Line 4
6. Shallow Manhole Detail Sheet
7. Standard Manhole Detail Sheet
8. Riser Detail



Vicinity Map

Benefit District

General Notes

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

Kansas One-Call	687-2470
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The Contractor must notify the following in case of an emergency:

Cablevision	262-4270
or	263-2061
K.G.E. Gas Service Company	383-8650
Kansas Gas & Electric Company	383-8600
Peoples Natural Gas Company	942-7600
Southwestern Bell Telephone Company	1-571-2611
City of Wichita Water Department	268-4908
City of Wichita Sewer Maintenance	268-4071
2. Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction, unless the plans specifically call for their adjustment by the Contractor. Existing utilities and their locations, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
3. 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 proposed new construction shall be saved and protected from damage.
4. 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 work.
5. 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.
6. All areas disturbed by construction operations shall be seeded with rye grass at a rate of 6 lbs. per 1000 sq. feet. Contractor to prepare ground to city specifications.

**APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA**

Sanitary Sewers VRH 11/8/96

Storm Sewers _____

Driveway Approaches _____

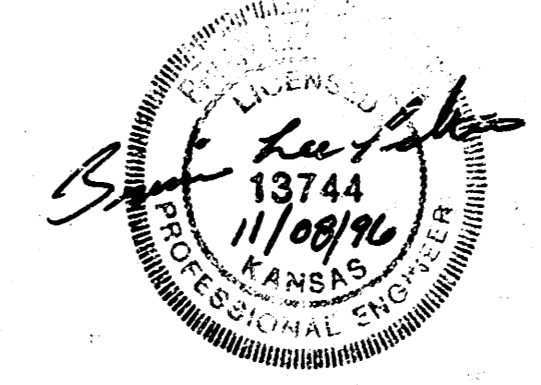
Water Mains _____

Paving _____

NOTE TO CONTRACTORS

Inspection and testing for this project is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced 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).

Booked
N-253
RDL
5, 11/15/97



INSPECTOR: LYLE POWERS, BAUGHMAN CO.
ASBUILT: 3/4/97 JFB BAUGHMAN CO.

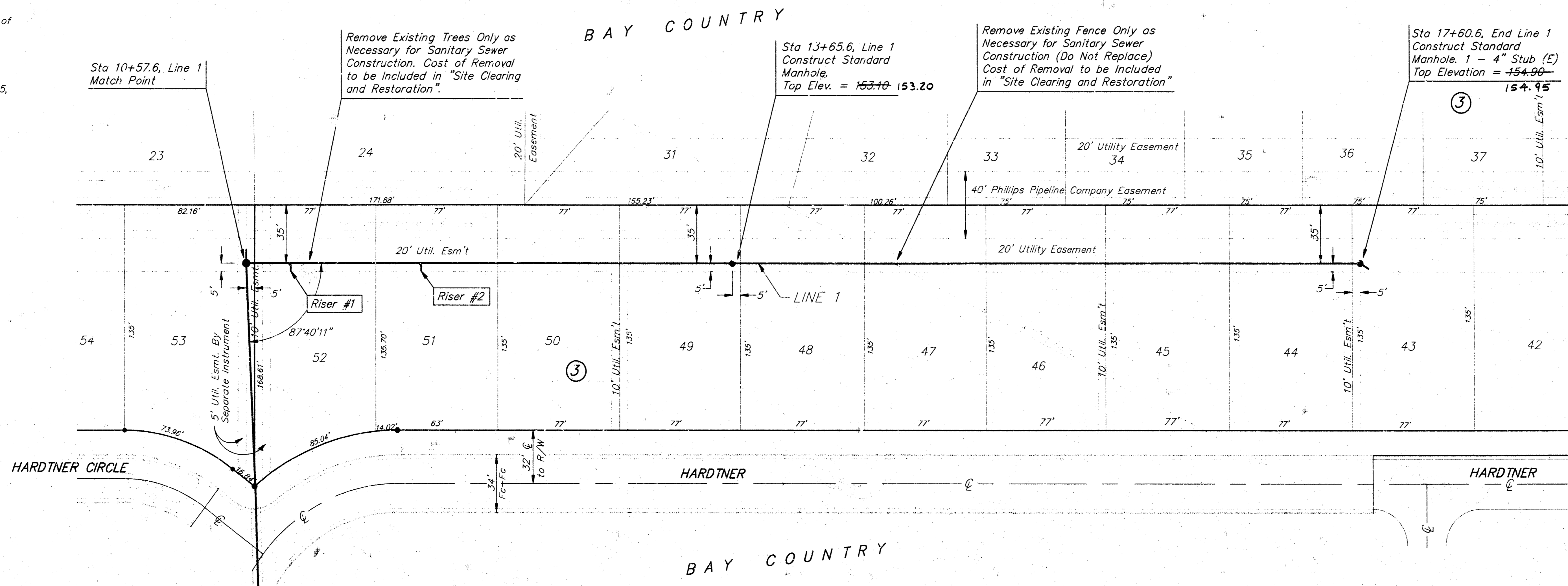
Benchmarks:

Railroad Spike in High Line Pole Located at the Northeast Corner of Lot 30, Block 1, Bay Country.

Elevation = 154.44 (City Datum)

"□" Cut in Top of Curb Located at the Northwest Corner of Lot 45, Block 1, Bay Country.

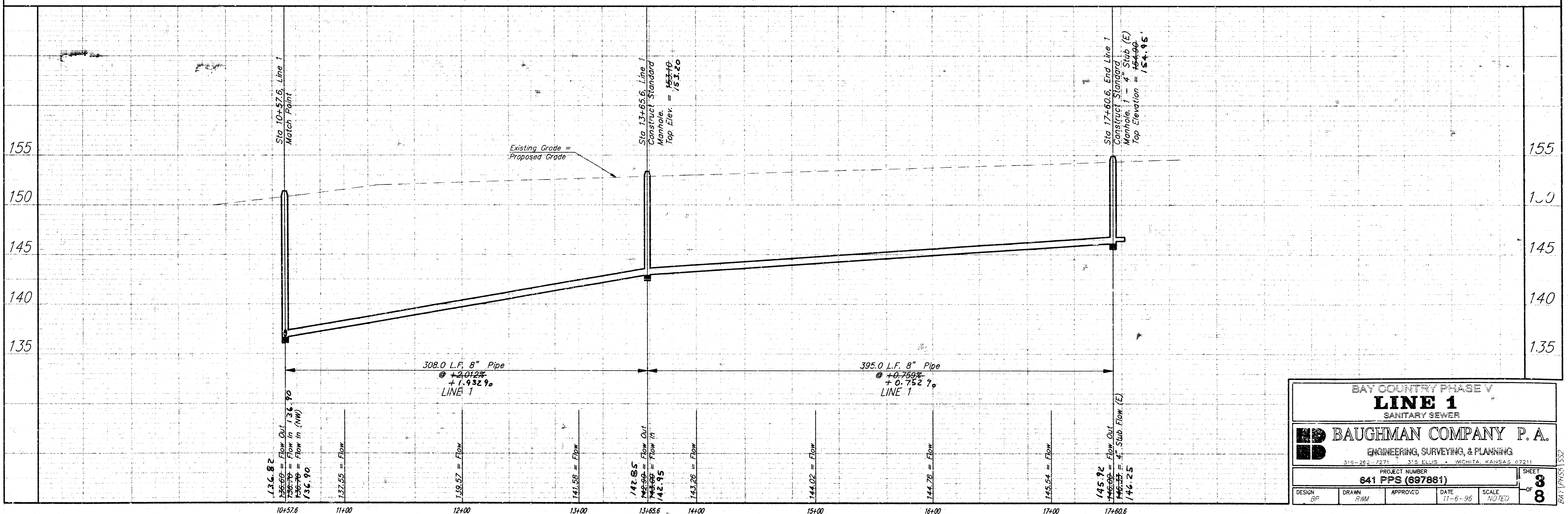
Elevation = 153.87 (City Datum)



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

RISER LOCATION TABLE

NUMBER	LINE NO.	STATION	LOT	DIRECTION	L.F. 4" RISER	TOP ELEV.
1	1	10+57.6	52	RIGHT	10	147.3
2	1	11+67	51	RIGHT	9.5	148.4

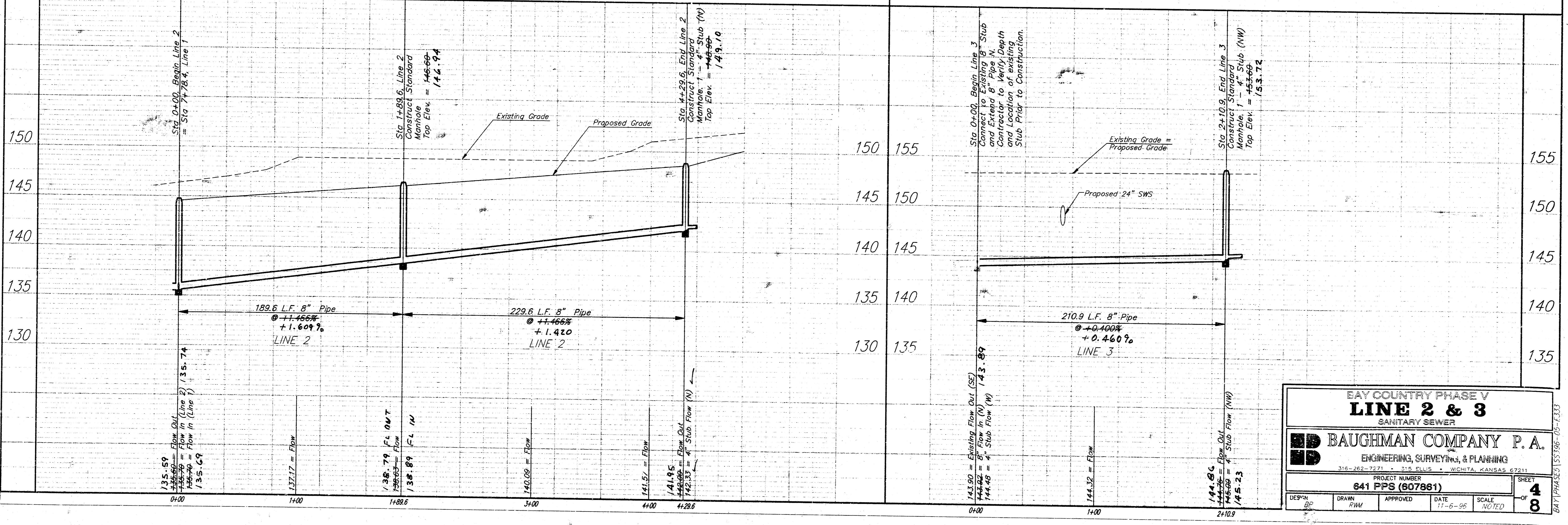
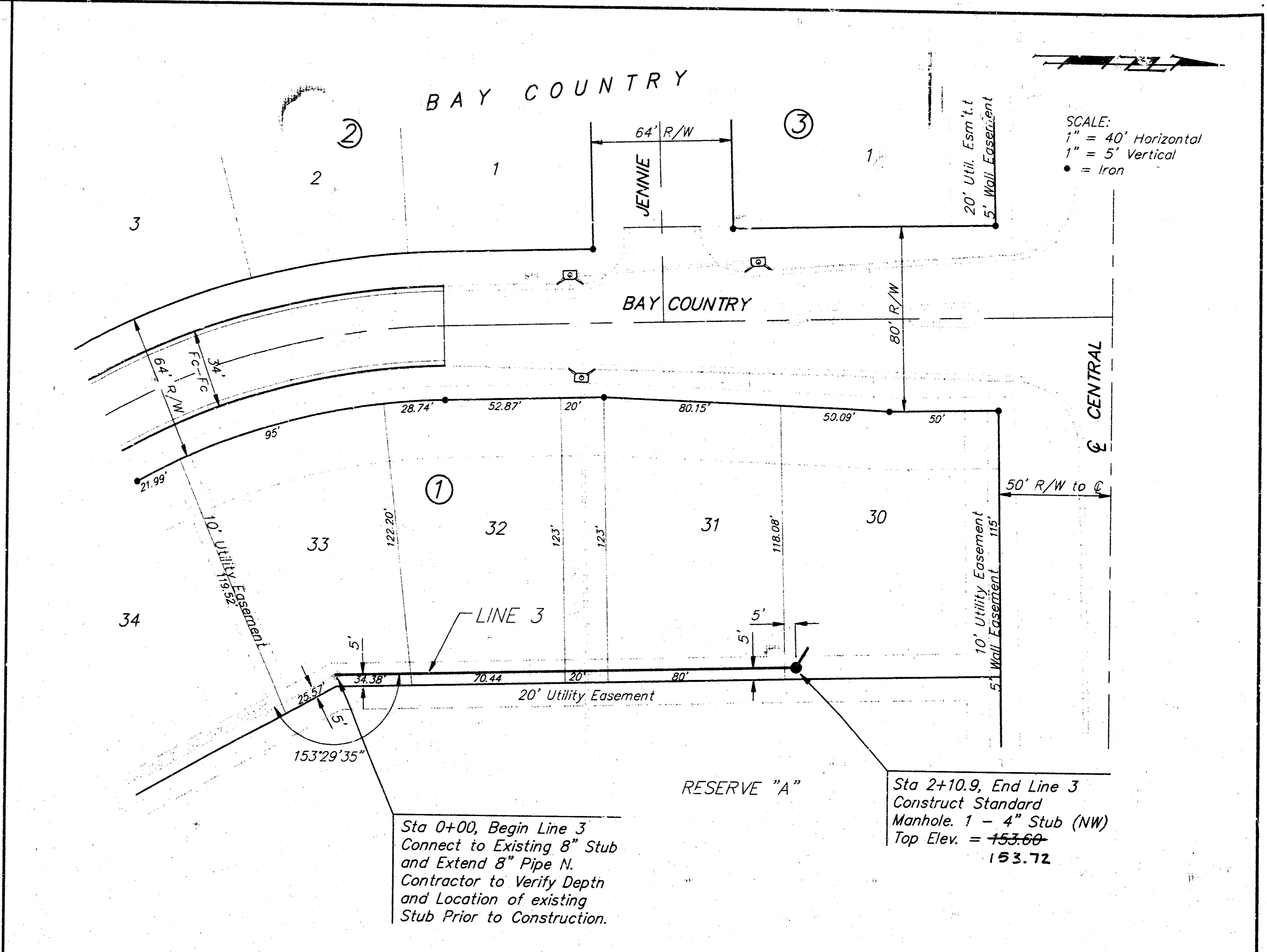
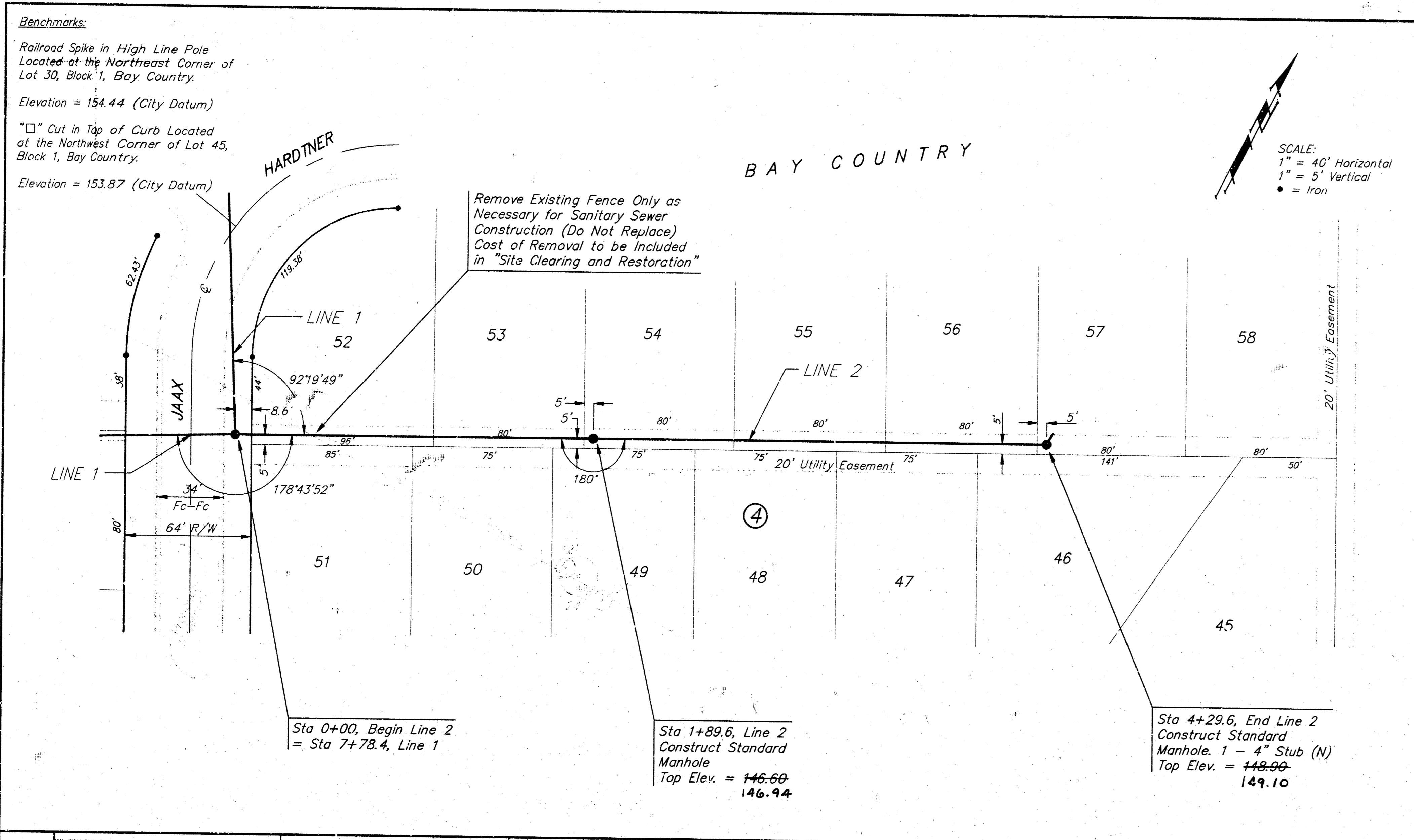


BAY COUNTRY PHASE V
LINE 1
SANITARY SEWER

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
319-252-7271 • 315 E. 15TH • WICHITA, KANSAS 67211

PROJECT NUMBER: **641 FPS (697861)** SHEET: **8**

DESIGN: **ED** DRAWN: **PHM** APPROVED: _____ DATE: **11-5-96** SCALE: **NOTED**



BAY COUNTRY PHASE V
LINE 2 & 3
 SANITARY SEWER

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

PROJECT NUMBER: 641 PPS (607861) SHEET: 4 OF 8

DESIGN: RWM APPROVED: DATE: 11-6-96 SCALE: NOTED

Benchmarks:

Railroad Spike in High Line Pole Located at the Northeast Corner of Lot 30, Block 1, Bay Country.

Elevation = 154.44 (City Datum)

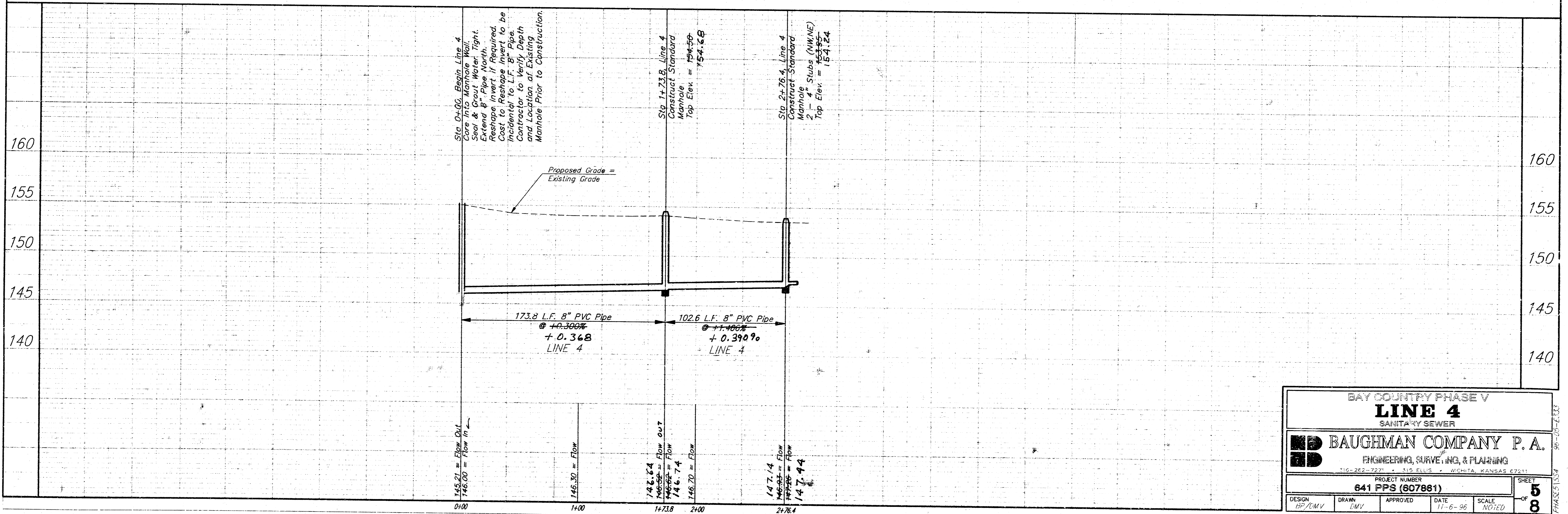
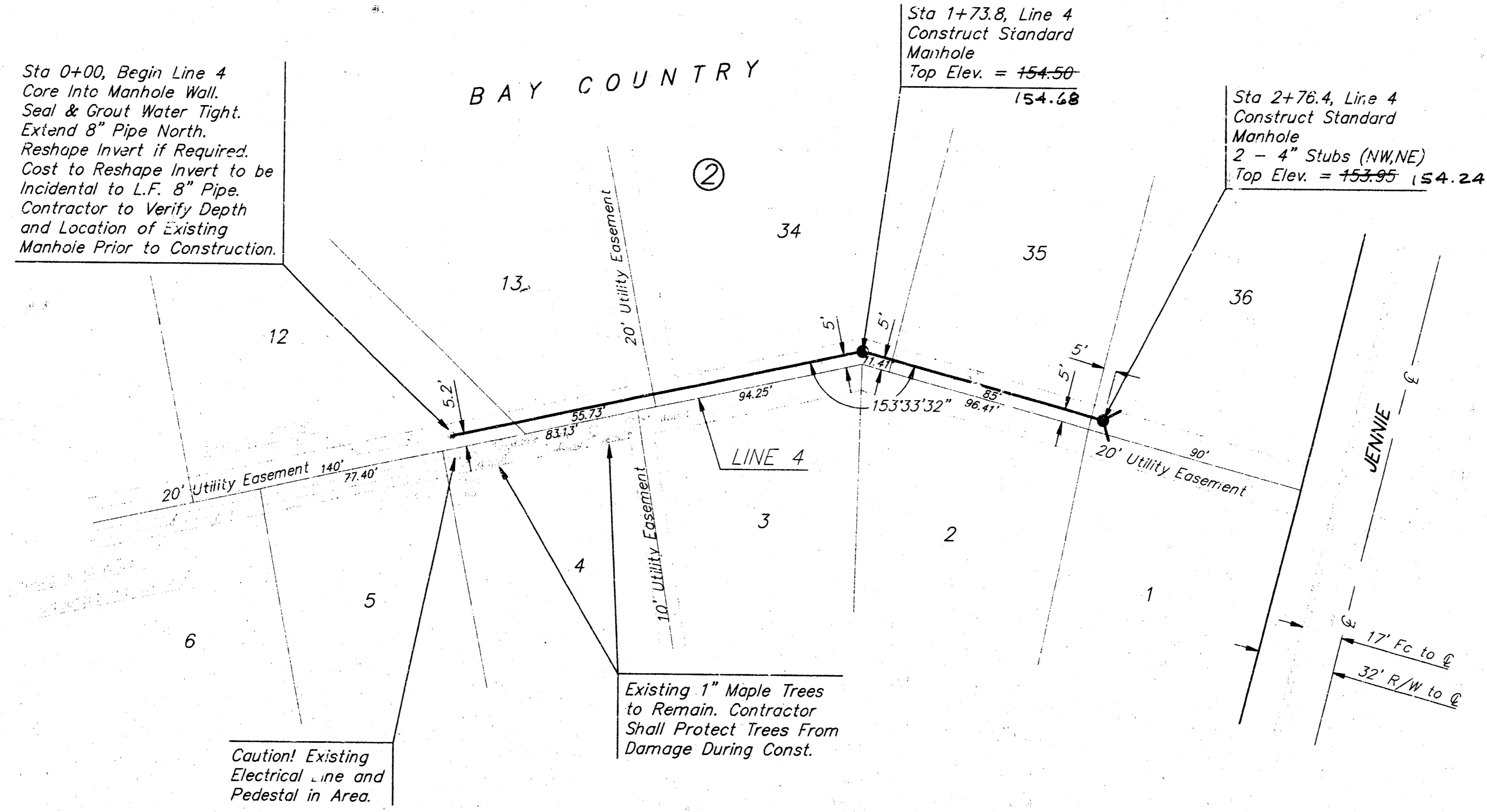
"□" Cut in Top of Curb Located at the Northwest Corner of Lot 45, Block 1, Bay Country.

Elevation = 153.87 (City Datum)

Sta 0+00, Begin Line 4
Core Into Manhole Wall.
Seal & Grout Water Tight.
Extend 8" Pipe North.
Reshape Invert if Required.
Cost to Reshape Invert to be
Incidental to L.F. 8" Pipe.
Contractor to Verify Depth
and Location of Existing
Manhole Prior to Construction.

Sta 1+73.8, Line 4
Construct Standard
Manhole
Top Elev. = 154.68

Sta 2+76.4, Line 4
Construct Standard
Manhole
2 - 4" Stubs (NW,NE)
Top Elev. = 153.95 (54.24)



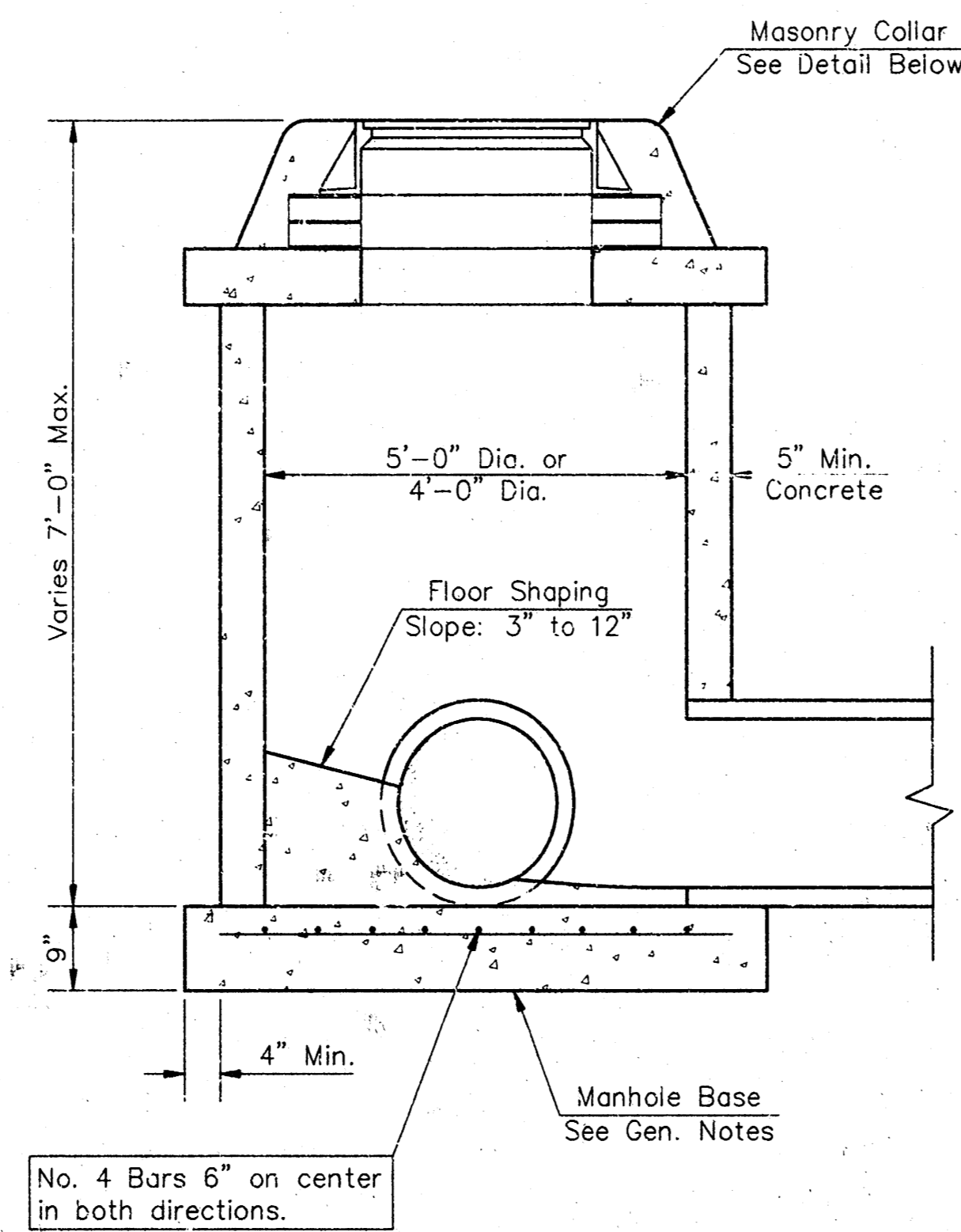
BAY COUNTRY PHASE V
LINE 4
SANITARY SEWER

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
715-262-3221 • 115 E. ILLUS • WICHITA, KANSAS 67211

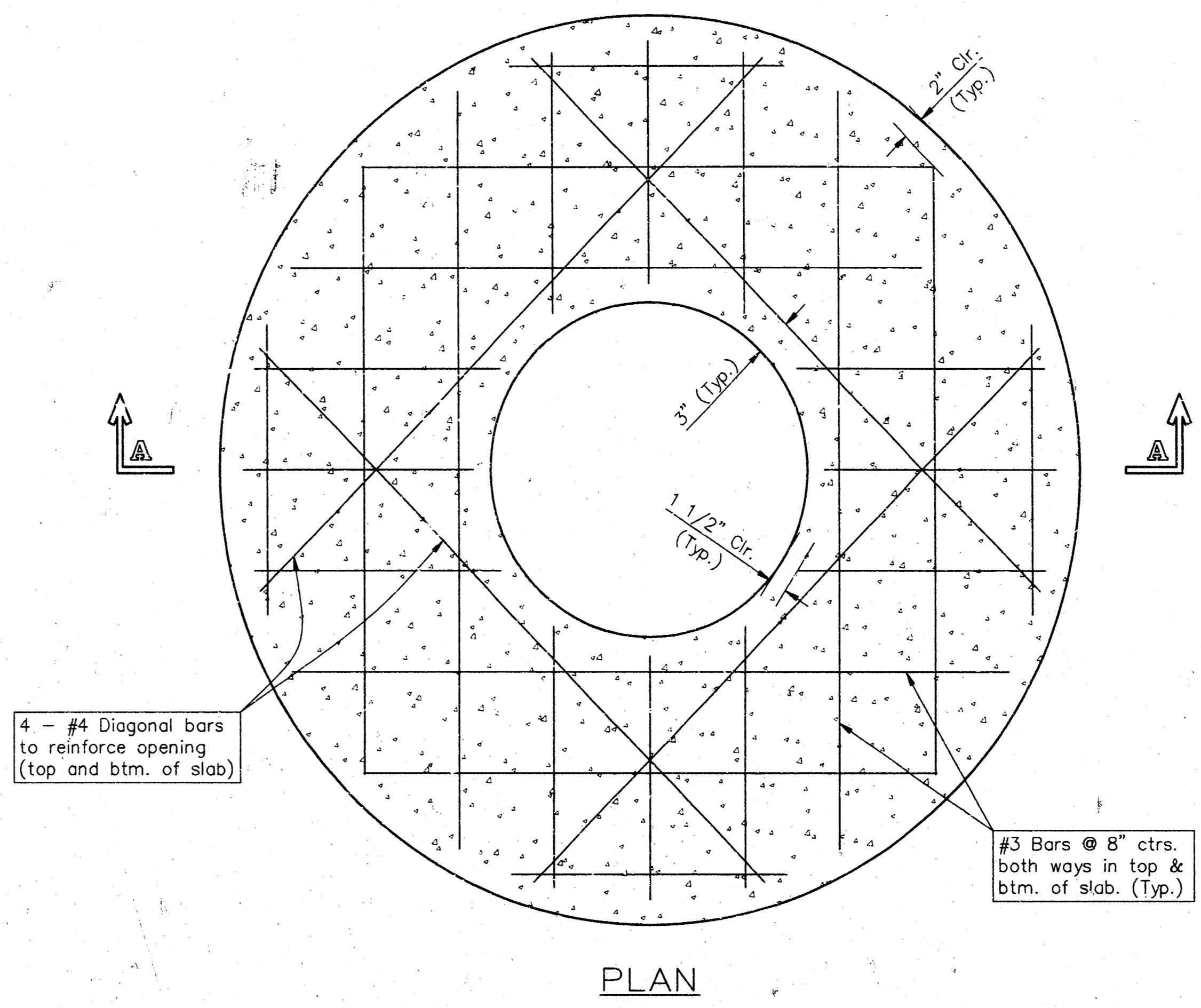
PROJECT NUMBER
641 PPS (607861)

DESIGN BP/DMV	DRAWN DMV	APPROVED	DATE 11-6-96	SCALE NOTED	SHEET OF 5 OF 8
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PHASE 51333

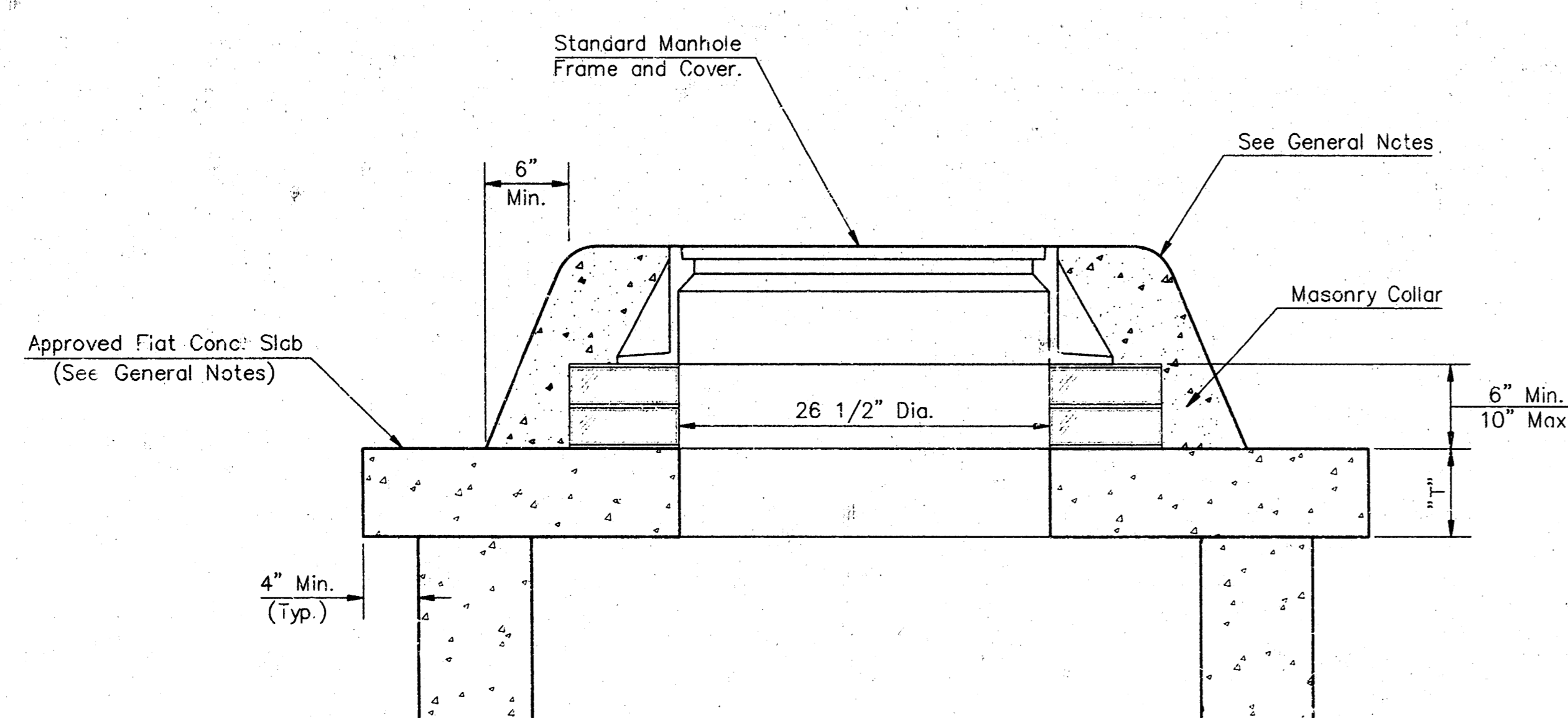


SHALLOW TYPE MANHOLE

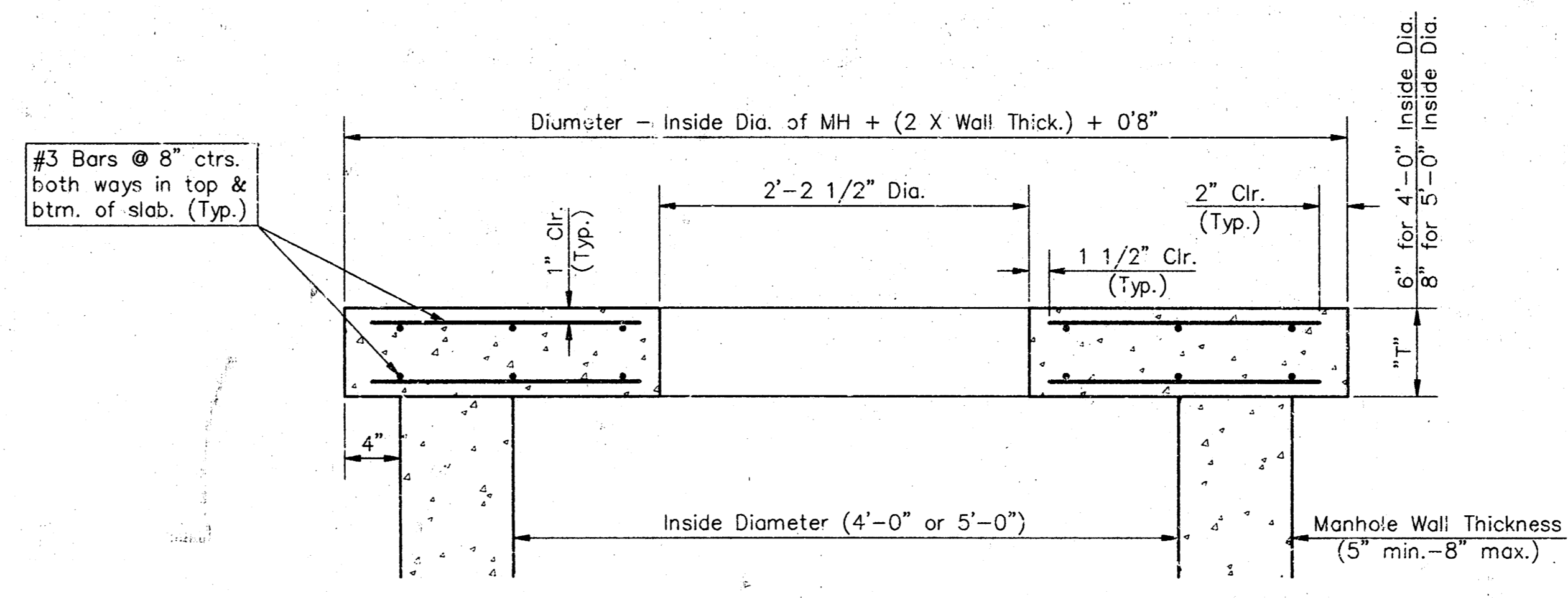


GENERAL NOTES

- 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 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.
- 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 reinforcing steel shall be included in the unit price bid for the 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. 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.
- 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 drawings.
- The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.
- Standard shallow manholes 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.
- All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.



MASONRY COLLAR DETAIL



FLAT CONCRETE SLAB DETAILS

SECTION A-A

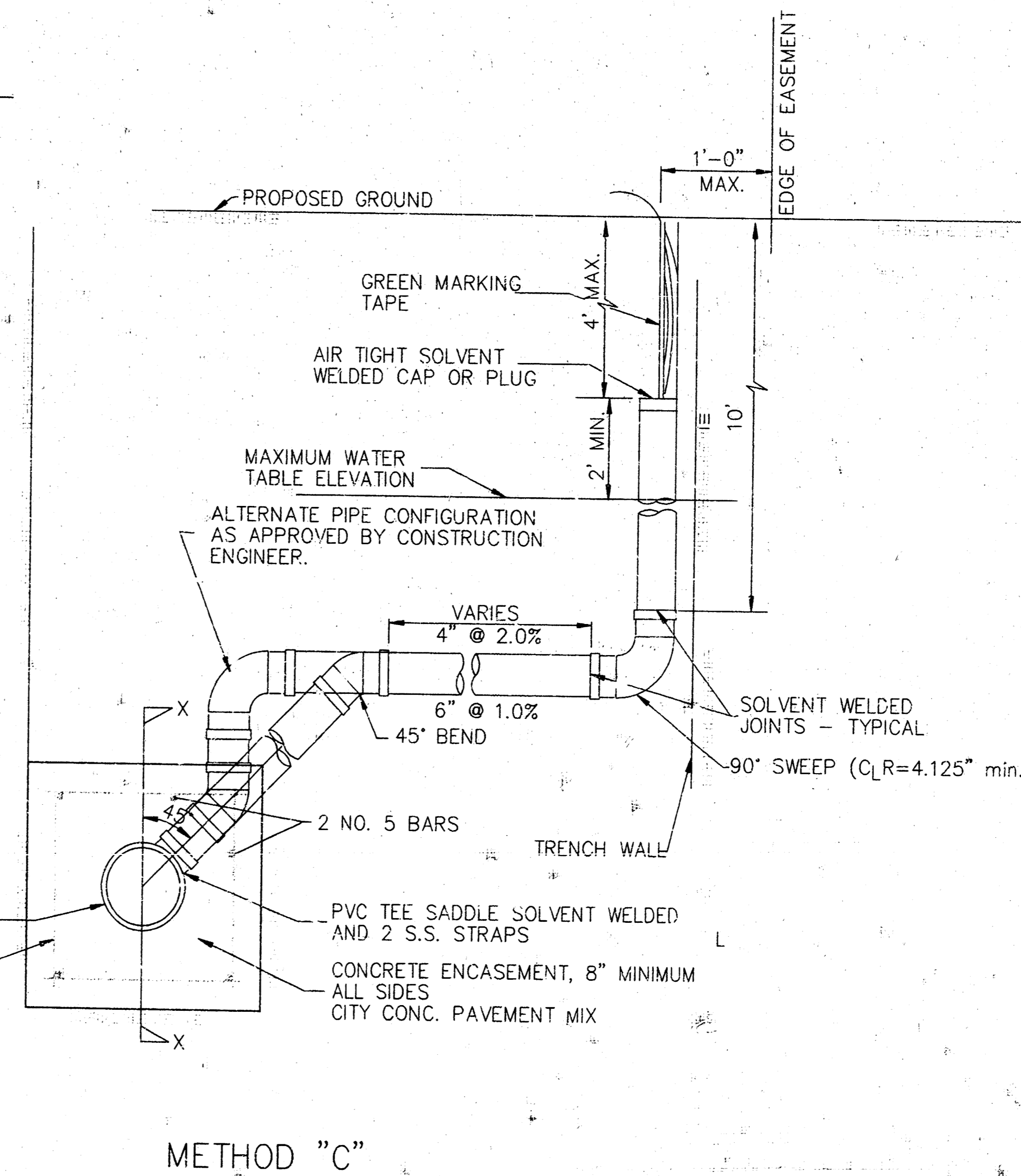
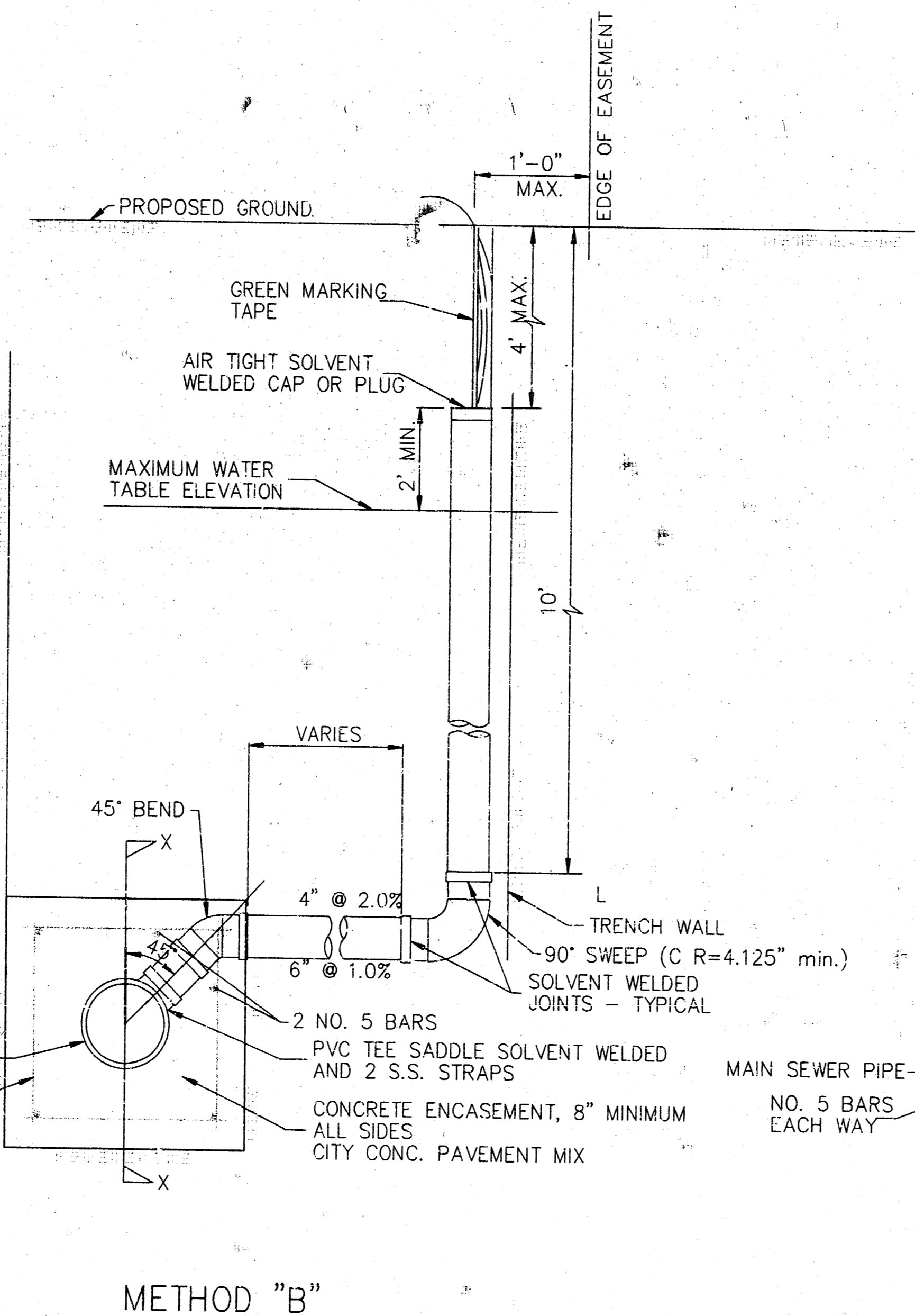
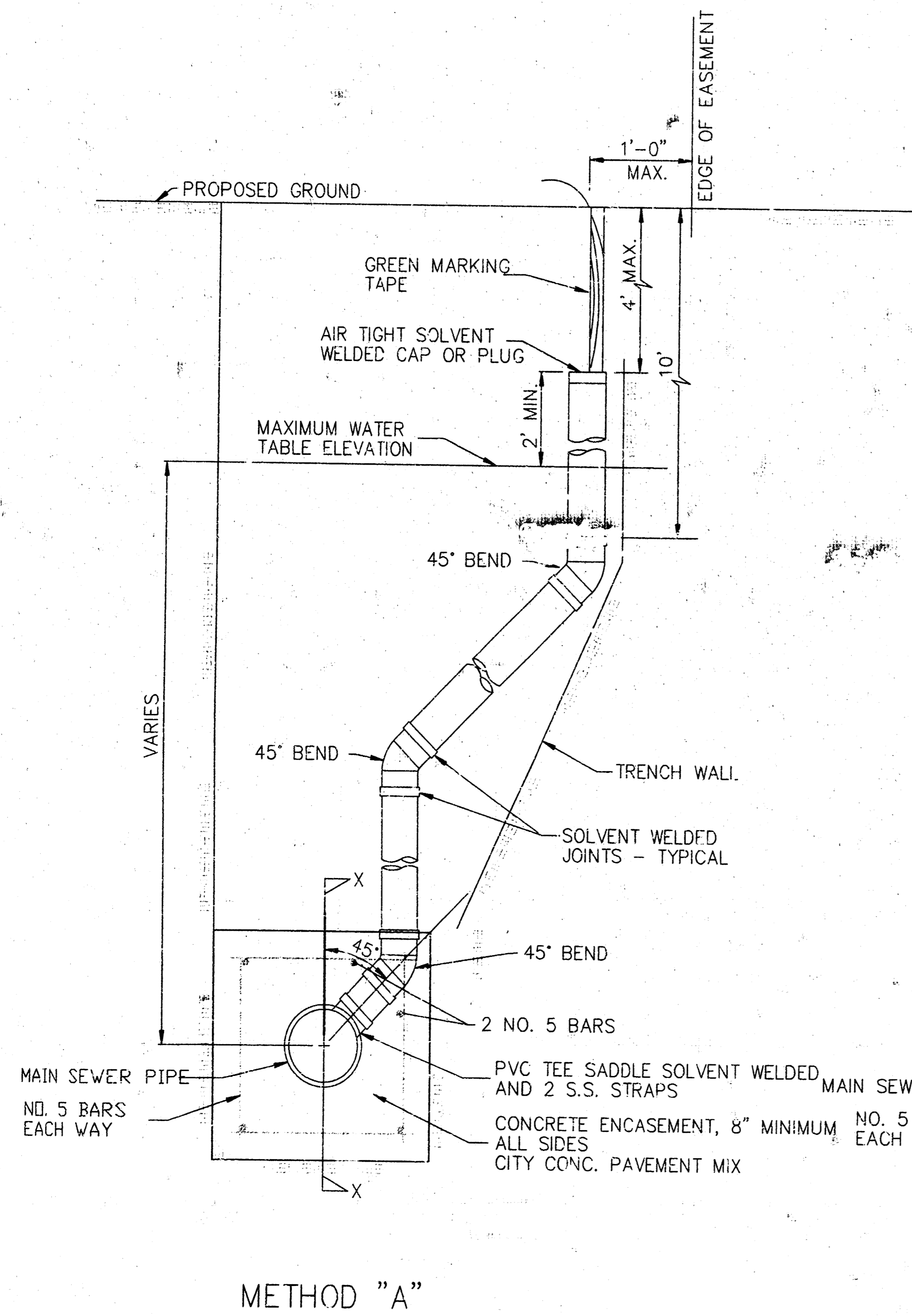
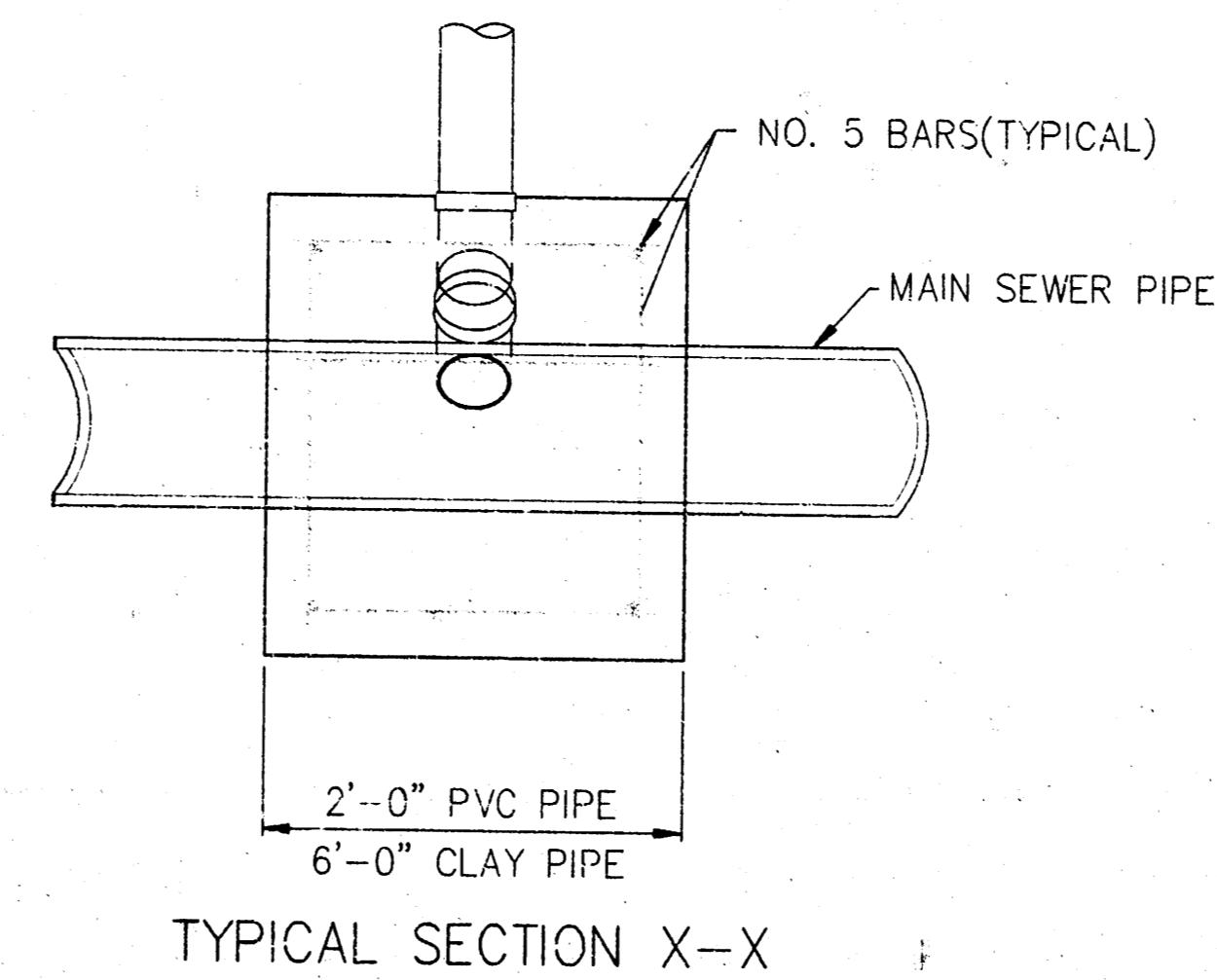
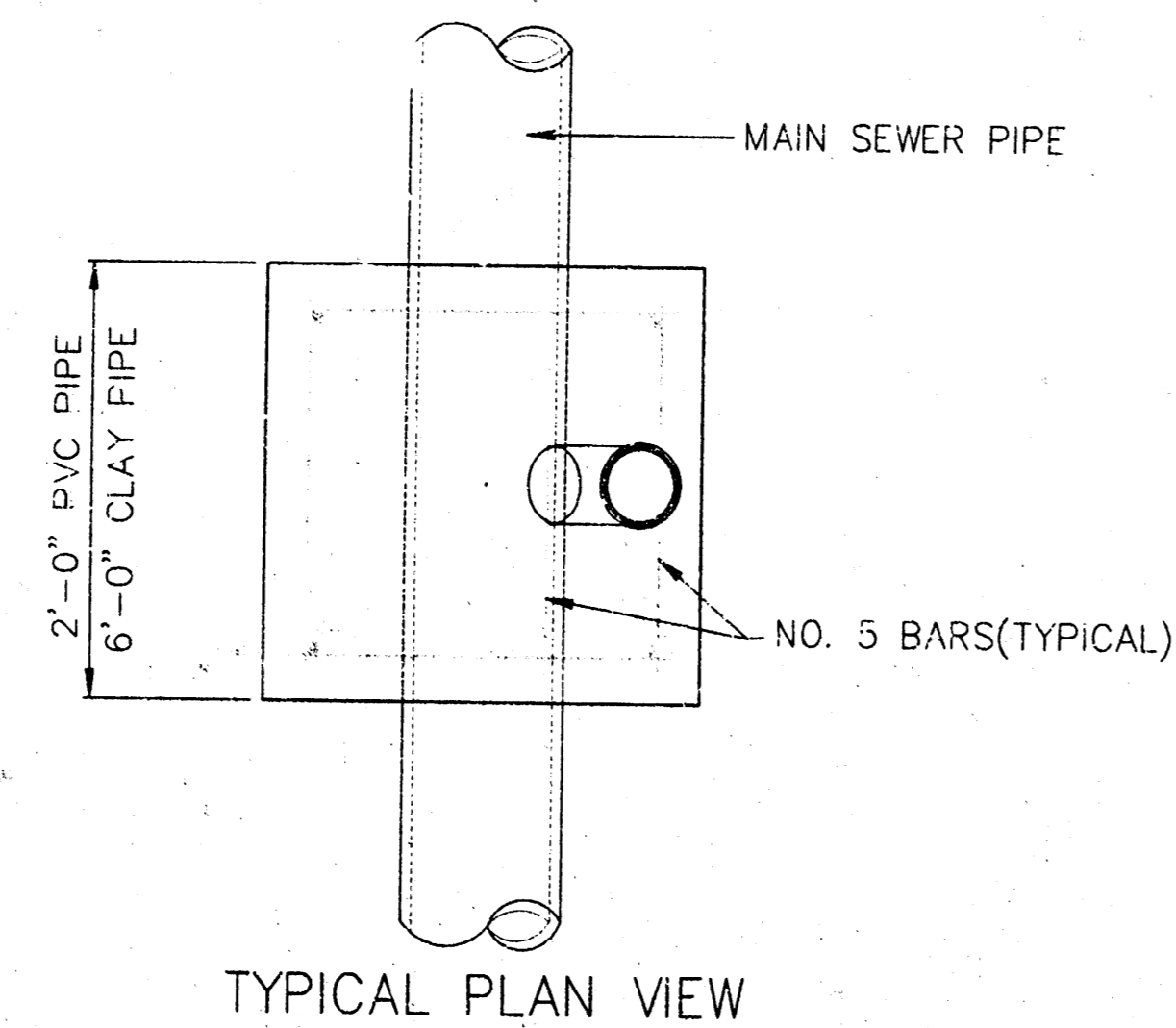
Type "F" & Type "C"
Shallow Manhole
Details

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

PROJECT NUMBER
641 PPS (607861)

DESIGN C.O.W.	DRAWN Staff	APPROVED	DATE 3/96	SCALE None	SHEET 6 OF 8
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VERTICAL RISER DETAILS
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA, KANSAS
OCTOBER 1992



NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

GENERAL NOTES

- RISERS.** Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
- PIPE STUBS.** Pipe stubs shall be installed in manholes where connection as determined by the Construction Engineer. The vertical distance between the flowing riser pipe and the manhole stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.
- SIZING.** Pipe stubs and risers shall be sized according to the plan and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4- or 6- inch diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.
- RISER OR STUB MATERIAL.** Risers and stubs shall be constructed of SDR 35 PVC Pipe or Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. All pipe joints shall be solvent welded.
- REINFORCED CONCRETE ENCASEMENT.** Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.
- BEDDING.** Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
- SUPPORT OF RISERS.** Sanitary sewer riser pipes shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.
- PLUGGING.** The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
- TOP OF THE RISER PIPE.** The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
- MARKING.** Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.
- LOCATION MEASURES.** The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.
- RISER LOCATION.** The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
- PAYMENT.** "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.
"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work, including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers".

City of Wichita Standard
Riser Details

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

PROJECT NUMBER 641 FPS (67861)					SHEET 8
DESIGN	DRAWN	APPROVED	DATE	SCALE	OF 8