

**LOCATION MAP**

NOT TO SCALE

**AS-BUILT PLANS FOR  
"ADJUSTED LOT 7 OF THE BOUNDARY  
ADJUSTMENT OF ADJUSTED LOT 6 AND LOT 7  
OF LIBERTY INDUSTRIAL PARK"**

**A TRACT OF LAND BEING ALL OF ADJUSTED LOT 6 AND LOT 7 OF "RESUBDIVISION PLAT OF LOT 6 OF LIBERTY INDUSTRIAL PARK" PLAT BOOK 44, PAGES 349-350 WITHIN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 47 NORTH, RANGE 2 EAST OF THE FIFTH PRINCIPAL MERIDIAN, CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI**

**AS-BUILT LEGEND**

- AS-BUILT STORM MANHOLE
- AS-BUILT CURB OR GRATE INLET
- ▬ AS-BUILT STORM FLORED END
- ⊕ AS-BUILT FIRE HYDRANT
- ⊕ AS-BUILT WATER VALVE
- ⊕ AS-BUILT FIRE HOSE CONNECTION
- ⊕ AS-BUILT CLEANOUT

**STANDARD SYMBOLS & ABBREVIATIONS**

- TREE OR BUSH
- LIGHT STANDARD
- SANITARY SEWER & MANHOLE
- STORM SEWER & INLET
- MAILBOX
- ELECTRIC LINE
- GAS LINE
- WATER LINE
- TELEPHONE LINE
- CABLE TV LINE
- OVERHEAD WIRE
- UTILITY POLE
- UTILITY POLE W/ DOWN GUY
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- GAS VALVE
- ROAD SIGN
- TELEPHONE PEDESTAL
- FENCE

**AS-BUILT PLANS FOR  
"ADJUSTED LOT 7 OF THE  
BOUNDARY ADJUSTMENT OF  
ADJUSTED LOT 6 AND LOT 7  
OF LIBERTY INDUSTRIAL PARK"**

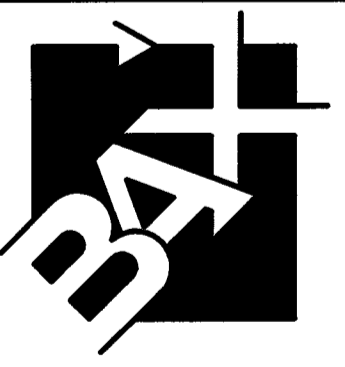
**PREPARED FOR:  
BILL DAVIS  
2209 DROSITE ROAD  
ST. CHARLES, MO 63301  
(636) 949-0680**

**DISCLAIMER OF RESPONSIBILITY**  
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments that are or may be included in or used for any part or parts of the architectural or engineering project or survey.

**Box Engineering Company, Inc.**  
Missouri State Certificate of Authority Engineering #000655  
Missouri State Certificate of Authority Surveying #000144

**REVISIONS**

NO.	DATE	DESCRIPTION



**ENGINEERING  
PLANNING  
SURVEYING**

221 Point West Blvd.  
St. Charles, MO 63301  
636-928-5552  
FAX 928-1718

06/08/2017  
DATE  
00-11060D  
PROJECT NUMBER  
1 OF 3  
SHEET OF  
11060ASBL07.dwg  
FILE NAME  
JNW  
DRAWN  
ALJ MEC  
DESIGNED CHECKED

**PRINCIPLES & STANDARDS:**

1. All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 slope (33 %). Steeper grades may be approved by the designated official if the excavation is through rock or the excavation or the fill is adequately protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the appropriate section(s) of the adopted BOCA Codes and must be approved by the Building Department. Permanent safety guards will be constructed in accordance with the appropriate section(s) of the adopted BOCA Codes.
2. Sediment and erosion control plans for sites that exceed 20,000 square feet of grading shall provide for sediment or debris basins, silt traps or filters, staked straw bales or other approved measures to remove sediment from run-off waters. The design to be approved by the Designated Official. Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
3. Where natural vegetation is removed during grading, vegetation shall be reestablished in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible during the next seeding period after grading has been completed.
4. When grading operations are completed or suspended for more than 14 days permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the City Engineer's recommendations. All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.
5. Provisions shall be made to accommodate the increased runoff caused by changed soils and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of 2 fps (feet per second) or less. Open channels with velocities more than 2 fps and less than 5 fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock rip rap or concrete or other suitable materials as approved by the City Engineer. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above 5 fps.
6. The adjoining ground to development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequence of erosion. Run-off water from developed areas (parking lots, paved sites and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted with the approval of the City Engineer.
7. Development along natural watercourses shall have residential lot lines, commercial or industrial improvements, parking areas or driveways set back a minimum of 25 feet from the top of the existing stream bank. The watercourse shall be maintained and made the responsibility of the subdivision trustees or in the case of a site plan by the property owner. Permanent vegetation should be left intact. Variances will include designed stream bank erosion control measures and shall be approved by the City Engineer, FEMA and U.S. Army Corps of Engineers guidelines shall be followed where applicable regarding site development areas designated as flood plains and wetlands.
8. All lots shall be seeded and mulched at the minimum rates defined in Appendix A or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

**VEGETATIVE ESTABLISHMENT  
For Urban Development Sites  
APPENDIX A**

- Seeding Rates:
- Permanent:  
Tall Fescue – 30 lbs./ac.  
Smooth Brome – 20 lbs./ac.  
Combined Fescue @ 15 lbs./ac. and Brome @ 10 lbs./ac.
- Temporary:  
Wheat or Rye – 150 lbs./ac. (3.5 lbs. per square foot)  
Oats – 120 lbs./ac. (2.75 lbs. per square foot)
- Seeding Periods:  
Fescue or Brome – March 1 to June 1  
Wheat or Rye – August 1 to October 1  
Oats – March 15 to November 1
- Mulch Rates:  
100 lbs. per 1,000 sq. feet (4,356 lbs. per acre)
- Fertilizer Rates:  
Nitrogen 30 lbs./ac.  
Phosphate 30 lbs./ac.  
Potassium 30 lbs./ac.  
Lime 600 lbs./ac. ENM\*
- \* ENM = effective neutralizing material as per State evaluation of quarried rock.

**GRADING QUANTITIES:**

13,763 C.Y. CUT	(INCLUDES SUBGRADES)
12,994 C.Y. FILL	(INCLUDES 15% SHRINKAGE)
769 C.Y. EXCESS	

THE ABOVE GRADING QUANTITY IS APPROXIMATE ONLY, NOT FOR BIDDING PURPOSES. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO CONSTRUCTION.

**CALL BEFORE  
YOU DIG!  
1-800-DIG-RITE**

**O'FALLON NOTES**

1. Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
2. All filled places under proposed storm and sanitary sewer, proposed roads, and/or paved areas shall be compacted to 90% of the maximum density as determined by the Modified AASHTO T-180 Compaction Test, or 95% of maximum density as determined by the standard Proctor Test AASHTO T-99. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations. All filled places in proposed roads shall be compacted from the bottom up. All test shall be verified by a soil engineer concurrent with grading and backfilling operations. Ensure the moisture content of the soil in the fill areas is to correspond to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to The City of O'Fallon prior to the placement of fill. Proof rolling may be required to verify soil stability at the discretion of The City of O'Fallon.
3. No area shall be cleared without the permission of the Project Engineer.
4. The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
5. All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.
6. All construction and materials shall conform to the current construction standards of the City of O'Fallon.
7. Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
8. No slopes shall exceed 3(Horizontal) : 1(Verticle).

9. The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MODOOT. The Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon and/or MODOOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MODOOT.

10. Erosion control systems shall not be limited to what is shown on the plan. Whatever means necessary shall be taken to prevent siltation and erosion from entering natural streams and adjacent roadways, properties and ditches.

11. All building mounted lights shall be pointed downward and fully screened to prevent light from spilling over onto adjacent properties.
12. All ground and roof hvac mechanical units to be screened from view.
13. The Developer must supply City Construction Inspectors with soil reports prior to or during site soil testing.

14. All paving to be in accordance with St. Charles County standards and specifications except as modified by the City of O'Fallon ordinances.

15. All sidewalks, curb ramps, ramps and accessible parking spaces shall be constructed in accordance with the current approved "Americans with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer. Ensure at least one 8' wide handicap access aisle is provided and curb ramps do not project into handicap access aisles.

16. Brick shall not be used in the construction of storm or sanitary sewer structures.
17. The Contractor shall ensure all storm and sanitary sewer joint shall be gasketed O-ring Type.

18. Lighting values will be reviewed on the site prior to the final occupancy inspection. Corrections will need to be made if not in compliance with City standards.

19. All proposed fencing requires a separate permit through the Planning Division.
20. All sign locations and sizes must be approved separately through the Planning Division.

21. All sign post and backs and bracket arms shall be painted black using Carboline Rustbond Penetrating Sealer SG and Carboline 133 HB point ( or equivalent as approved by the City of O'Fallon and MoDOT). Sign designating street names shall be on the opposite side of the street from traffic control signs.

22. All new utility line shall be located underground.

23. All erosion control systems shall be inspected and necessary corrections shall be made within 24 hours of any rainstorm resulting in one-half inch of rain or more.

24. All graded areas that are to remain bare for over 2 weeks shall be seeded and mulched per DNR requirements.
25. Rip-rap shown at flared ends will be evaluated in the field after installation for effectiveness and field modified if necessary to reduce erosion on and off-site.

26. Marking to be provided on storm sewer inlets. The City will allow the following markers and adhesive procedures only as shown in the table below. "Peel and Stick" adhesive pads will not be allowed.

**O'FALLON NOTES (CONTINUED)**

Manufacturer	Size	Adhesive	Style	Message (Part #)	Website
ACP International	3 7/8"	Epoxy	Crystal Cap	No Dumping Drains To Waterways (SD-W-CC)	www.acpinternational.com
DAS Manufacturing, Inc.	4"	Epoxy	Standard	No Dumping Drains To Stream (#SDS)	www.dasmanufacturing.com

27. Developer must supply City Construction Inspectors with soil reports prior to or during site soil testing. The soil report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:
  1. Maximum dry density
  2. Optimum moisture content
  3. Maximum and minimum allowable moisture content
  4. Curve must be plotted to show density from a minimum of 90% Compaction and above as determined by the Modified AASHTO T-180 Compaction Test\* (A.S.T.M.-D-1157) or from a minimum of 95% as determined by the "Standard Proctor Test ASHTO T-99, Method C" (A.S.T.M.-D-698). Proctor type must be designated on document.
  5. Curve must have at least 5 density points with moisture content and sample locations listed on document.
  6. Specific gravity.
  7. Natural moisture content.
  8. Liquid limit.
  9. Plastic limit.
 Be advised that if this information is not provided to the City's Construction Inspector the City will not allow grading or construction activities to proceed on any project site.

28. Trees, organic debris, rubble, foundations and other deleterious material shall be removed for the site and disposed in compliance with all applicable laws and regulations. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only permit from the local fire district. If a burn pit is proposed the location and mitigation shall be shown on the grading plan and documented by the soils engineer.

29. HDPE pipe is to be N-12WT or equal and to meet ASTM F1417 water tight field test.

30. If there are any physical changes to MoDOT's right of way, such as grading or entrance modification, MoDOT requests the opportunity to review the plans, there may be improvements to the roadway required to support the proposed development within MoDOT's Access Management Guidelines.

31. Connections at all sanitary or storm structures with pipes 24" or smaller to be made with A-lock joint or equal.

32. Traffic control is to be per MoDOT or MUTCD whichever is most stringent.

**LANDSCAPE LEGEND**

- QTY. 5 INDICATES PROPOSED HARDWOOD TREE (ash, oaks, maples, birches, sweet gum)
  - QTY. 20 INDICATES PROPOSED EVERGREEN SHRUB (mugho pines, yews, junipers, hollies, boxwoods)
- LANDSCAPING AS DEPICTED IS SUBJECT TO FINAL DESIGN BY A QUALIFIED LANDSCAPE DESIGNER

**VERTICAL CONTROL STATEMENT**

REFERENCE BENCHMARK VERT DATUM NAVD88 – RM F149 – ELEVATION 542.80  
DESCRIPTION: A STANDARD DISK, STAMPED "F 149 1935" AND SET IN THE TOP OF A CONCRETE POST PROJECTING 6 INCHES ABOVE GROUND AT O'FALLON ST, CHARLES COUNTY, ON THE WABASH RAILROAD, IN THE SOUTHWEST CORNER OF THE O'FALLON CITY HALL PROPERTY (FORMERLY ST. MARY INSTITUTE YARD), 40' EAST OF MAIN STREET (HIGHWAY M) AND 45' NORTH OF THE CENTERLINE OF MAIN RAILROAD TRACK.

**SITE BENCHMARK**

SITE BENCHMARK: CUT CROSS – ELEVATION=550.56 – LOCATED AT THE NORTHWEST CORNER OF ADJUSTED LOT 7 OF THE BOUNDARY ADJUSTMENT OF ADJUSTED LOT 6 AND LOT 7 OF LIBERTY INDUSTRIAL PARK PER PLAT BOOK 47 PAGES 188-189 OF THE ST. CHARLES COUNTY RECORDS.

**HORIZONTAL CONTROL STATEMENT**

THE HORIZONTAL STATE PLANE GRID COORDINATES OF THE MISSOURI COORDINATE SYSTEM OF 1983, EAST ZONE GRID NORTH, NAD83 (NRS2007) ADJUSTMENT VALUES WERE ADOPTED FOR THIS SURVEY. THE COORDINATES WERE ESTABLISHED AND VERIFIED BY GPS OBSERVATIONS AS FOLLOWS. THROUGH THE USE OF A CELL EQUIPPED TRIMBLE R8 GNSS ROVER AND A TRIMBLE TSC3 DATA COLLECTOR UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING STATIONS. THIS INFORMATION WAS ADOPTED AND CHECKED BY FIELD GPS OBSERVATION USING TWO (2) NAD83(NRS2007) ADJUSTED POINTS. THE ADOPTED POINTS AS REPORTED BY THE TRIMBLE SOFTWARE WERE AS FOLLOWS: (MOOP) WITH A VALUE OF NORTH 324131.158M, EAST 232613.457M. THE FIELD OBSERVED CHECK STATION USED WAS AS FOLLOWS: NCS STATION F-149 WITH A PID OF C00547 WITH A CHECK VALUE OF NORTH 330484.911M, EAST 232647.881M. THE SITE GRID AZIMUTH AND PROJECT GRID FACTOR WERE ADOPTED AS CALCULATED BY THE TRIMBLE TSC3 DATA COLLECTOR SURVEY CONTROLLER, AND TRIMBLE BUSINESS CENTER SOFTWARE. THE MISSOURI EAST ZONE NAD83(NRS2007) STATE PLANE GRID COORDINATES FOR THE SITE WERE THEN CALCULATED AND VERIFIED THROUGH TRIMBLE BUSINESS CENTER SOFTWARE. TO THE BEST OF OUR KNOWLEDGE, THE CALCULATED STATE PLANE GRID COORDINATES MEET THE ACCURACY STANDARDS OF THE CURRENT MISSOURI MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS (20 CSR 2030-16) AS AN URBAN CLASS SURVEY RELATIVE TO STATIONS NCS JC0542 AND MOOF.

PROJECT GRID FACTOR = 1.0000820328

**GRADING NOTES:**

1. A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils tests shall be verified by the Geotechnical Engineer concurrent with the grading and back filling operations.

2. The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied there from, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.

3. The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.

4. All areas shall be allowed to drain. All low points shall be provided with temporary ditches.

5. A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales should be implemented as soon as possible. No graded area is to be allowed to remain bare over the winter without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and siltting up existing downstream storm drainage system.

6. Any existing trash and debris currently on this property must be removed and disposed of off-site.

7. Soft soil in the bottom and banks of any existing or former pond sites or tributaries should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed right-of-way locations or on storm sewer locations.

8. Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man-made structures. The unsuitable material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly disc'd prior to the placement of any fill. The Soils Engineer shall approve the discing operation.

9. Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory roller, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.

10. The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Interim reports showing fill quality will be made to the Owner at regular intervals.

11. The Soils Engineer shall notify the Contractor of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.

12. All areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted in accordance with the specifications given below. Natural slopes steeper than 1 vertical to 5 horizontal to receive fill shall have horizontal benches, cut into the slopes before the placement of any fill. The width and height to be determined by the Soils Engineer. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Soils Engineer shall be responsible for determining the acceptability of soils placed. Any unacceptable soils placed shall be removed at the Contractor's expense.

13. The surface of the fill shall be finished so that it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.

14. All siltation control devices shall be inspected by the contractor after any rain of 1/2" or more with any appreciable accumulation of mud to be removed and siltation measures repaired where necessary.

15. No slope shall be steeper than 3(Horizontal):1(Vertical). All slopes shall be sodded or seeded and mulched.

16. Any contaminated soil encountered during excavation shall be hauled and placed as directed by the owners environmental engineering representative.

17. The location of and details for all siltation control devices (silt fences and sediment basins) must follow the "St. Charles County Soil and Water Conservation District Erosion and Sediment Control" guidelines.

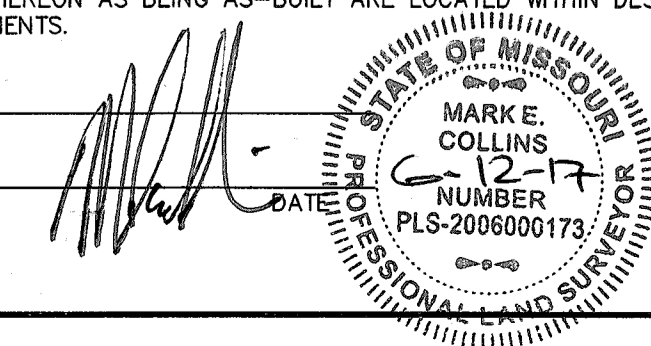
**AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS**

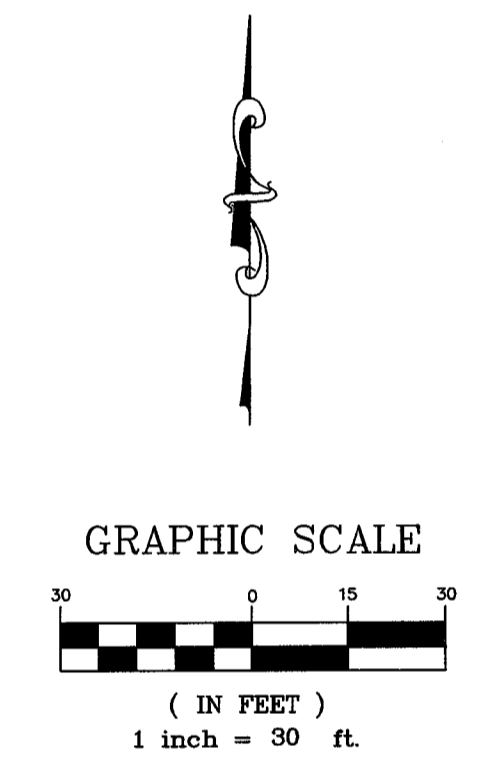
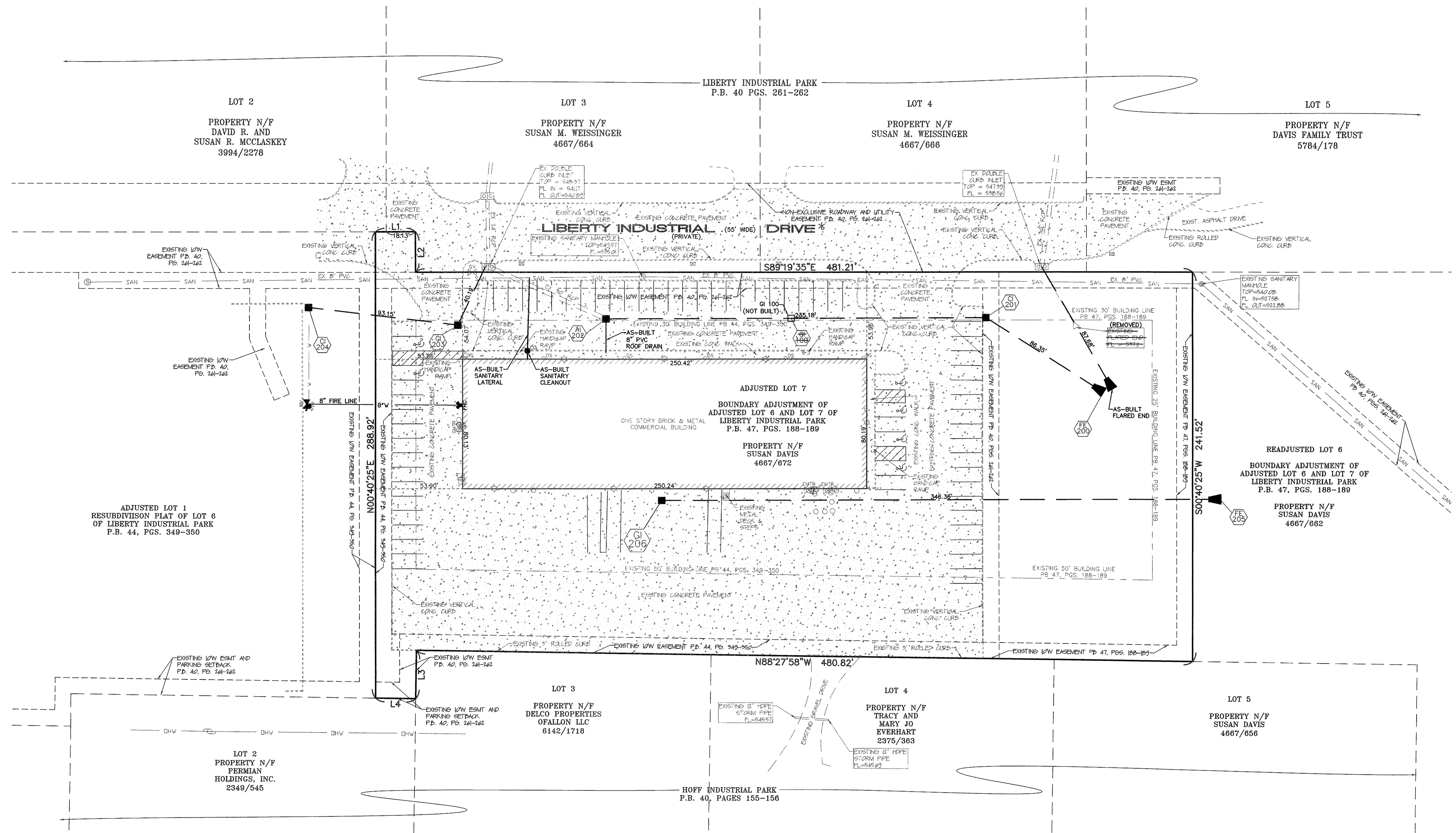
THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- FIRE HYDRANTS
- WATER VALVES
- LIGHT STANDARDS

ALL PUBLIC UTILITIES SHOWN HEREON AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS.

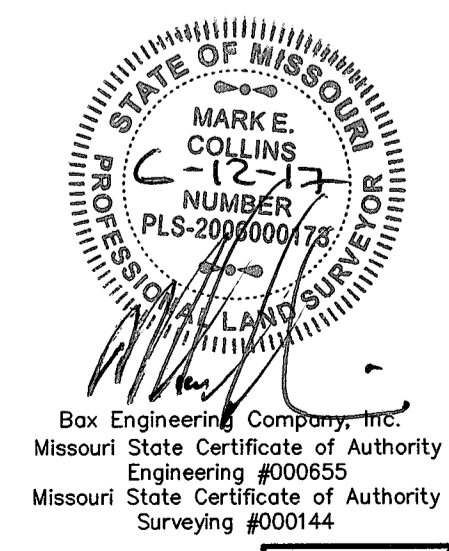
SIGNED: P.E./S.

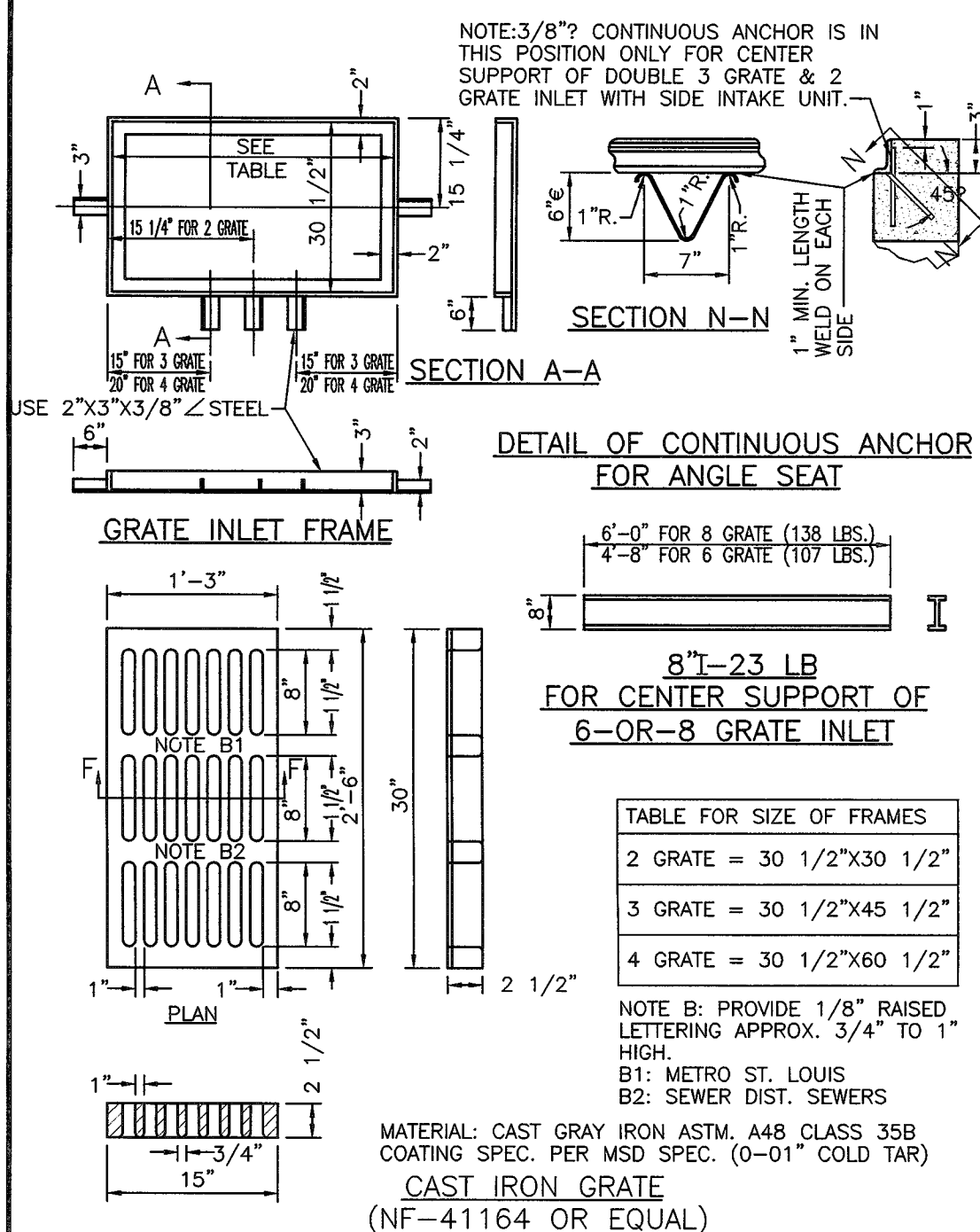




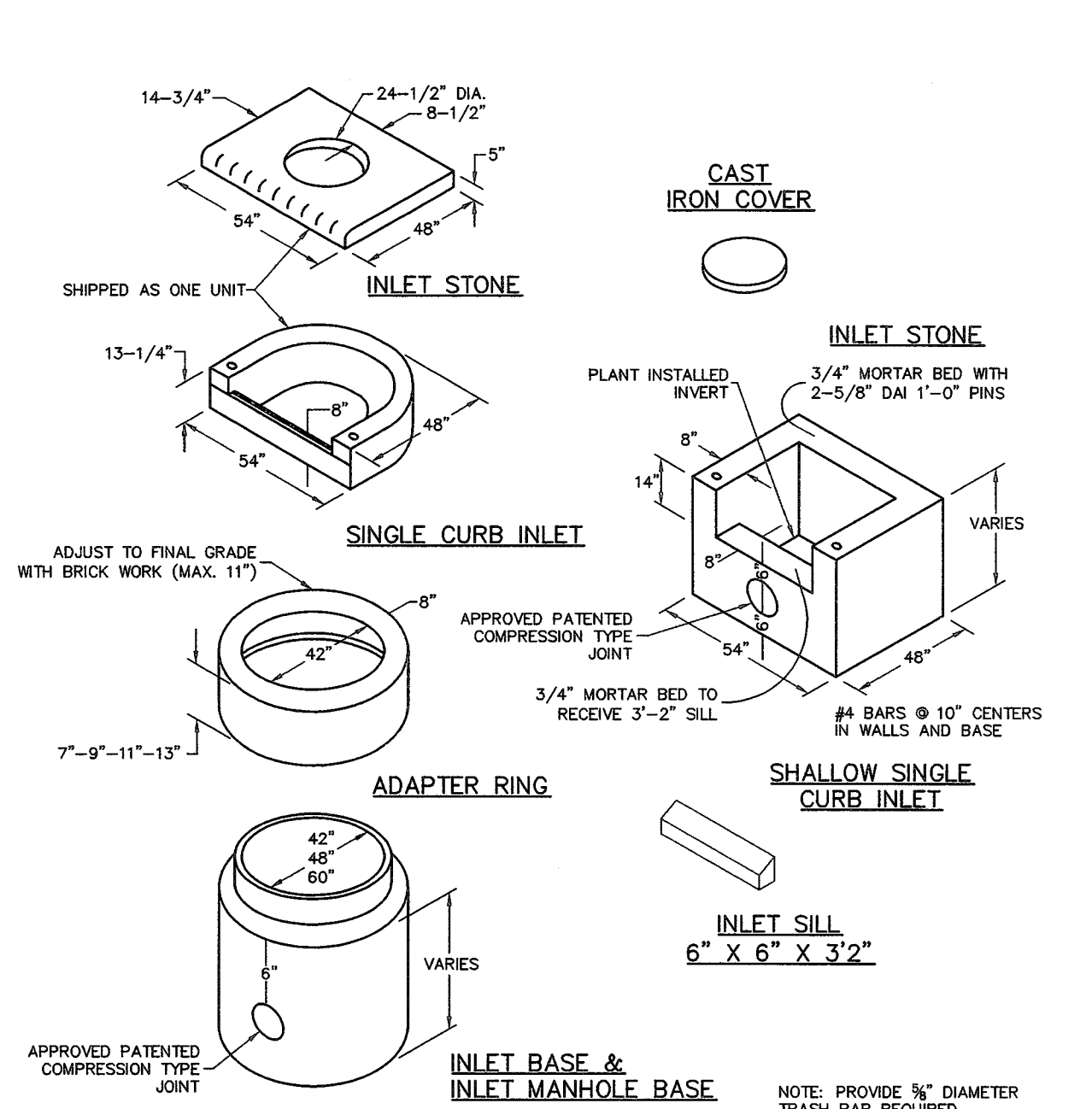
Line Table

Line #	Length	Direction
L1	24.79'	S89°19'35"E
L2	25.00'	N00°40'25"W
L3	30.00'	S01°32'02"E
L4	24.79'	N88°27'58"W

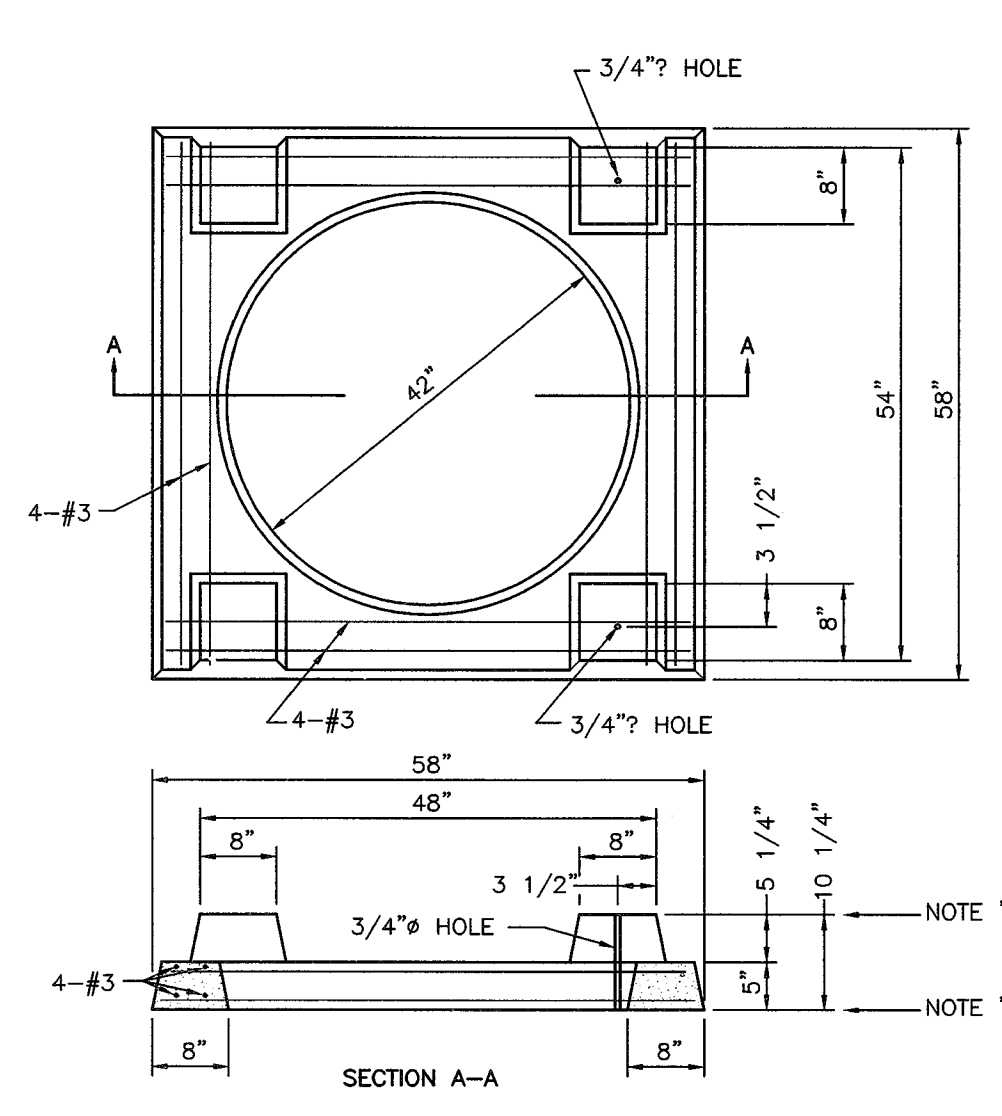




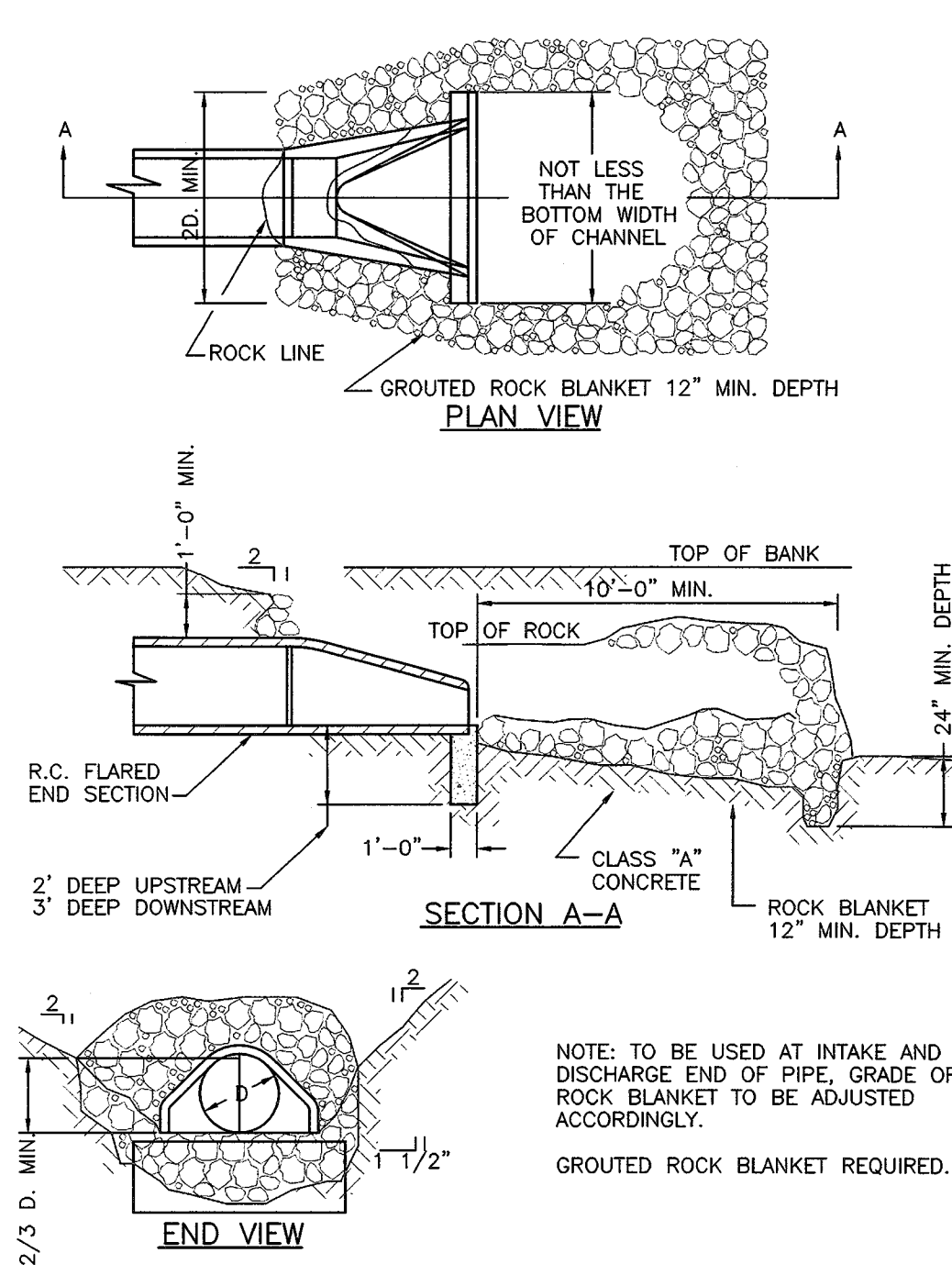
**DETAILS OF INLET FRAME AND GRATES**



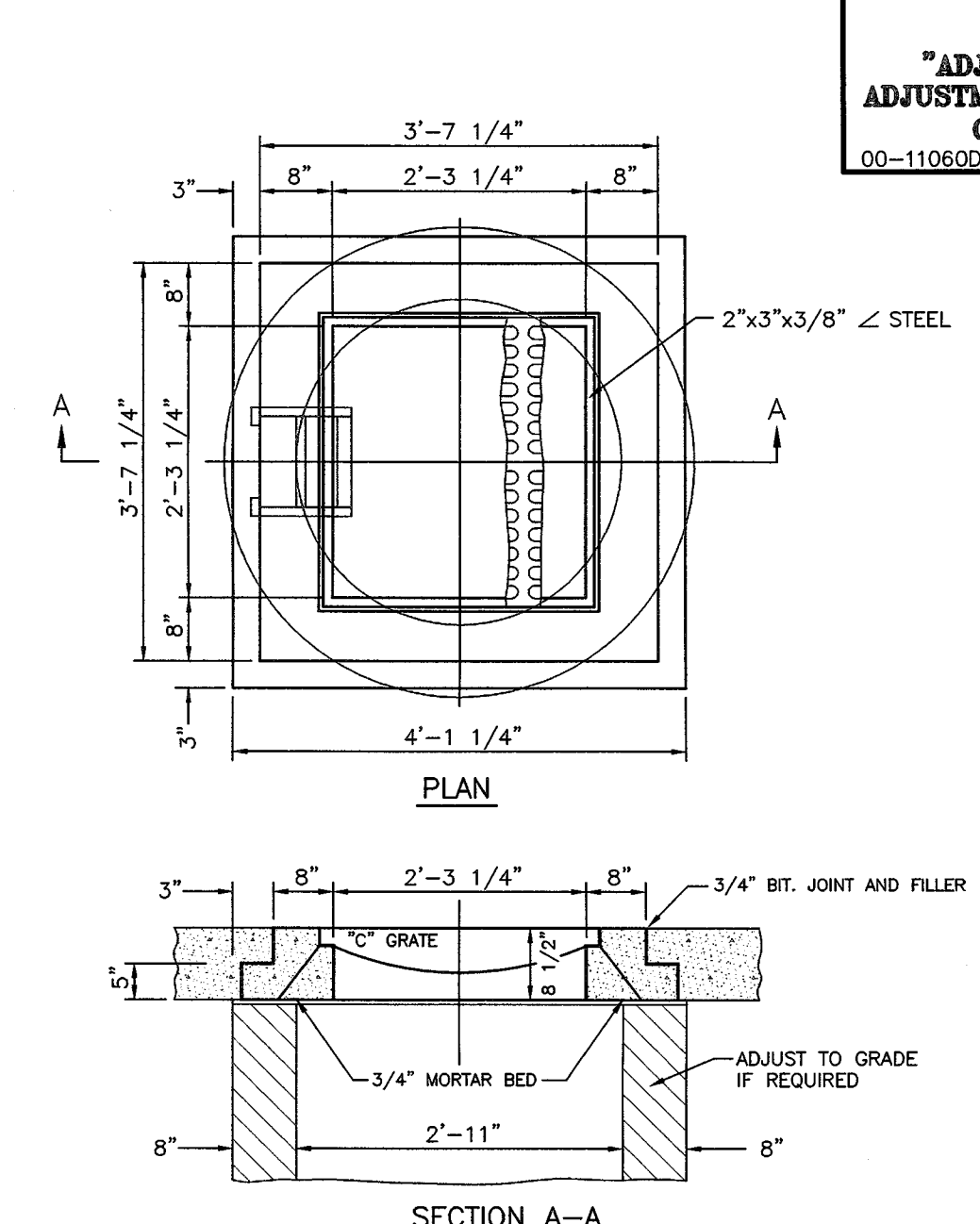
**SINGLE STREET INLETS PRECAST CONCRETE**



**PRECAST CONCRETE UNIT FOR 4-WAY AREA INLET**



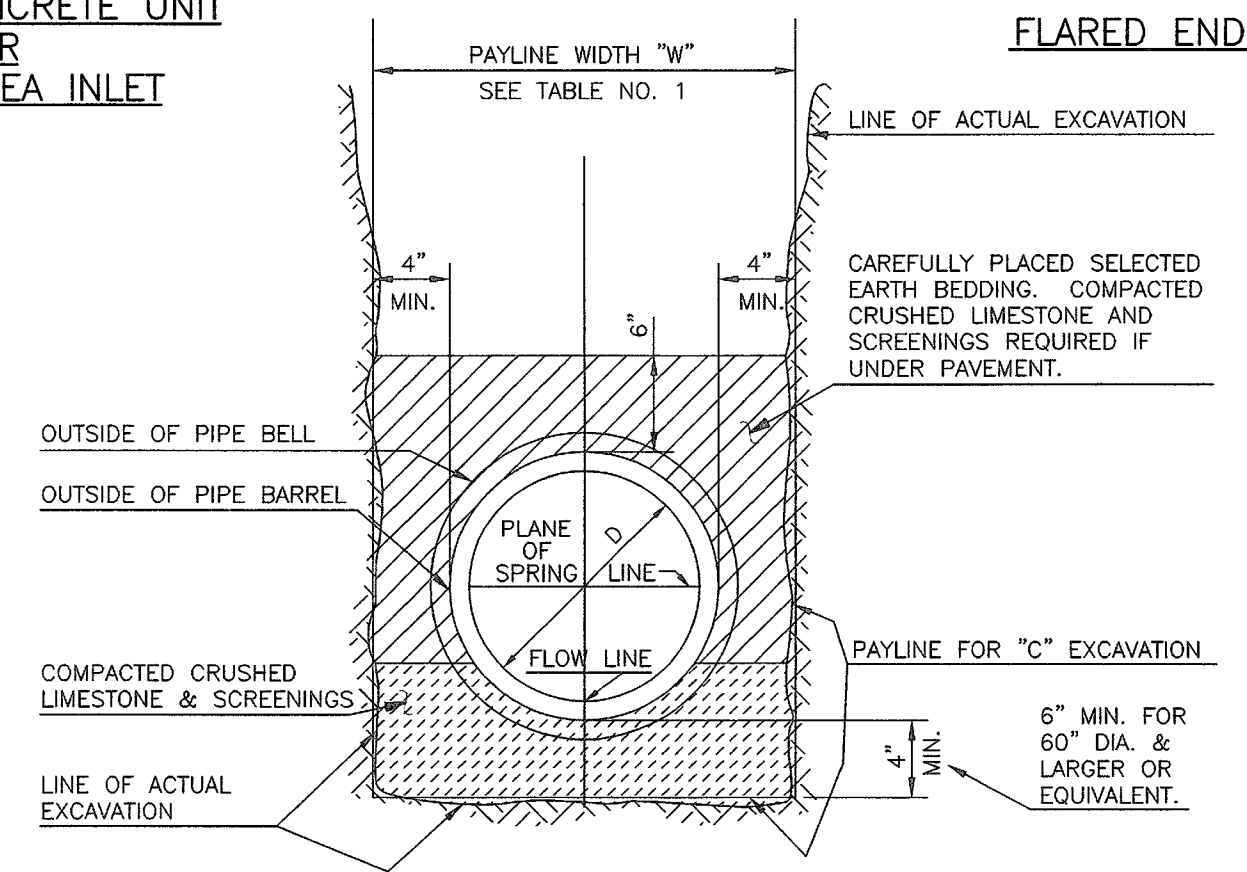
**FLARED END SECTION**



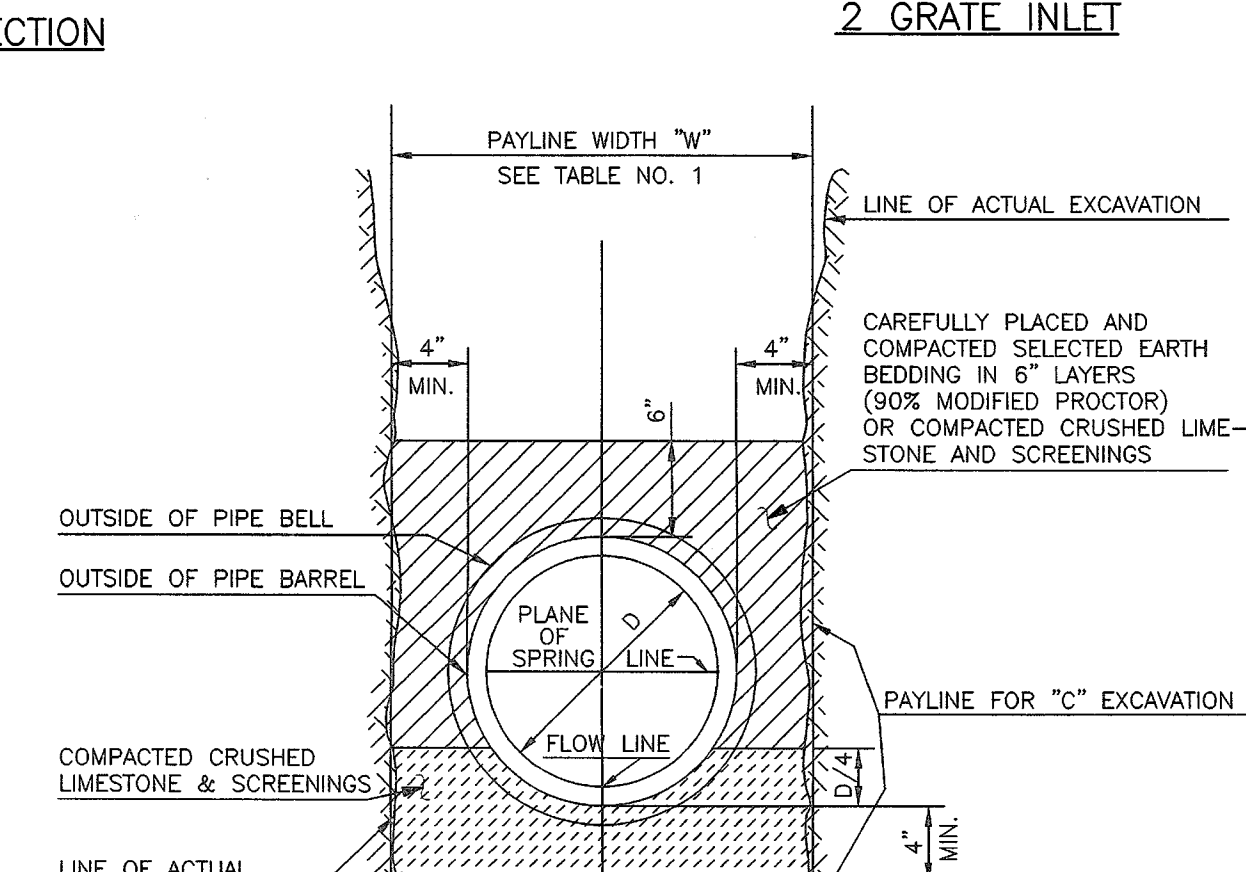
**2 GRATE INLET**

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
Inside Diameter of Pipe (Inches)	"w" Payline Width of Trench (Inches)	"w" Payline Width of Trench (Feet)	Pay-volumes cu. ft. per ft. of Concrete Encasement	Inside Diameter of Pipe (Inches)	"w" Payline Width of Trench (Inches)	"w" Payline Width of Trench (Feet)	Pay-volumes cu. ft. per ft. of Concrete Encasement
4	28	2.33	3.20				
6	28	2.33	3.46				
8	28	2.33	3.70				
10	28	2.33	3.86				
12	28	2.33	3.98				
15	32	2.67	4.89				
18	35	2.92	5.63	14 X 23	41	3.42	5.94
21	39	3.25	6.61				
24	42	3.50	7.39	19 X 30	49	4.08	7.68
27	45	3.75	8.18	22 X 34	53	4.42	8.61
30	49	4.08	9.30	24 X 38	58	4.83	9.70
33	53	4.42	10.53	27 X 42	62	5.17	10.71
36	56	4.67	11.43	29 X 45	66	5.50	11.72
39	DISCONTINUED			32 X 49	71	5.92	13.14
42	63	5.25	13.38	34 X 53	75	6.25	14.05
48	70	5.83	15.67	38 X 60	83	6.92	16.18

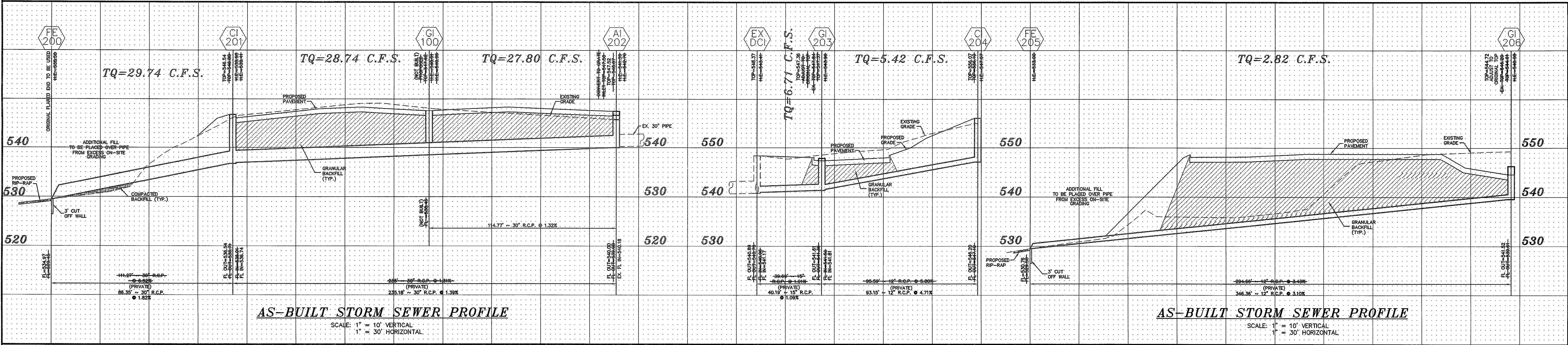
**TABLE NO. 1 PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE**



**PIPE BEDDING CLASS "C" (MODIFIED FOR REINFORCED CONCRETE PIPE)**



**PIPE BEDDING CLASS "C" (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)**



**AS-BUILT STORM SEWER PROFILE**

**AS-BUILT STORM SEWER PROFILE**

INDICATES CRITICAL DEPTH

UPP STA	LOW STA	DIA	UPPER ELEV	LOWER ELEV	PS	UPPER HY ELEV	LOWER HY ELEV	BYDR	FR HEAD	VEL HEAD	VEL JUNC	TURB LOSS	FRIC LOSS	SR	INL CAP	DR AREA	PC	Q	TO	R/P	REMARKS
GI 206 FE 205	249	12	539.61	532.00	3.06	544.61	4.46	540.15	533.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.56	6.23	1 RM=533.00
CT 204 GI 203	96	12	547.10	541.56	5.80	556.10	8.43	543.98	543.96	0.2310	2.21	6.90	0.74	0.74	0.00	0.00	0.00	0.00	5.42	8.58	2
GI 203 EX 202	40	15	541.36	540.96	1.02	547.33		543.41	543.41	0.0000	0.38	5.13	0.41	0.17	0.46	0.00	0.00	0.00	6.28	6.48	3
EX DCI AT 202	78	30	540.76	540.20	0.32	548.36	4.95	543.41	542.70	0.0400	0.31	5.27	0.43	0.40	0.00	0.00	0.00	0.00	25.89	34.85	4
AT 202 CT 201	235	30	540.00			545.75		543.39	539.41	0.0470	1.12	5.76	0.51	0.23	0.12	0.00	0.00	0.00	47.63	61.43	5
CT 201 FE 200	53	30	538.71	536.00	1.33	546.80	7.82	538.98	538.50	0.0000	0.27	5.92	0.54	0.21	0.17	0.00	0.00	0.00	29.07	47.22	6 RM=538.50

Box Engineering Company, Inc.  
 Missouri State Certificate of Authority  
 Engineering 000855  
 Missouri State Certificate of Authority  
 Surveying 000144

STATE OF MISSOURI  
 MARKE E. COLLINS  
 LICENSE NUMBER  
 PLS-2006000173

O'FALLON #7701.03 & 7701.04 May 18, 2006