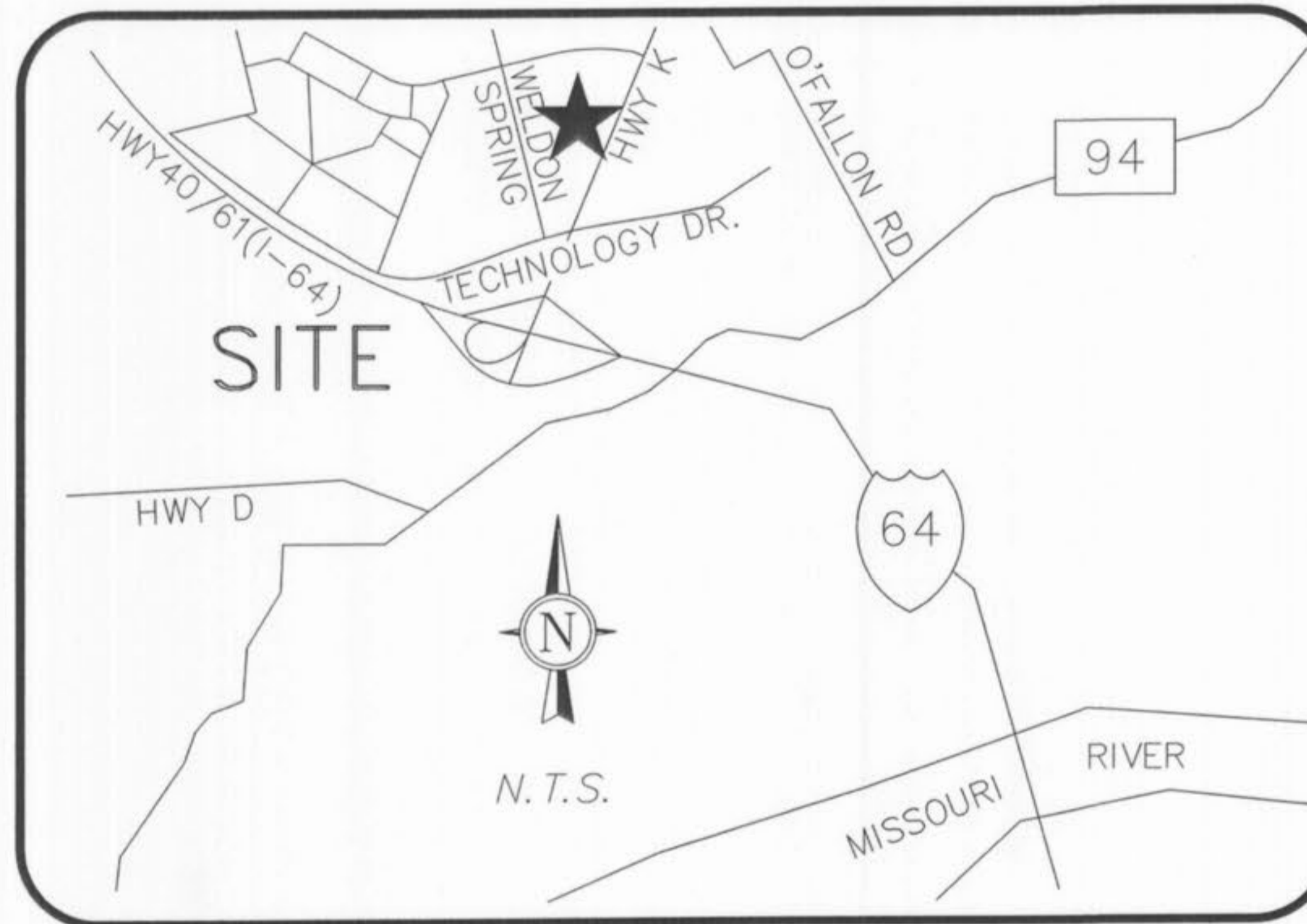


# A SITE PLAN FOR LOT 4E OF LABOURE' CENTER

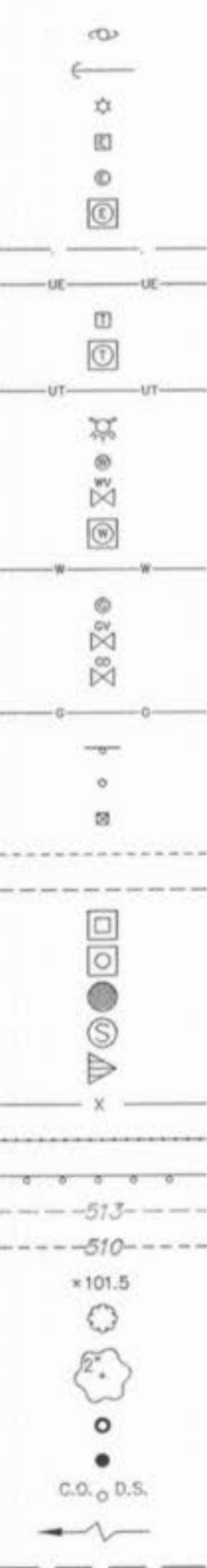
PART OF LOT 4 OF WILLIAM H. ERKER SUBDIVISION, PLAT BOOK 40 PAGE 150,  
IN U.S. SURVEY 1669, TOWNSHIP 46 NORTH, RANGE 3 EAST  
CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI

## SITE IMPROVEMENT PLANS



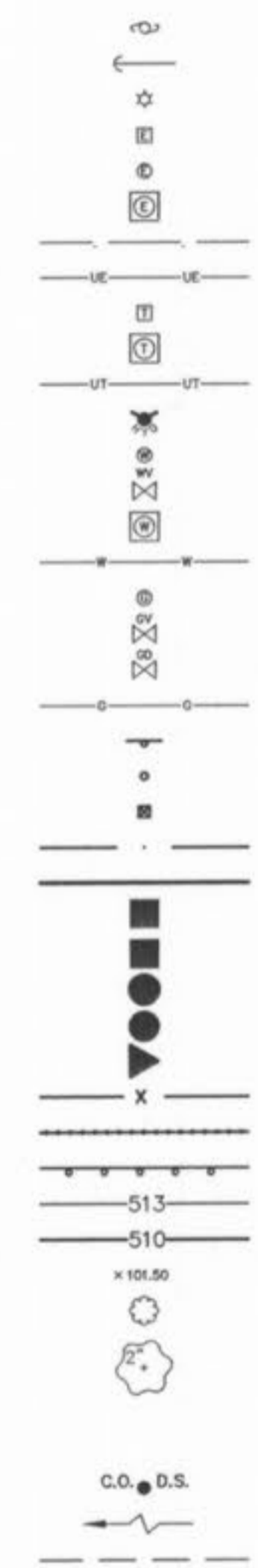
### LEGEND

#### EXISTING



**UTILITY POLE**  
**GUY WIRE**  
**LIGHT STANDARD**  
**ELECTRIC BOX**  
**ELECTRIC METER**  
**ELECTRIC MANHOLE**  
**OVERHEAD ELECTRIC LINE**  
**UNDERGROUND ELECTRIC LINE**  
**TELEPHONE BOX**  
**TELEPHONE MANHOLE**  
**UNDERGROUND TELEPHONE LINE**  
**FIRE HYDRANT**  
**WATER METER**  
**WATER VALVE**  
**WATER MANHOLE**  
**WATER LINE**  
**GAS METER**  
**GAS VALVE**  
**GAS DRIP**  
**GAS LINE**  
**STREET SIGN**  
**BOLLARD OR POST**  
**MAILBOX**  
**SANITARY SEWER**  
**STORM SEWER**  
**STORM DRAIN GRATE INLET**  
**STORM DRAIN AREA INLET**  
**STORM DRAIN MANHOLE**  
**SANITARY SEWER MANHOLE**  
**FLARED END SECTION**  
**FENCE: CHAIN LINK OR WIRE**  
**FENCE: WOOD CONSTRUCTION**  
**GUARDRAIL**  
**MINOR CONTOUR INTERVAL**  
**MAJOR CONTOUR INTERVAL**  
**SPOT ELEVATION**  
**BUSH OR SHRUB**  
**TREE W/APPROXIMATE DIAMETER SIZE**  
**FOUND SURVEY MONUMENT AS NOTED**  
**SET SURVEY MONUMENT AS NOTED**  
**CLEAN-OUT/DOWN-SPOUT**  
**SWALE**  
**UTILITY EASEMENT**

#### PROPOSED



### INDEX

- C1** TITLE SHEET
- C2** GENERAL NOTES
- C3** EXISTING SITE
- C4** SITE PLAN
- C5** SITE GEOMETRICS PLAN
- C6** SITE GRADING PLAN
- C7** SITE UTILITY PLAN
- C7.1** SITE DETAILS
- C8** STORM SEWER PROFILES
- C9** DRAINAGE AREA MAP
- C10** TRAFFIC CONTROL PLAN

### LOCATOR MAP

**PROPERTY OWNER** LABOURE' 4E, L.L.C.  
**35 N. CENTRAL AVE.**  
**SUITE 400**  
**ST. LOUIS, MO 63105**

**EXISTING ZONING** C-2

**SITE ACREAGE** 0.6

**SITE ADDRESS** 4581 STATE HIGHWAY K



SEWER MEASUREMENTS

The existing sewer lengths, sizes, flowlines, depths of structures and sewers and locations with respect to existing or proposed easements have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

6/28/06  
 P.E./L.S. DATE

J. R. GRIMES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. J. R. GRIMES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

Call Before you DIG  
TOLL FREE  
1-800-344-7483  
MISSOURI ONE-CALL SYSTEM INC.

Underground facilities, structures & utilities have been plotted from available surveys, records & information, and therefore, do not necessarily reflect the actual existence, nonexistence, size, type, number of, or location of these facilities, structures, & utilities.  
 The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, & utilities, either shown or not shown on these plans. The underground facilities, structures, & utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.

Call Before you DIG  
TOLL FREE  
1-314-340-4100  
MoDot UNDERGROUND FACILITY LOCATE  
FIBER OPTICS MAY BE PRESENT

#### FLOOD NOTE

NOTE: THE ENTIRE SURVEYED TRACT AS SHOWN HEREON LIES WITHIN FLOOD ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP 29183C0430 E. EFFECTIVE DATE: AUGUST 2, 1996

**BENCHMARK:**  
 RM 57: (548.01 PER FLOOD INSURANCE MAP COMMUNITY PANEL NO. 29183C 0430 E) - CHISELED SQUARE ON SOUTHWEST END OF SOUTH HEADWALL OF CULVERT LOCATED AT JUNCTION OF U.S. HIGHWAY 40 AND COUNTY HIGHWAY K

"AS-BUILT"

- ▲ 03/16/06 PER SEWER LOCATION COORDINATION
  - ▲ 01/09/06 PER MODOT COMMENTS
  - ▲ 12/22/05 PER CITY OF O'FALLON COMMENTS
  - ▲ 12/20/05 PER P.W.S.D.#2 COMMENTS
  - ▲ 12/06/05 PER FIRE MARSHALL COMMENTS
  - ▲ 12/02/05 PER CITY OF O'FALLON COMMENTS
- CITY FILE #704.02

## LOT 4E OF LABOURE' CENTER TITLE SHEET

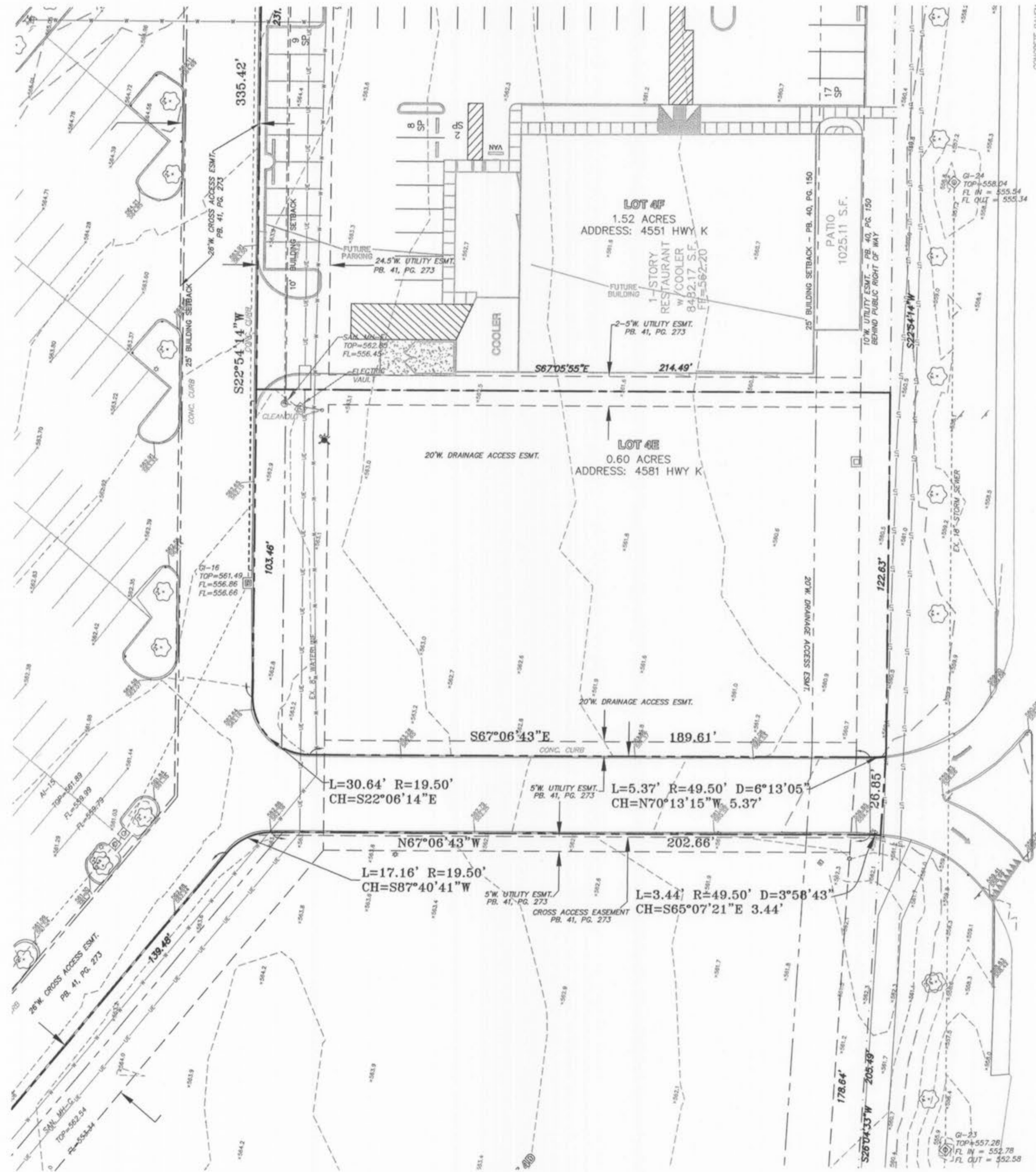
**J. R. GRIMES CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH: (314) 849-6100  
FAX: (314) 849-6010

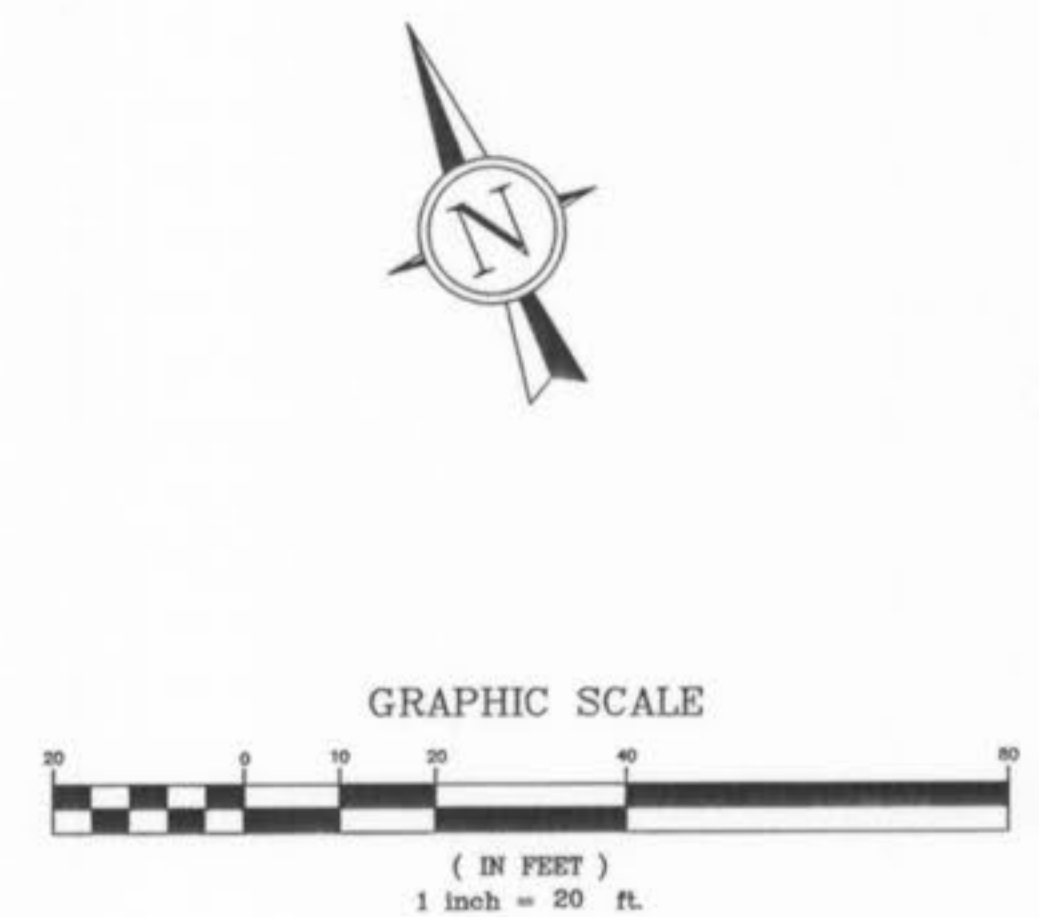
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|-----------|----------|-------------|----------|-------------|--------|
| DRAWN BY: | DATE:    | CHECKED BY: | DATE:    | JOB NUMBER: | SHEET: |
| JSK       | 10/31/05 | LJM         | 10/31/05 | 1384        | C1     |

PREPARED FOR:  
**LABOURE' 4E, L.L.C.**  
 35 N. CENTRAL, STE 400  
 ST. LOUIS, MO 63105  
 PH: (314) 863-6061  
 FAX: (314) 863-6146

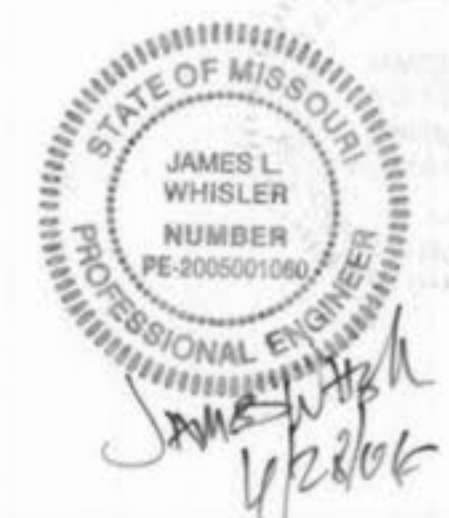




STATE HIGHWAY K (WIDTH VARIES)



PREPARED FOR:  
**LABOURE' 4E, L.L.C.**  
 35 N. CENTRAL, STE 400  
 ST. LOUIS, MO 63105  
 PH: (314) 863-6061  
 FAX: (314) 863-6146



|   |                |   |                |
|---|----------------|---|----------------|
| 01/09/06 PER MODOT COMMENTS                             |                | CITY FILE #704.02   |                |
| <b>LOT 4E OF LABOURE' CENTER<br/>EXISTING SITE PLAN</b> |                |   |                |
| <b>J. R. GRIMES</b>                                     |                | 12300 OLD TESSON ROAD<br>SUITE 3000<br>ST. LOUIS, MO. 63128 |                |
| <b>CONSULTING ENGINEERS, INC.</b>                       |                | PH. (314) 849-6100<br>FAX (314) 849-6010                    |                |
| DRAWN BY: JSK   | DATE: 10/31/05 | CHECKED BY: LJM   | DATE: 10/31/05 |
| JOB NUMBER: 1384  |                | SHEET: C3   |                |

**PERTINENT DATA**

OWNER: LABOURE' 4E, L.L.C.  
 35 N. CENTRAL AVE.  
 SUITE 400  
 ST. LOUIS, MO 63105

DEVELOPER: LABOURE' 4E, L.L.C.'P  
 35 N. CENTRAL AVE.  
 SUITE 400  
 ST. LOUIS, MO 63105

SITE ADDRESS: 4581 STATE HIGHWAY K  
 EXISTING ZONING: "C-2" GENERAL BUSINESS DISTRICT  
 SITE AREA: 0.60 ACRES  
 BUILDING AREA: 3,120 S.F. GROSS  
 1,650 S.F. COFFEE HOUSE  
 1,470 S.F. ICE CREAMERY

WATER SHED: CROOKED CREEK  
 WATER DISTRICT: PUBLIC WATER DISTRICT NO. 2  
 FIRE DISTRICT: COTTLEVILLE COMMUNITY FIRE DISTRICT  
 SCHOOL DISTRICT: FRANCIS HOWELL  
 SEWER DISTRICT: DUCKETT CREEK  
 GAS SERVICE: ST. CHARLES GAS CO.  
 ELECTRIC SERVICE: AMEREN U.E.  
 TELEPHONE SERVICE: SOUTHWESTERN BELL

**PARKING CALCULATIONS**

(PARKING REQUIREMENTS BASED ON APA GUIDELINES)

LOT 4E:

STARBUCK'S: 1,650 GROSS FLOOR AREA  
 (480 S.F. INDOOR DINING/PUBLIC AREA)  
 (180 S.F. OUTDOOR DINING AREA)  
 (TOTAL 30 SEATS INDOOR/OUTDOOR MAX.)

SPACES REQUIRED: 1 / 4 SEATS = 8 SPACES  
 PER APA  
 1 / 2,550 S.F. = 9 SPACES\*  
 1 / 2,000 S.F. = 9 SPACES\*  
 1 / 505 S.F. PUBLIC AREA = 13 SPACES\*  
 1 / 1,005 S.F. GROSS AREA = 17 SPACES\*  
 1 / 755 S.F. GROSS AREA = 22 SPACES\*  
 1 / 405 S.F. DINING AREA = 17 SPACES\*  
 1 / 405 S.F. DINING AREA = 21 SPACES\*  
 +1/EMP. ON MAX. SHIFT

TOTAL = 116/8 = 14.5  
 AVG. REQ. PER APA = 15 SPACES  
 TOTAL PROVIDED = 15 SPACES

\*S.F. BASED ON TOTAL DINING AREA

ICE CREAMERY: 1,470 GROSS FLOOR AREA  
 (TOTAL 30 SEATS INDOOR MAX.)

SPACES REQUIRED: 1 / 4 SEATS = 8 SPACES  
 PER APA  
 1 / 755 S.F. = 20 SPACES\*  
 1 / 1,005 S.F. = 15 SPACES\*  
 1 / 1,505 S.F. = 10 SPACES\*  
 1 / 2,005 S.F. = 8 SPACES\*  
 6 / 10,005 S.F. = 9 SPACES\*

TOTAL = 70/6 = 11.7  
 AVG. REQ. PER APA = 12 SPACES  
 TOTAL PROVIDED = 15 SPACES

RETAIL: 1,470 GROSS FLOOR AREA  
 (IN PLACE OF ICE CREAMERY)

SPACES REQUIRED: 1 / 1,005 S.F. = 15 SPACES  
 (MAXIMUM USE REQUIREMENT)  
 TOTAL PROVIDED = 15 SPACES

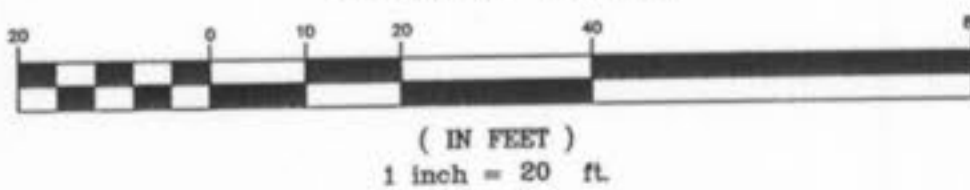
TOTAL PARKING REQ. PER MAXIMUM USE REQUIREMENT  
 TOTAL REQUIRED = 30 SPACES  
 TOTAL PROVIDED = 31 SPACES

H.C. ACCESSIBLE: TOTAL REQUIRED = 2 SPACES  
 TOTAL PROVIDED = 2 SPACES

BICYCLE: 1 FOR 15 PARKING SPACES OR 4 MIN.  
 30 P.S. = 2 SPACES  
 TOTAL REQUIRED = 4 SPACES  
 TOTAL PROVIDED = 4 SPACES



GRAPHIC SCALE



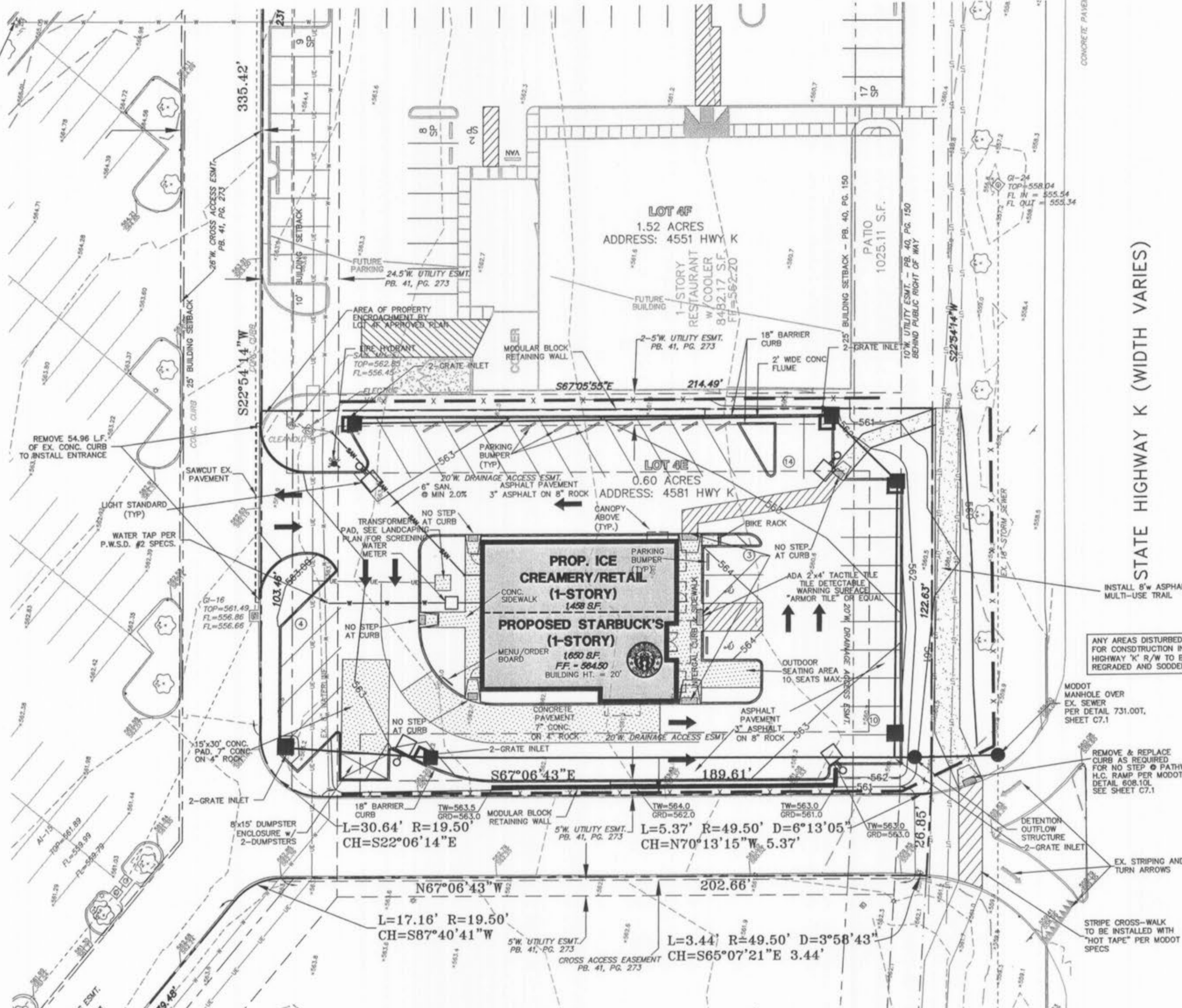
**"AS-BUILT"**

**SEWER MEASUREMENTS**

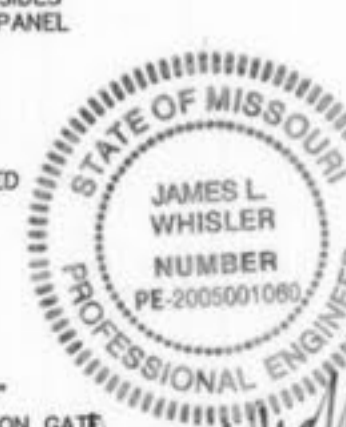
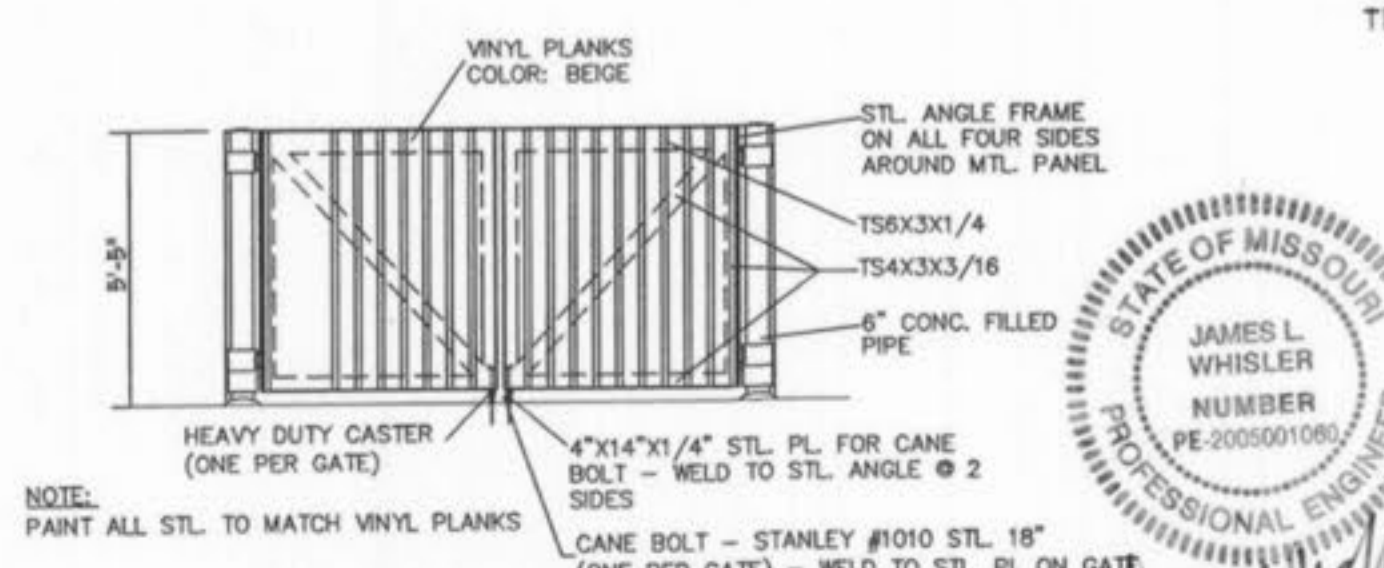
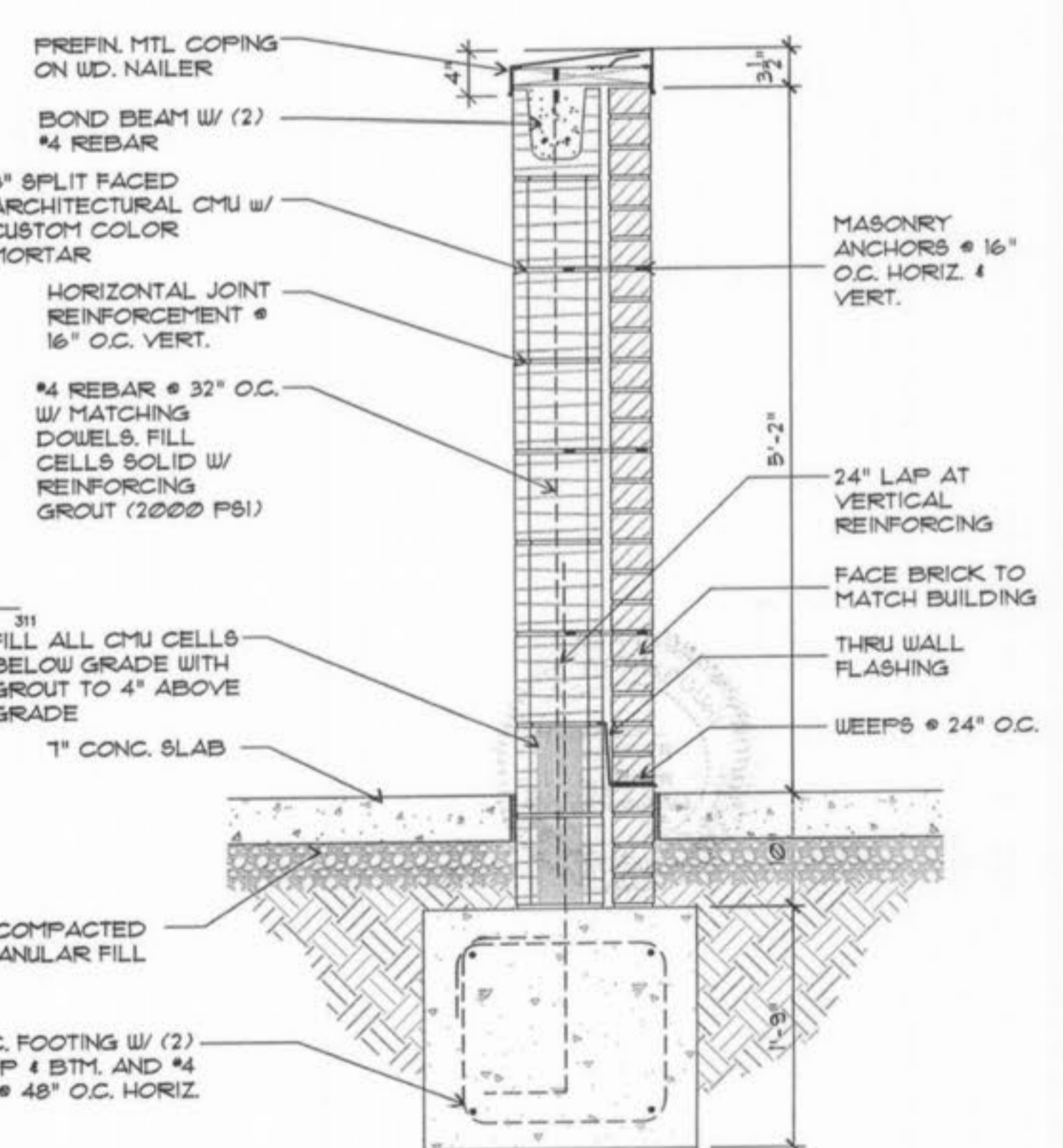
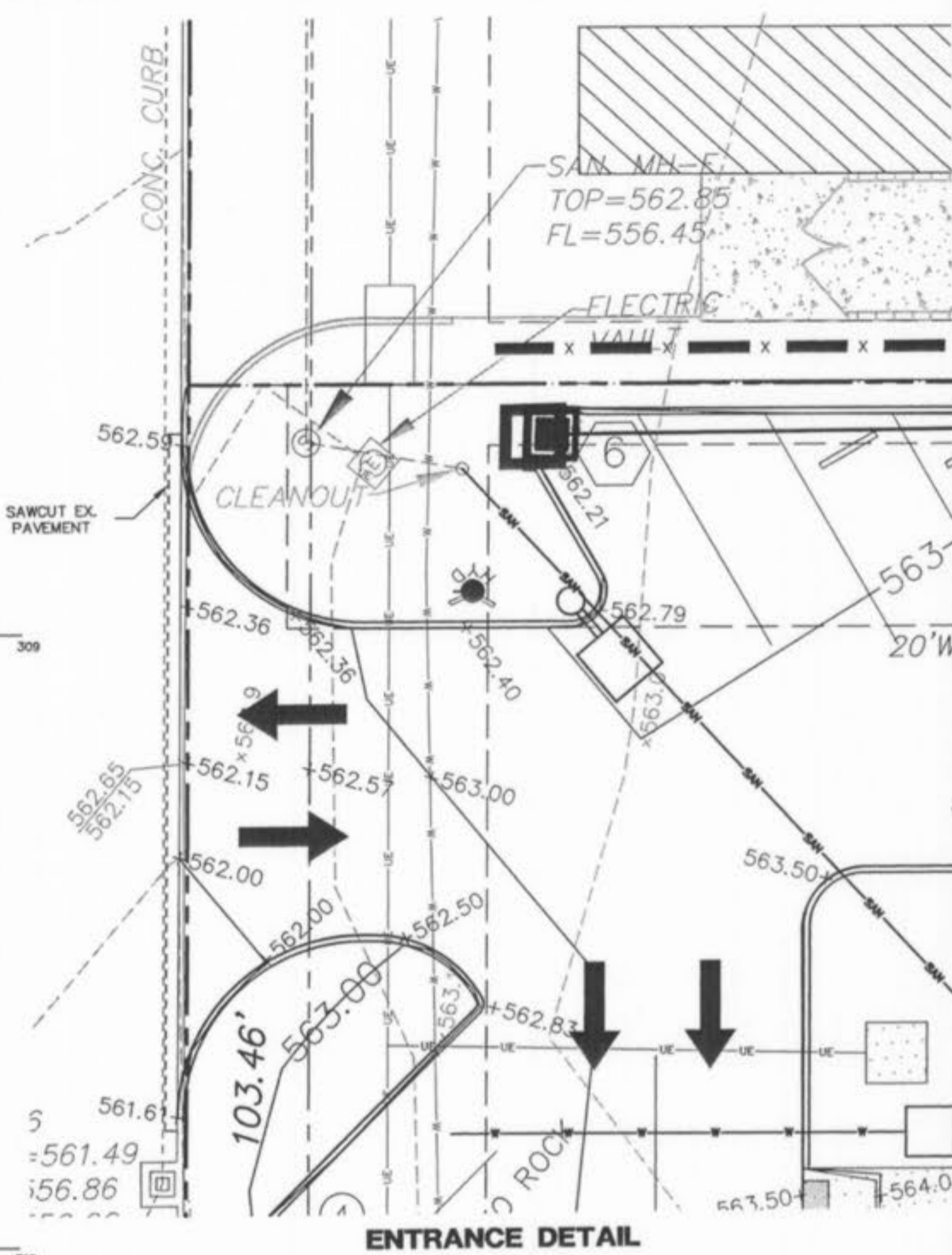
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All public sewers are located within designated existing or proposed easements.

P.E./L.S. \_\_\_\_\_ DATE \_\_\_\_\_



STATE HIGHWAY K (WIDTH VARIES)



01/09/06 PER MDDOT COMMENTS  
 12/22/05 PER CITY OF O'FALLON COMMENTS  
 12/02/05 PER CITY OF O'FALLON COMMENTS  
 03/16/06 PER SEWER LOCATION COORDINATION  
 CITY FILE #704.02

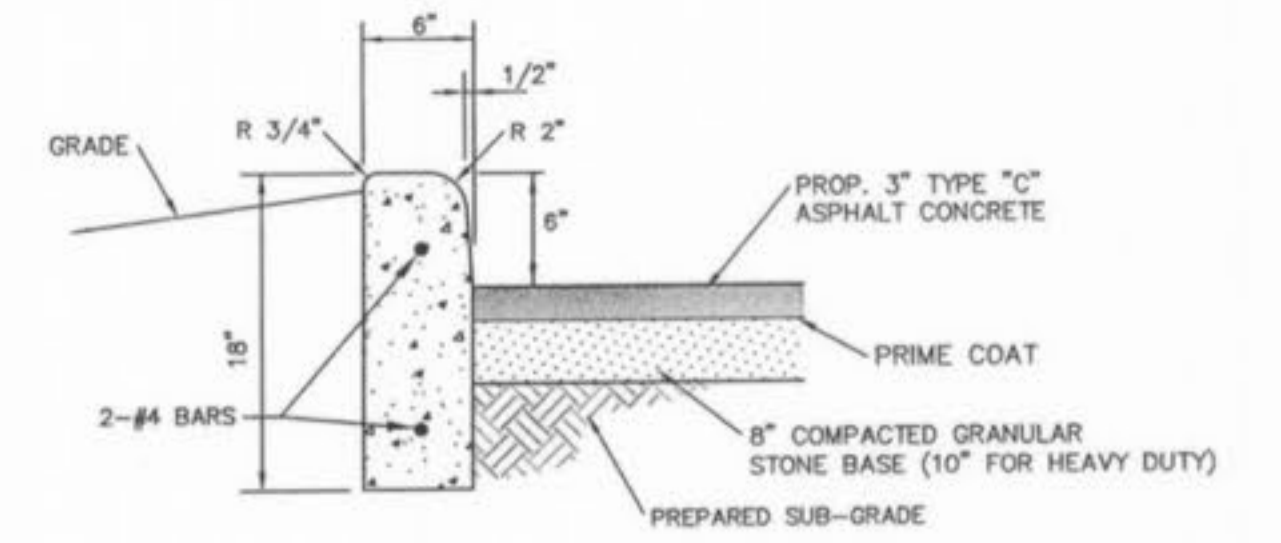
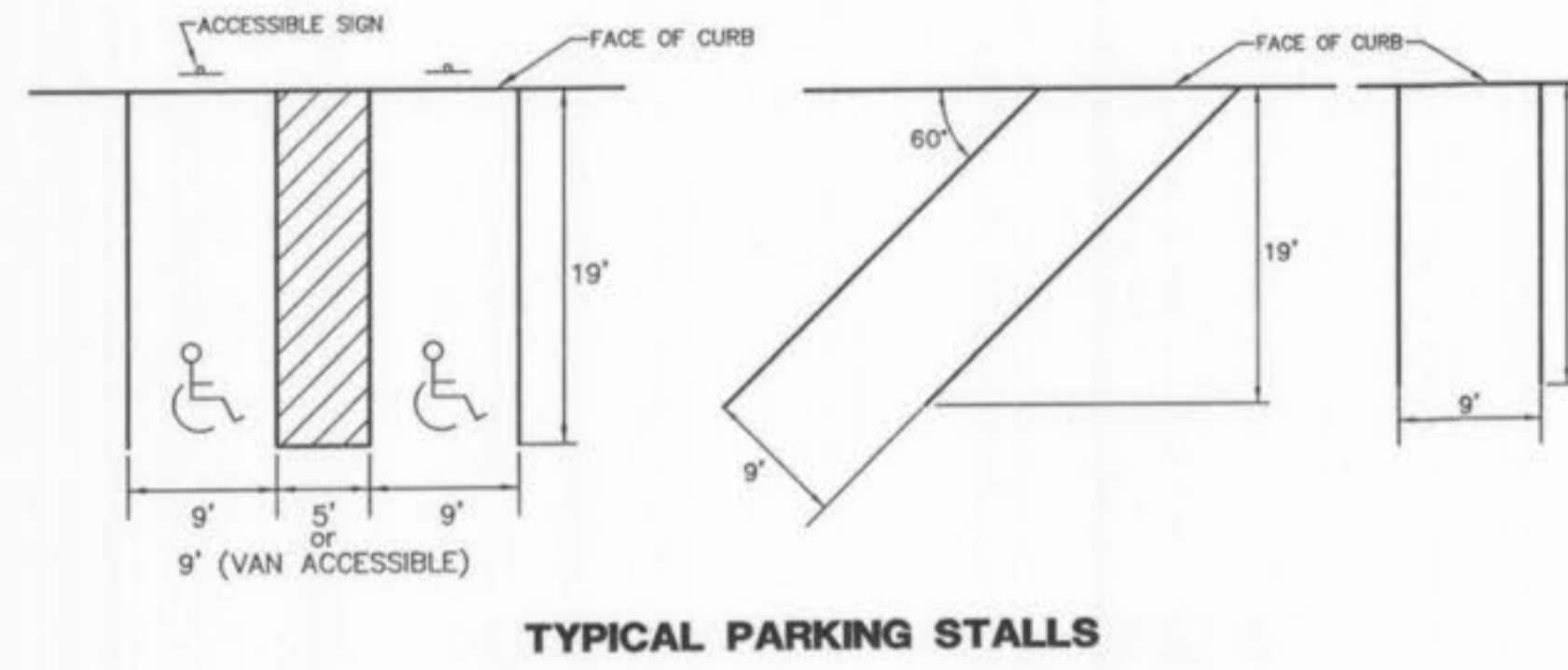
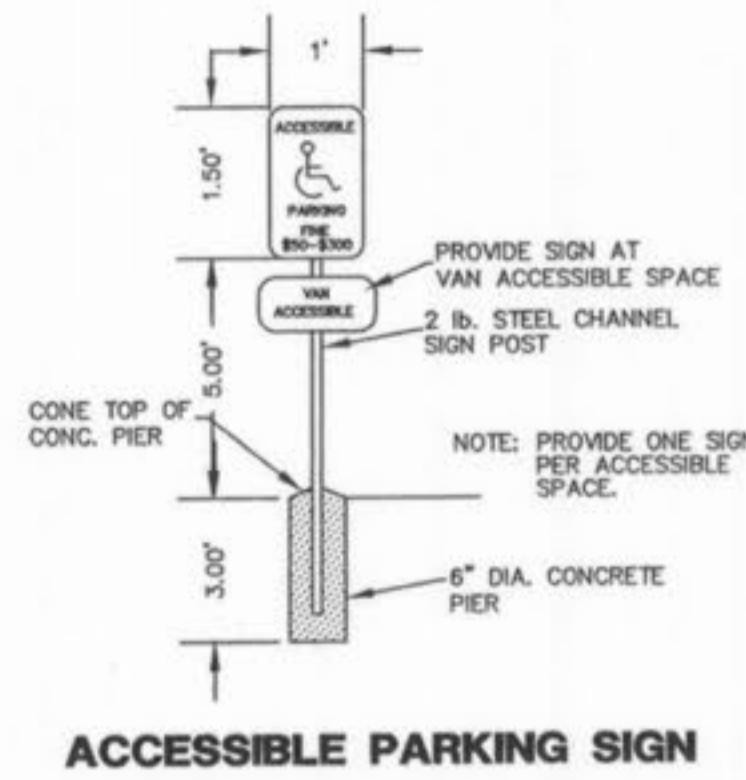
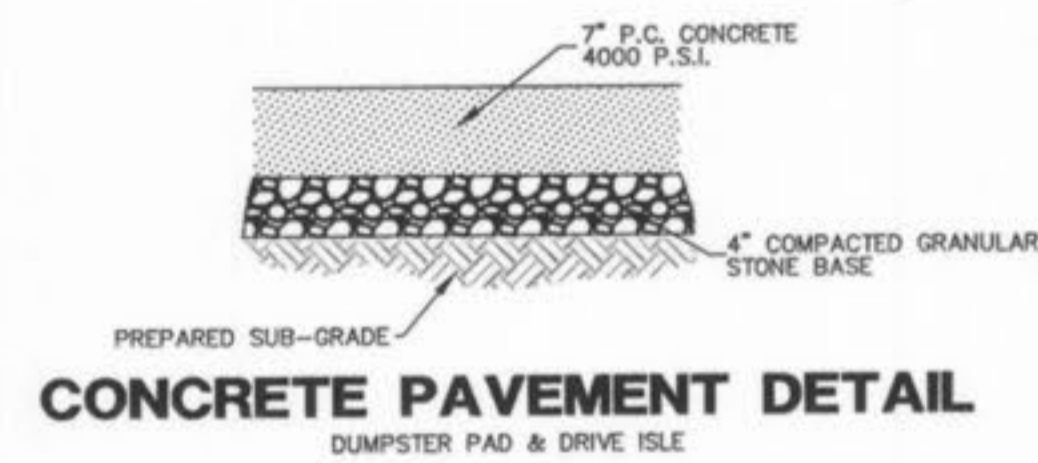
**LOT 4E OF LABOURE' CENTER  
 SITE PLAN**

**J. R. GRIMES  
 CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
 SUITE 3000  
 ST. LOUIS, MO. 63128  
 PH: (314) 849-8100  
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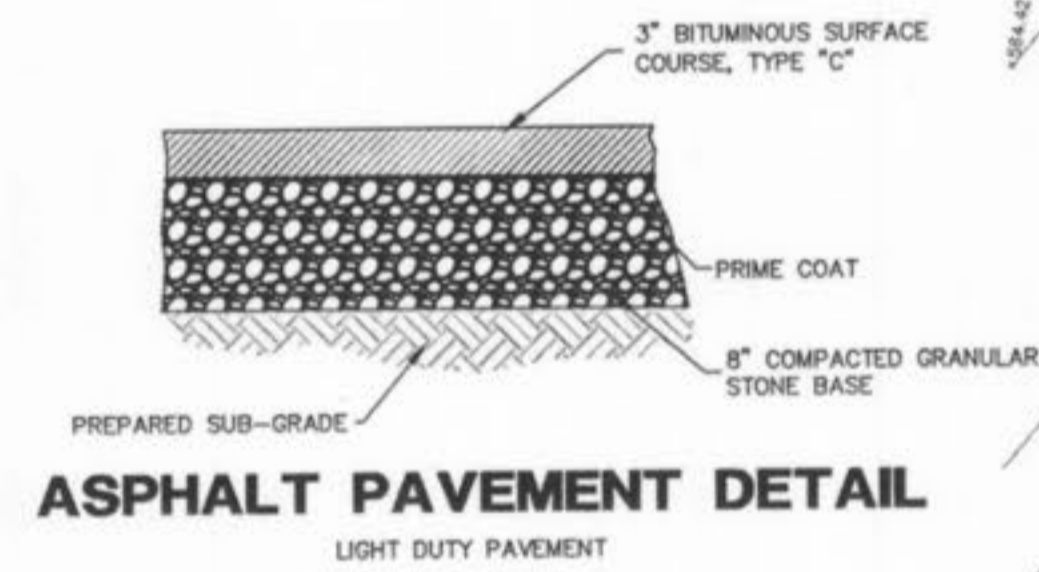
DRAWN BY: JSK DATE: 10/31/05 CHECKED BY: LJM DATE: 10/31/05 JOB NUMBER: 1384 SHEET: C4

PREPARED FOR:  
 LABOURE' 4E, L.L.C.  
 35 N. CENTRAL, STE 400  
 ST. LOUIS, MO 63105  
 PH: (314) 863-6061  
 FAX: (314) 863-6146

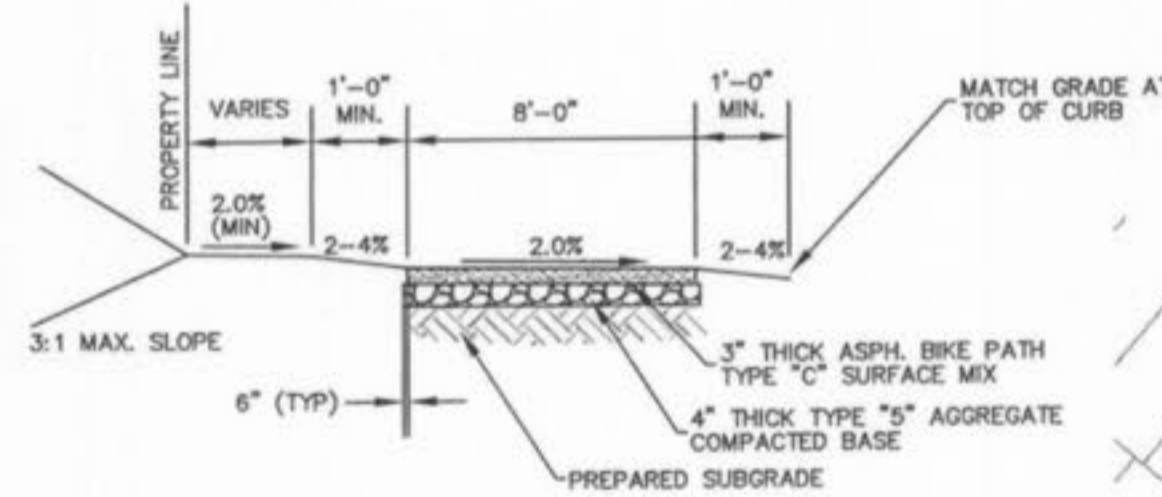


**18" BARRIER CURB AND PAVEMENT DETAIL**

- NOTES:
1. ALL CONCRETE SHALL BE MIN. FC=3000 P.S.I.
  2. ALL CONSTRUCTION MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF O'FALLON
  3. ANY UNSUITABLE SOIL (AS DETERMINED BY SOILS ENGINEER) BELOW STRUCTURE SHALL BE REMOVED AND REPLACED WITH SELECT EARTHEN MATERIAL COMPACTED IN PLACE WITH VIBRATORY TAMPER.

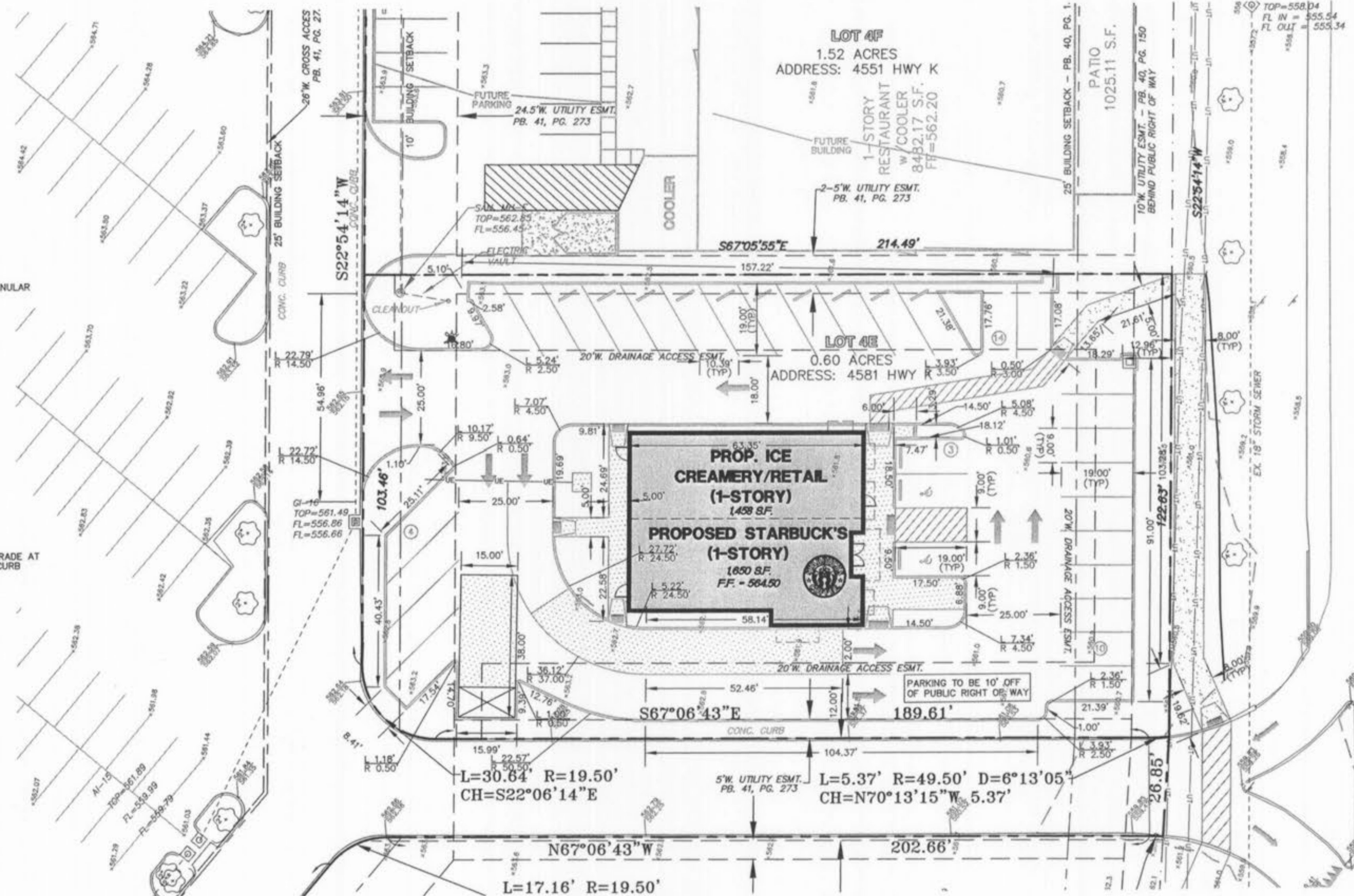


**ASPHALT PAVEMENT DETAIL**  
LIGHT DUTY PAVEMENT

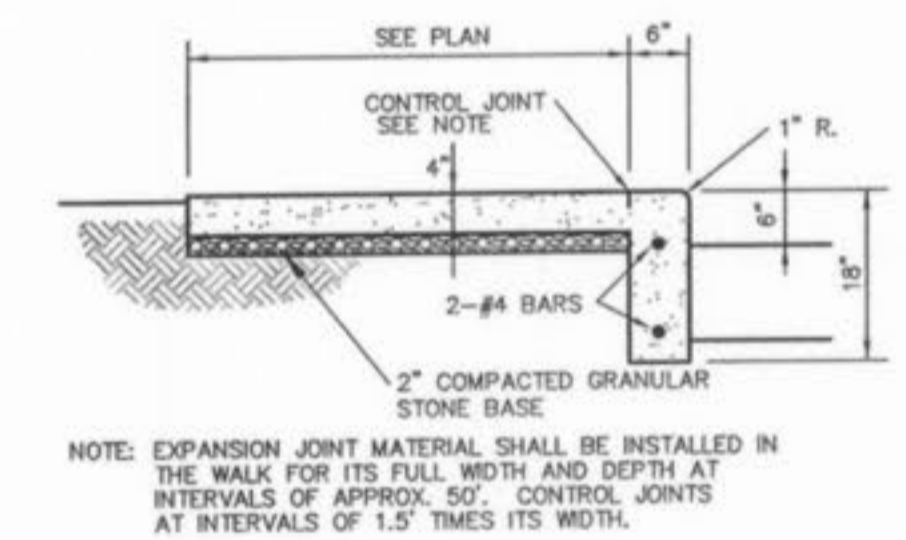


- NOTES:
- PROVIDE CONCRETE HANDICAP RAMP WHERE TRAIL INTERSECTS ACCESS DRIVES OR STREETS OR WHERE TRAIL INTERSECTS WITH CURBING (SEE PLAN).
  - PROVIDE STRIPING OR A COLORED TEXTURED PAVEMENT THROUGH THE ACCESS DRIVES OR STREETS INTO THE DEVELOPMENT.
  - MAXIMUM SLOPE OF THE PATH SHALL NOT EXCEED 8% AND 2% CROSS SLOPE PER CITY OF O'FALLON SPECIFICATIONS.
  - THE TRAIL SHALL BE CONSTRUCTED WITH A CONSISTENT SLOPE WITH VERTICAL CURVES A MINIMUM OF 50' IN LENGTH. AFTER FINAL COMPRESSION, THE SURFACE SHALL BE SMOOTH AND TRUE TO THE ESTABLISHED CROWN AND GRADE. ANY LOW OR DEFECTIVE PLACES SHALL IMMEDIATELY BE REMEDIED BY CUTTING OUT THE COURSE AT SUCH SPOTS AND REPLACING IT WITH FRESH HOT MIXTURE, WHICH SHALL BE IMMEDIATELY COMPACTED TO CONFORM WITH THE SURROUNDING AREA AND SHALL BE THOROUGHLY BONDED TO IT. THE FINISHED PAVEMENT SHALL BE SET FREE FROM DEPRESSIONS EXCEEDING ONE-EIGHTH INCH AS MEASURED WITH A TEN-FOOT STRAIGHT EDGE PARALLEL TO THE CENTERLINE OF THE TRAIL.

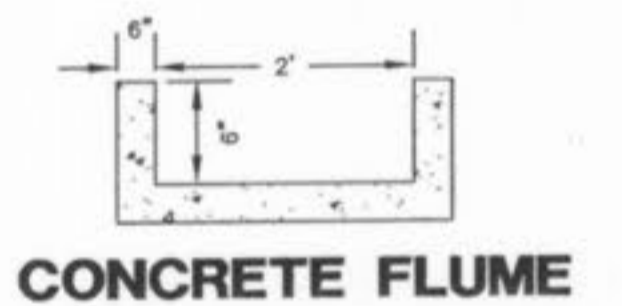
**MULTI-USE PATH DETAIL**  
NTS



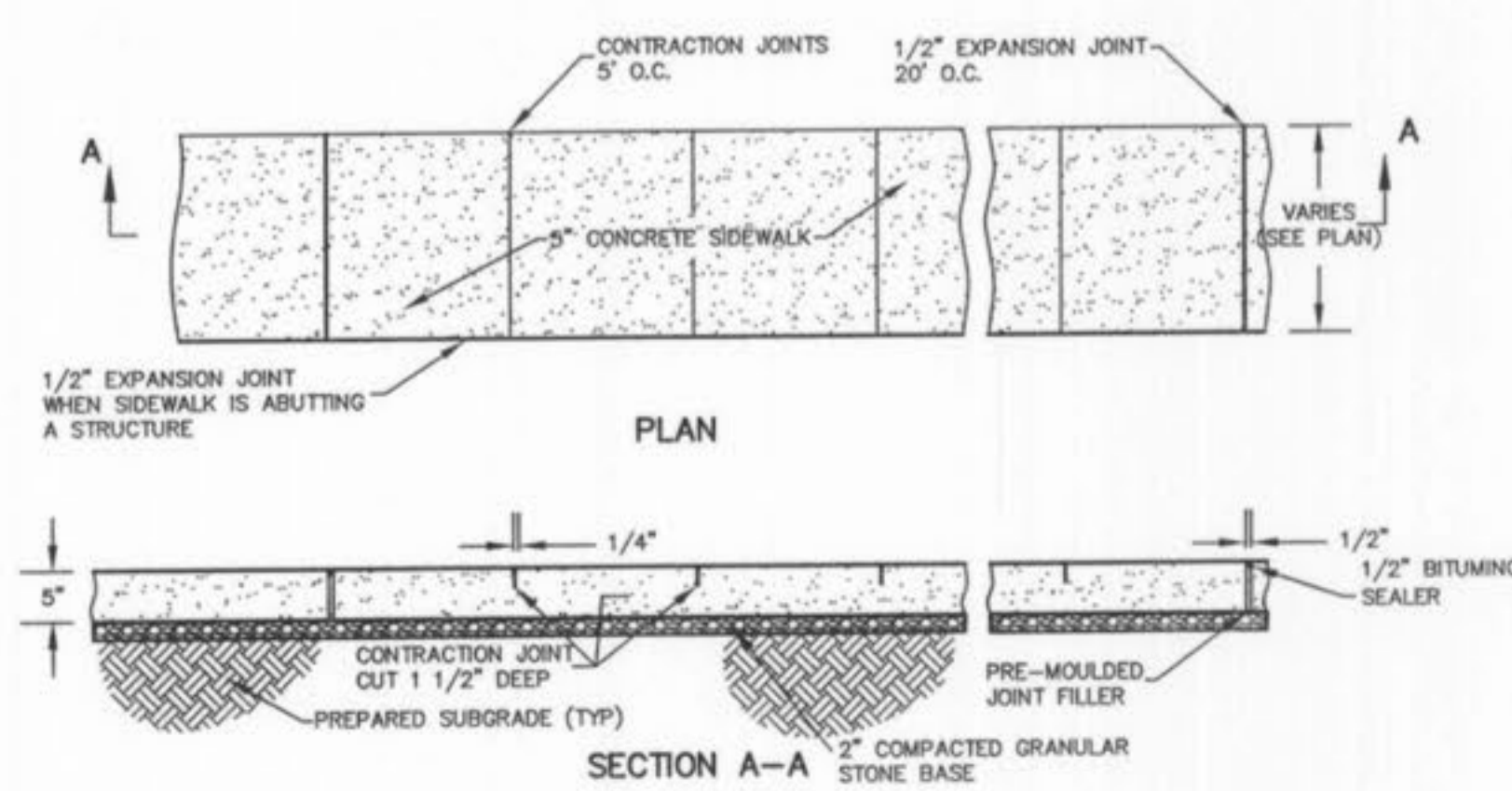
STATE HIGHWAY K (WIDTH VARIES)



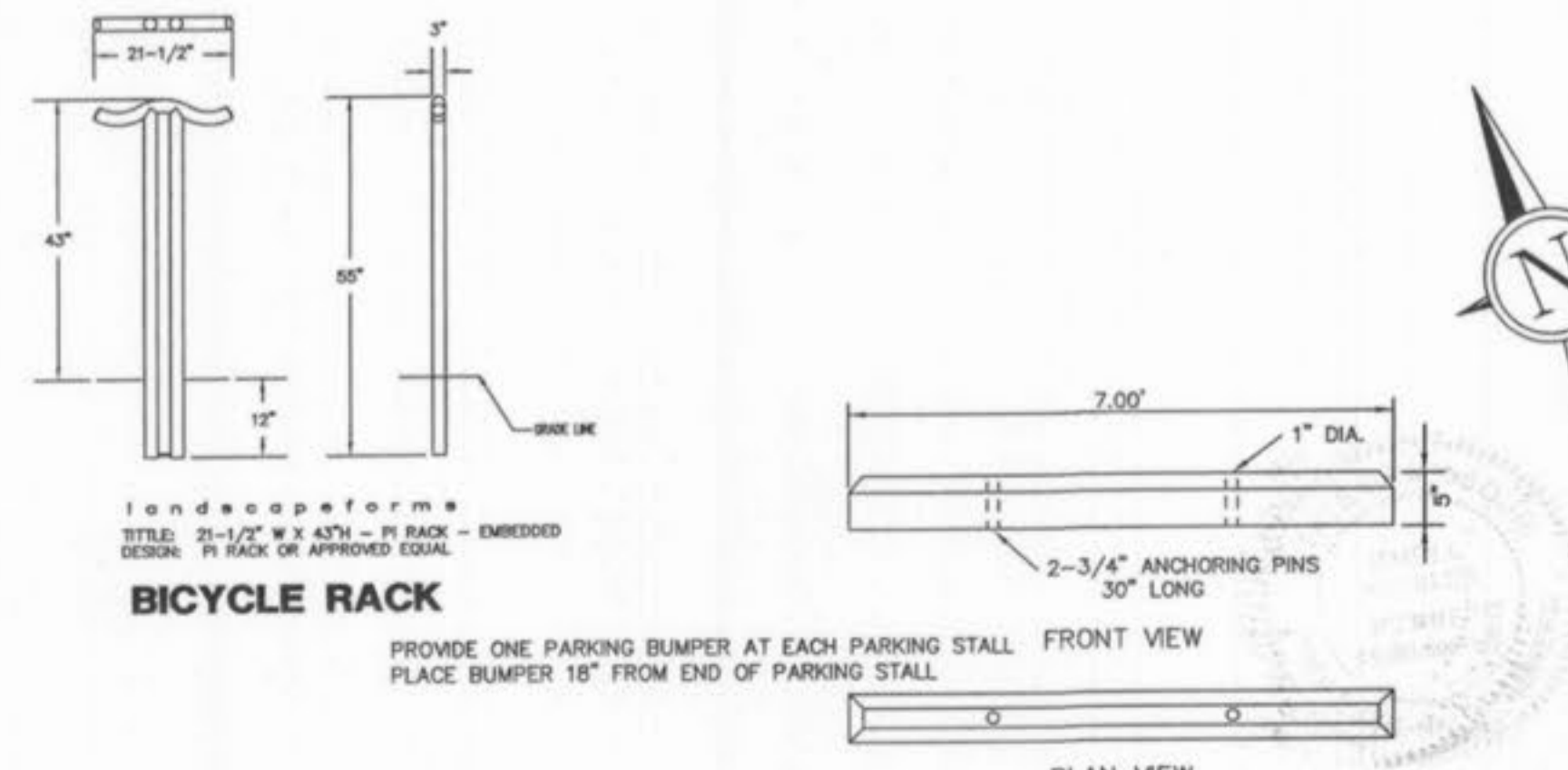
**INTEGRAL SIDEWALK & CURB**  
ALL SIDEWALKS TO BE CONSTRUCTED TO THE CITY OF O'FALLON AND ADA STANDARDS



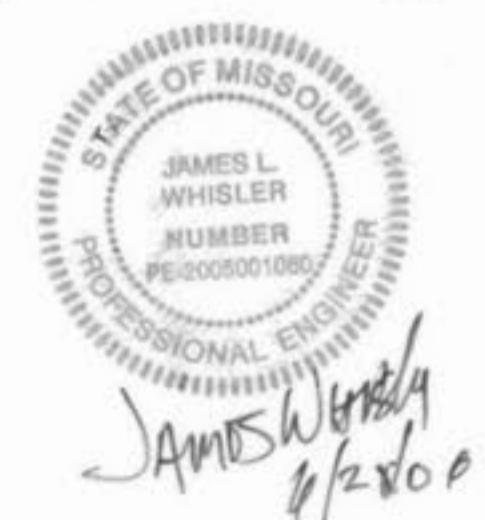
**CONCRETE FLUME**



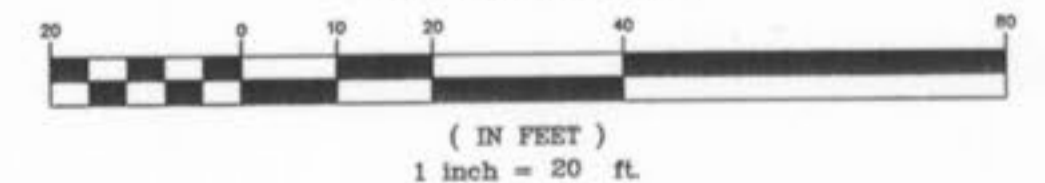
**DETAIL OF CONCRETE SIDEWALK**



**PRE-CAST PARKING BUMPER**



GRAPHIC SCALE



- 01/09/06 PER MDDOT COMMENTS
  - 12/22/05 PER CITY OF O'FALLON COMMENTS
  - 12/02/05 PER CITY OF O'FALLON COMMENTS
- CITY FILE #704.02

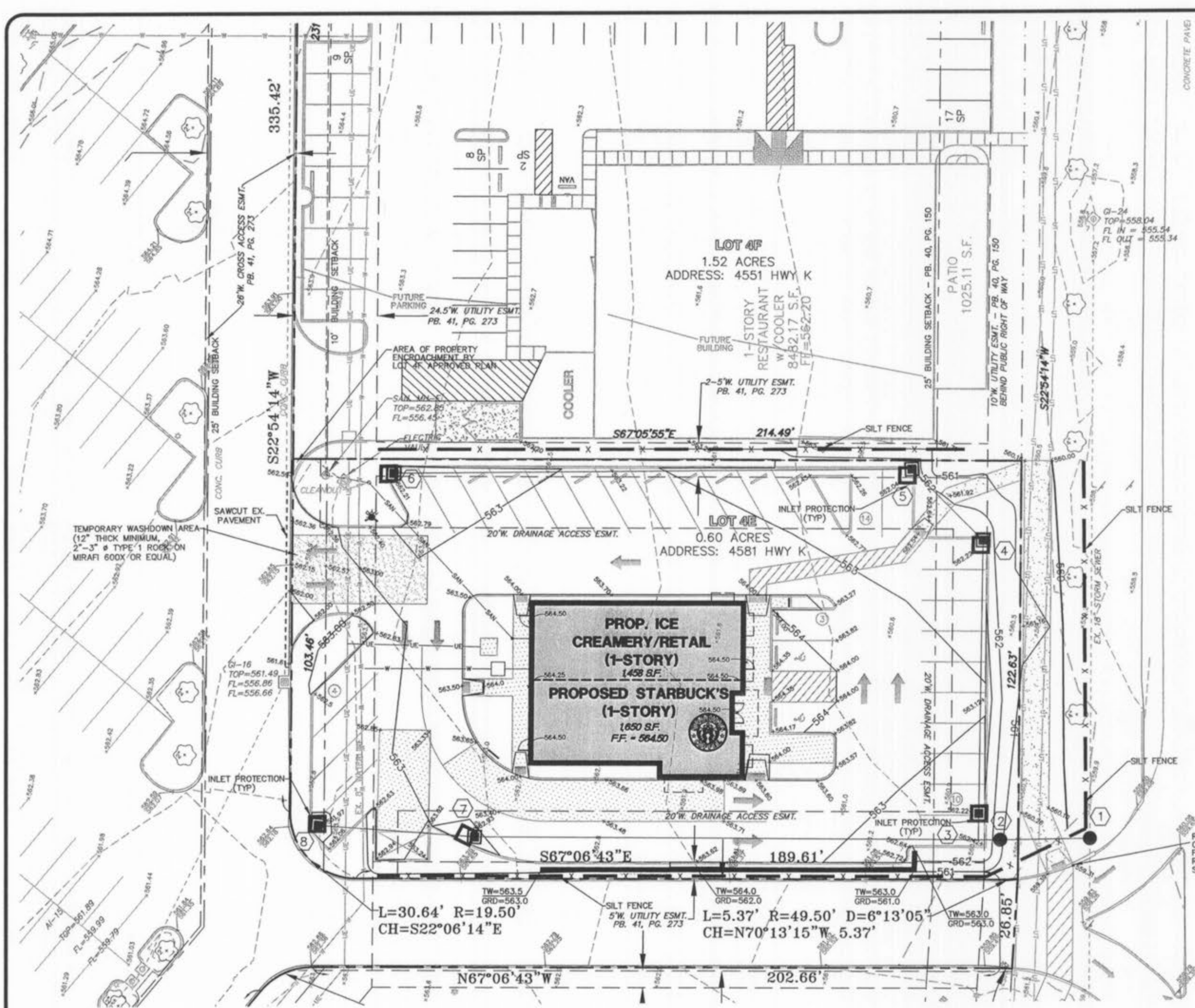
**LOT 4E OF LABOURE' CENTER  
SITE GEOMETRICS PLAN**

**J. R. GRIMES  
CONSULTING ENGINEERS, INC.**

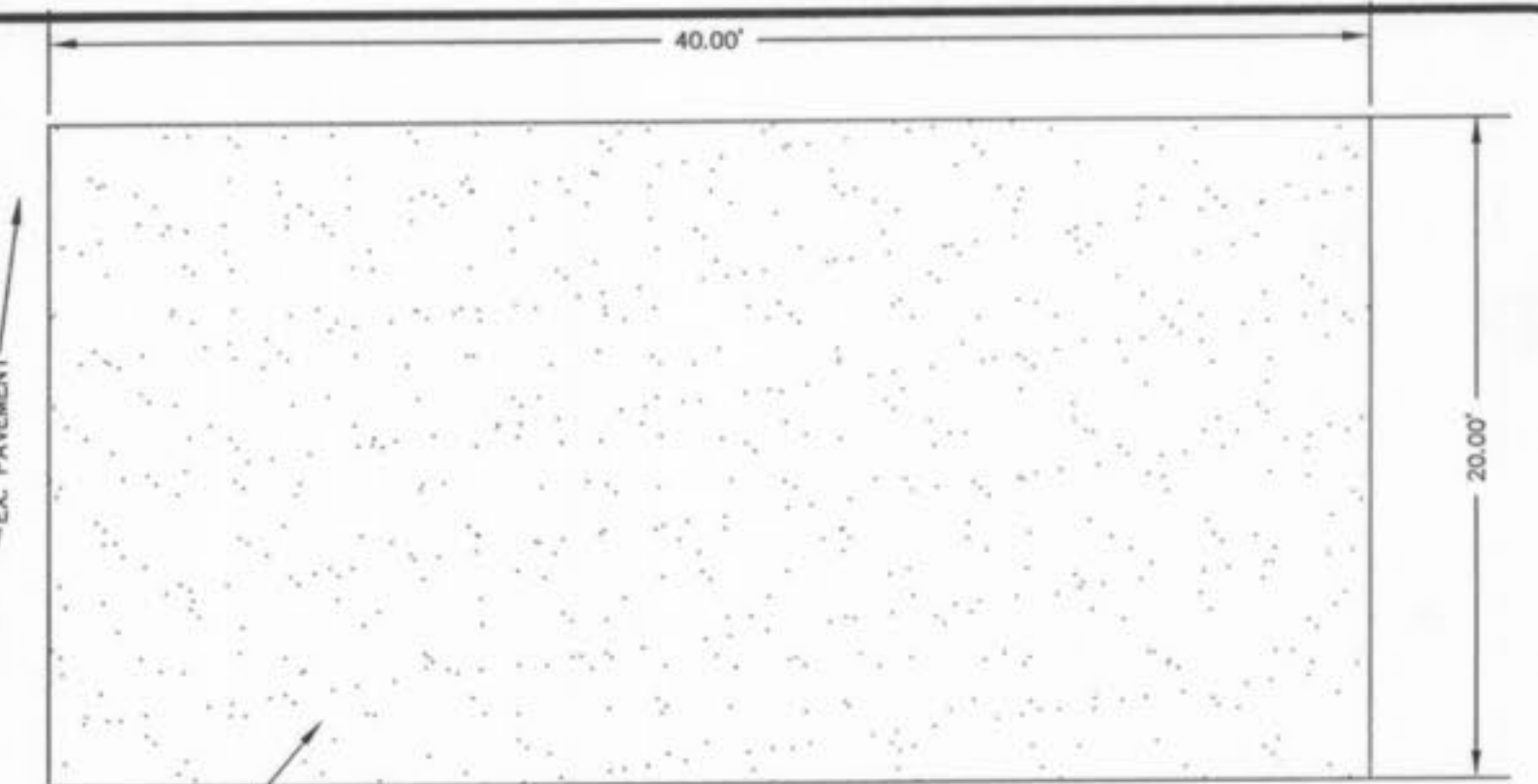
12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH. (314) 849-6100  
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PREPARED FOR:  
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35 N. CENTRAL, STE 400  
ST. LOUIS, MO 63105  
PH: (314) 863-6061  
FAX: (314) 863-6146

|          |          |             |          |             |        |
|----------|----------|-------------|----------|-------------|--------|
| DRWN BY: | DATE:    | CHECKED BY: | DATE:    | JOB NUMBER: | SHEET: |
| JSK      | 10/31/05 | LJM         | 10/31/05 | 1384        | C5     |



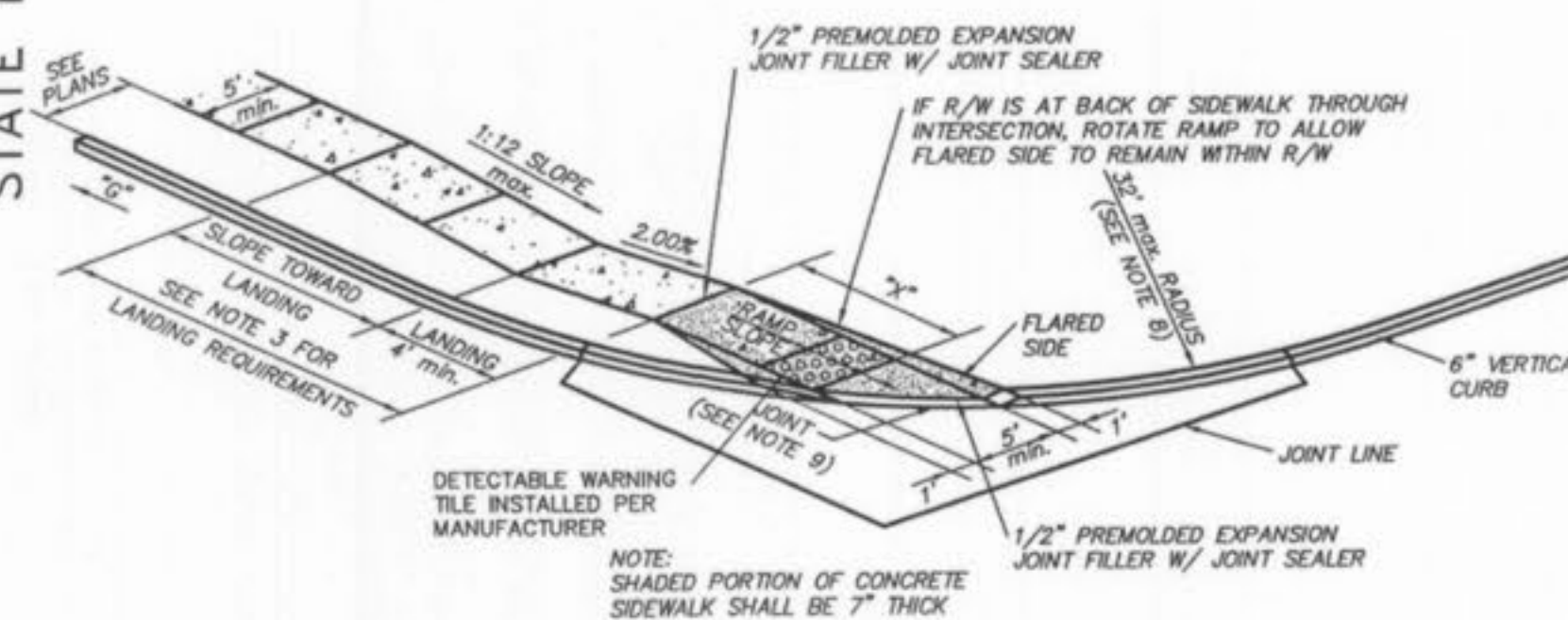
STATE HIGHWAY K (WIDTH VARIES)



12" THICK MINIMUM, 2"-3" # TYPE 1 ROCK ON MIRAFI 600X OR EQUAL  
**TEMPORARY WASHDOWN AREA**

| "G" GRADE ALONG CURB (%) | "X" MIN. LENGTH OF RAMP SLOPE (L.F.) |
|--------------------------|--------------------------------------|
| NEGATIVE (-) VALUES      | 6                                    |
| 0 TO +1                  | 7                                    |
| +1.01 TO +2              | 8                                    |
| +2.01 TO +3              | 10                                   |
| +3.01 TO +4              | 12                                   |
| GREATER THAN +4          | 15                                   |

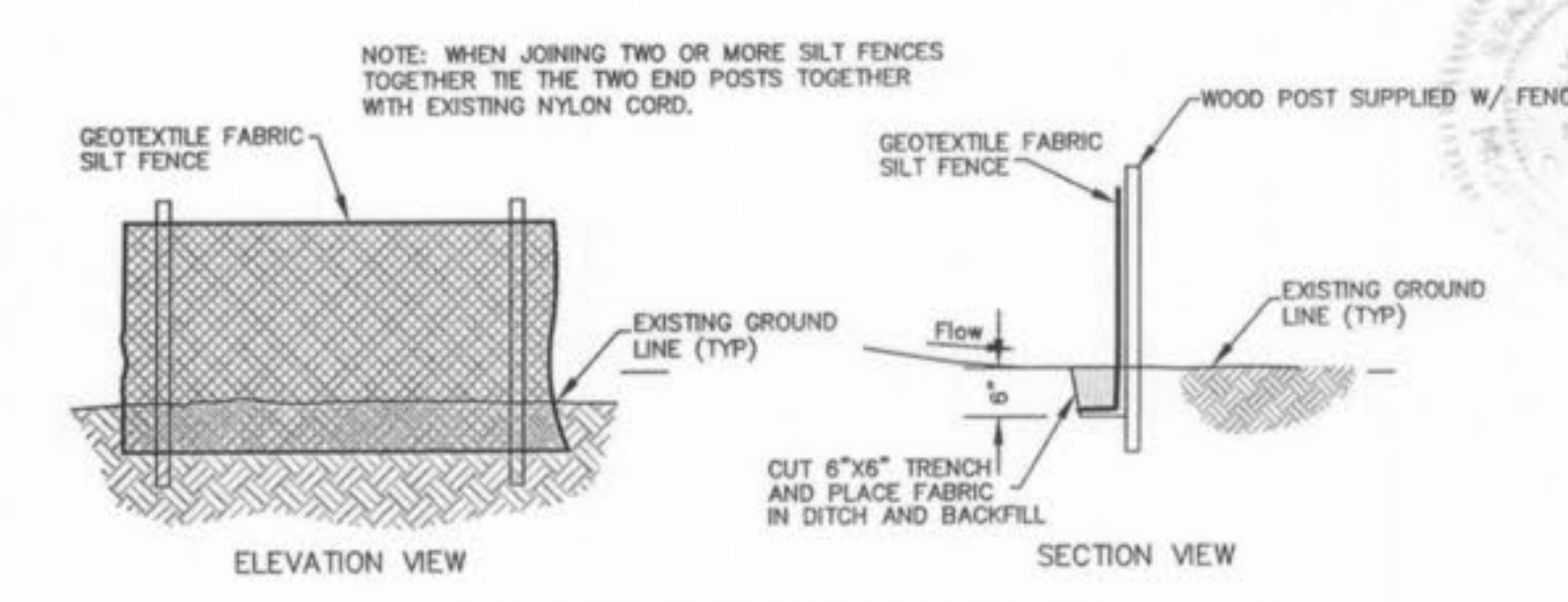
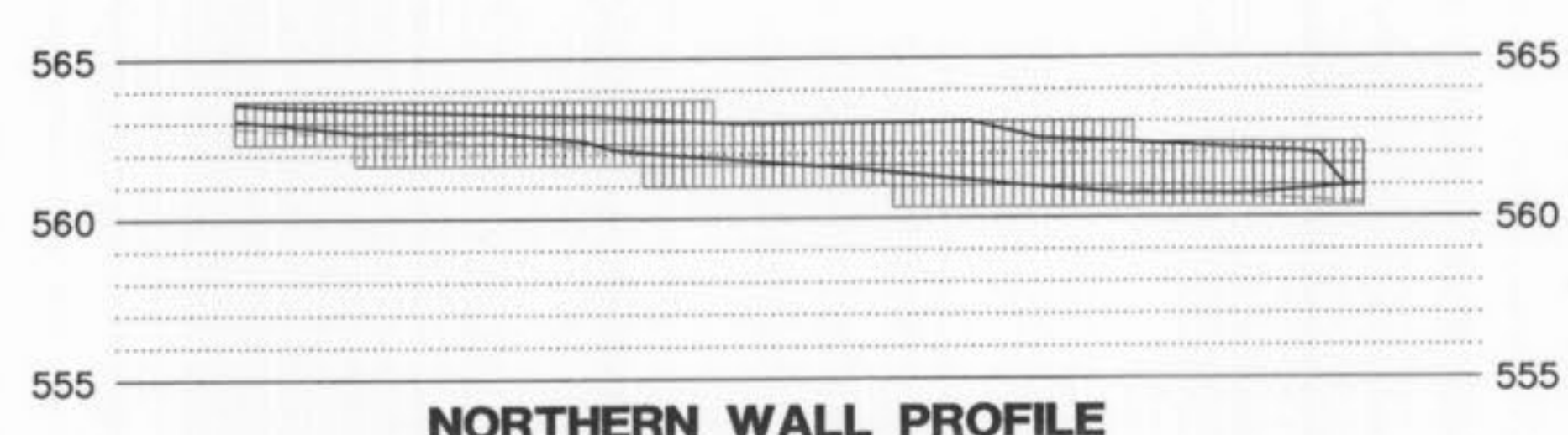
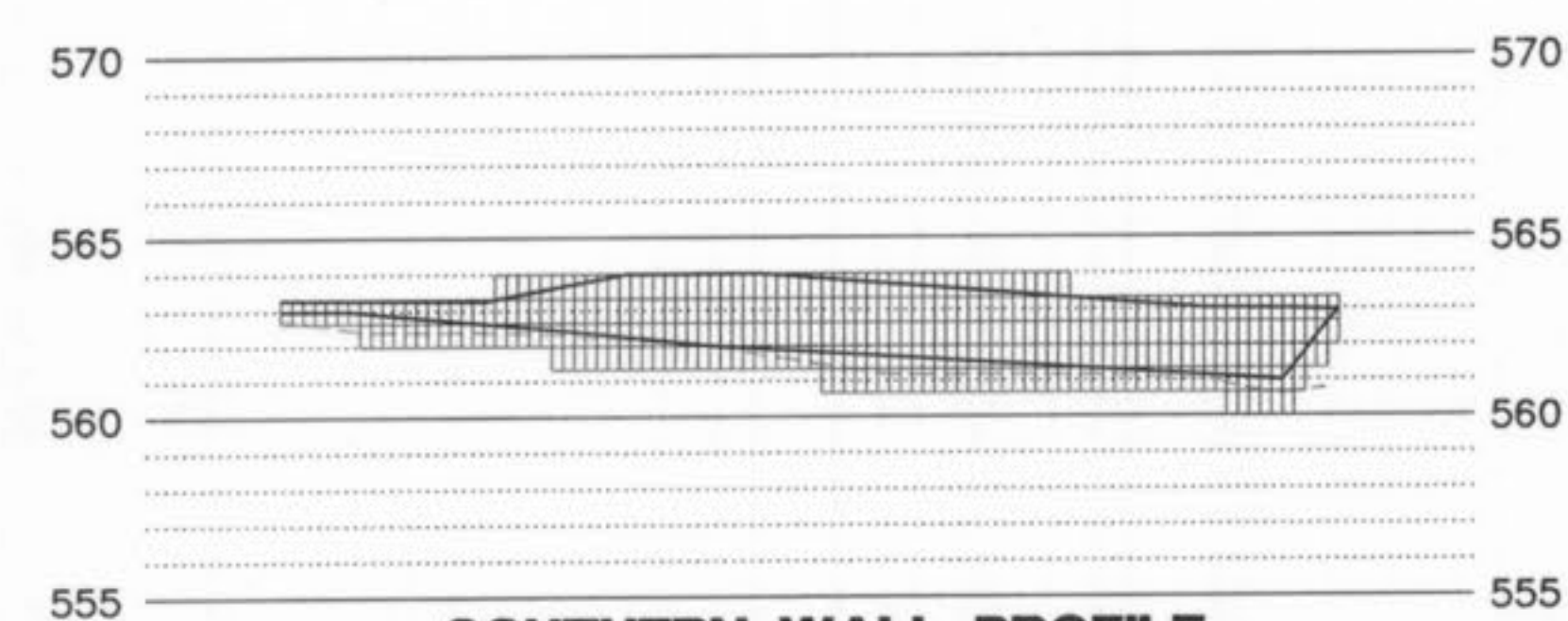
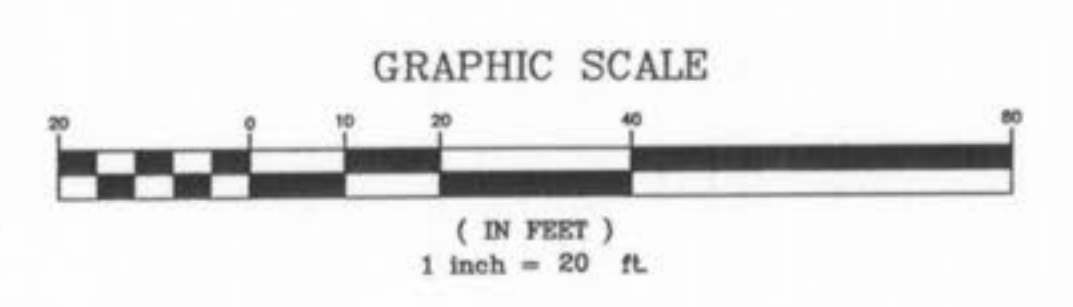
NOTE: POSITIVE (+) "G" - PROCEEDING AWAY FROM INTERSECTION AND UP A GRADE.  
NEGATIVE (-) "G" - PROCEEDING AWAY FROM INTERSECTION AND DOWN A GRADE.



**STRAIGHT CURB RAMP (TYPE 2) W/TRUNCATED DOMES**

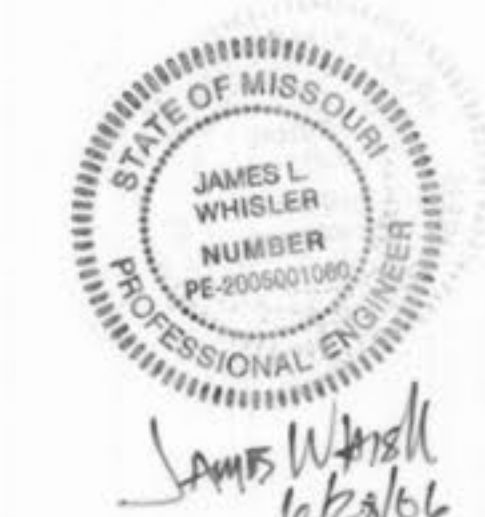
**CURB RAMP NOTES**

- DO NOT SCALE DRAWING. FOLLOW DIMENSIONS.
- SIDEWALKS AND SIDEWALK CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE DETAILS AND THE CURRENTLY APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG).
- PROVIDE A LANDING AT THE TOP OF EACH STRAIGHT RAMP WHEN THE GRADE ALONG CURB ("G") IS GREATER THAN +2% AND LESS THAN +7% FOR OTHER VALUES OF "G", INCLUDING ALL NEGATIVE (-) VALUES, NO LANDING IS REQUIRED.
- MINIMUM SIDEWALK WIDTH ALONG 6" VERTICAL CURB SHALL BE 5 FEET. MINIMUM SIDEWALK WIDTH ALONG 3" ROLLED CURB SHALL BE 4 FEET.
- MAXIMUM SIDEWALK CROSS SLOPE 0.02'/FT.
- ALL SIDEWALK SECTIONS SHALL BE 4" THICK, EXCEPT WHERE INDICATED OTHERWISE BY SHADED PORTIONS SHOWN ON DETAILS. ALL SIDEWALK SECTIONS AND CURB RAMPS, REGARDLESS OF THICKNESS, SHALL BE PAID FOR AS "CONCRETE SIDEWALK".
- WHERE CURB RAMP MEETS PAVEMENT, BULLNOSE WILL NOT BE PERMITTED.
- CONSTRUCT A DIAGONAL RAMP WHEN THE MAXIMUM CORNER RADIUS ALLOWED FOR A STRAIGHT RAMP IS EXCEEDED.
- IF INTEGRAL CONCRETE CURB IS CONSTRUCTED, STRIKE A DUMMY JOINT ACROSS BOTTOM OF RAMP AT CURB LINE. IF CONCRETE CURB IS DOWEL-ON, BLOCK OUT PAVEMENT TO PROVIDE FULL DEPTH CURB ACROSS RAMP FROM OUTER POINT OF CURB TAPER TO OUTER POINT OF CURB TAPER.
- FOR SIDEWALK LOCATIONS ON CUL-DE-SACS, REFER TO "PAVEMENT CONSTRUCTION DETAILS".
- FOR PAVEMENT LONGITUDINAL AND TRANSVERSE JOINTS AND DOWEL AND BAR REQUIREMENTS AND DIMENSIONS, REFER TO THE PAVEMENT CONSTRUCTION DETAILS FOR "JOINTS AND CURBS", STANDARD DRAWING C502.03.
- FOR ROADWAY CROSS SLOPES, PAVEMENT TYPES, AND THICKNESSES, REFER TO "STANDARD TYPICAL SECTION".
- A DETECTABLE WARNING CONSISTING OF TRUNCATED DOMES SHALL BE PLACED AT EACH CURB RAMP. IF CURB CUTS ARE USED TO ALLOW A CROSSWALK TO PASS THROUGH AN ISLAND, THEN DETECTABLE WARNINGS SHALL BE PLACED AT EACH EXIT POINT FROM THE ISLAND.
- THE DETECTABLE WARNING SHALL BE A PRE-MOLDED TILE CAST DIRECTLY INTO THE PLASTIC CONCRETE.
- THE WARNING SURFACE SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT OR DARK, OR DARK ON LIGHT.
- THE DETECTABLE WARNING SHALL BE PLACED WITHIN 6 TO 8 INCHES OF THE CURB LINE.
- THE DETECTABLE WARNING SHALL EXTEND 24 INCHES IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE RAMP, LANDING, OR BLENDED TRANSITION.
- TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.



**SILTATION CONTROL SILTFENCE DETAIL**

- 6/03/16/06 PER SEWER LOCATION COORDINATION
  - 5/01/09/06 PER MDDOT COMMENTS
  - 4/12/22/05 PER CITY OF O'FALLON COMMENTS
  - 3/12/02/05 PER CITY OF O'FALLON COMMENTS
- CITY FILE #704.02

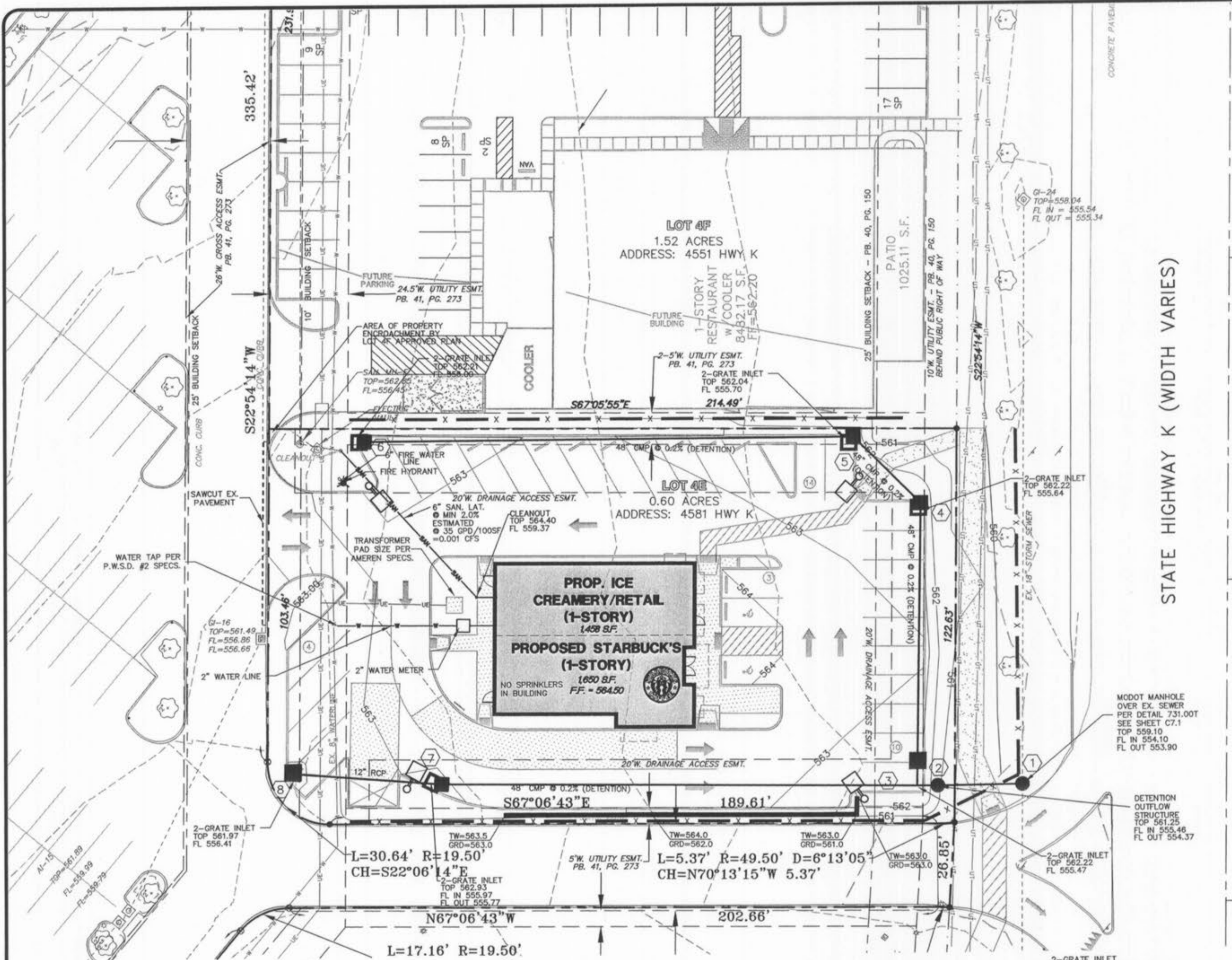


**LOT 4E OF LABOURE' CENTER SITE GRADING PLAN**

**J. R. GRIMES CONSULTING ENGINEERS, INC.**  
12300 OLD TESSON ROAD SUITE 3000 ST. LOUIS, MO 63128 PH: (314) 849-6100 FAX (314) 849-6010

|               |                |                 |                |                  |           |
|---------------|----------------|-----------------|----------------|------------------|-----------|
| DRAWN BY: JSK | DATE: 10/31/05 | CHECKED BY: LJM | DATE: 10/31/05 | JOB NUMBER: 1384 | SHEET: C6 |
|---------------|----------------|-----------------|----------------|------------------|-----------|

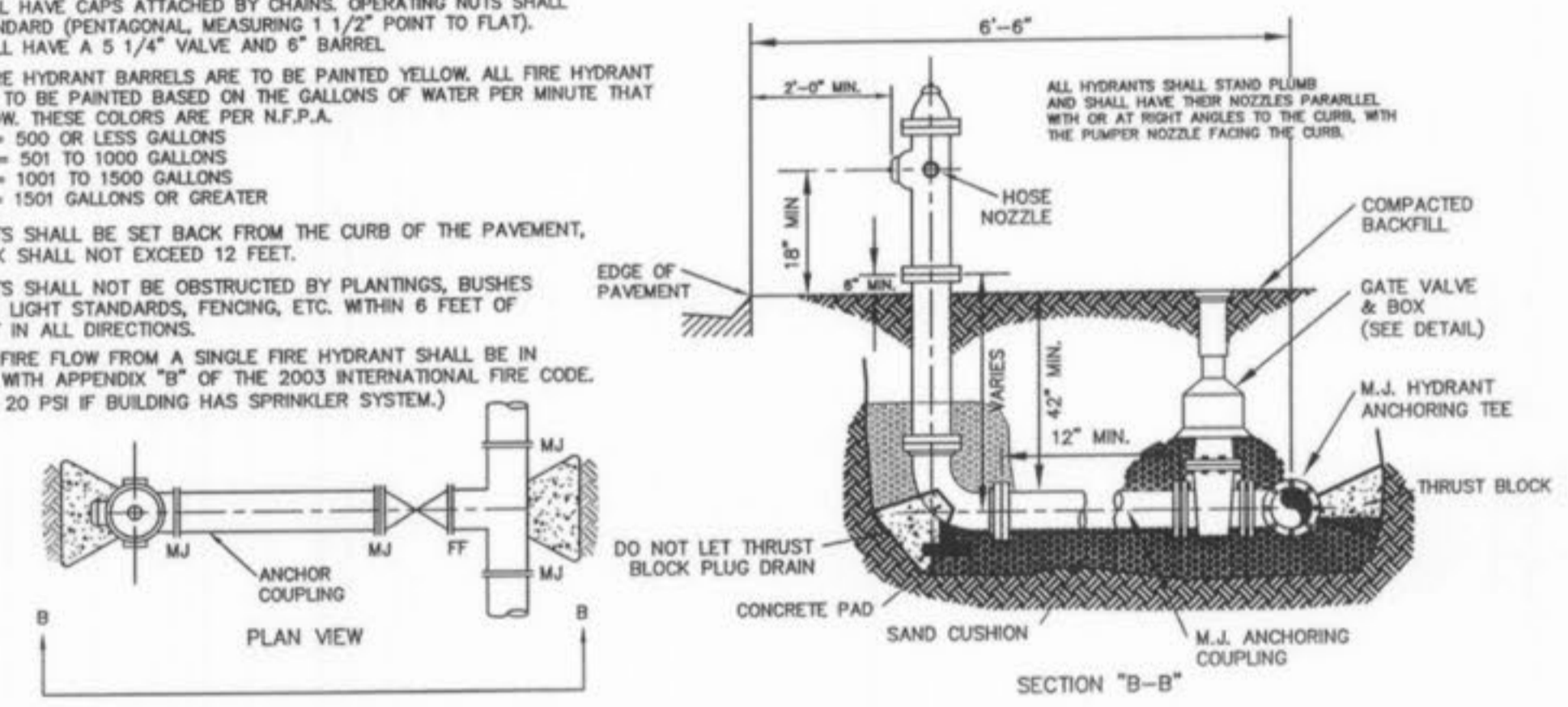
PREPARED FOR:  
LABOURE' 4E, L.L.C.  
35 N. CENTRAL, STE 400  
ST. LOUIS, MO 63105  
PH: (314) 863-6061  
FAX: (314) 863-6146



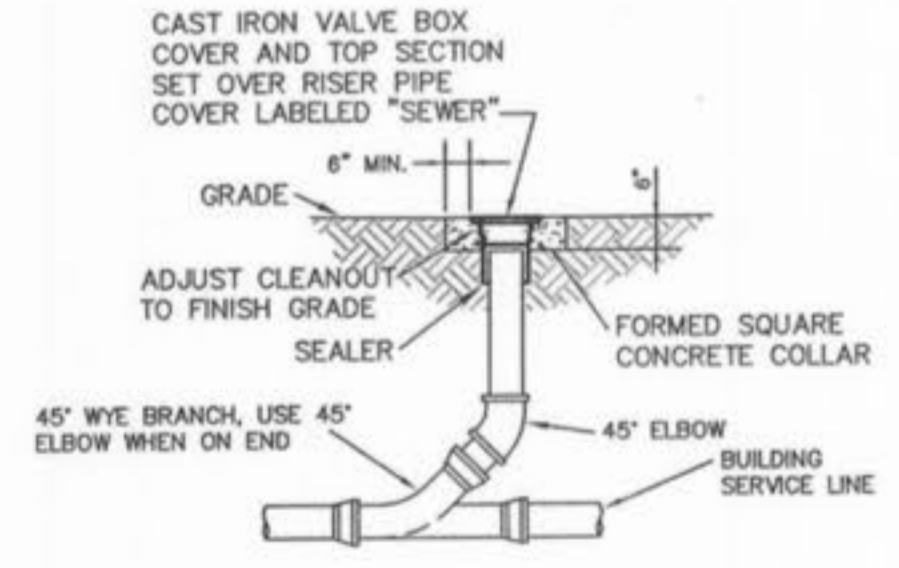
STATE HIGHWAY K (WIDTH VARIES)

**FIRE HYDRANTS SHALL MEET THE FOLLOWING REQUIREMENTS:**

- CENTERLINE OF THE 4 1/2 INCH HYDRANT OUTLET SHALL BE A MINIMUM OF 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE FINISH GRADE.
- THE TYPE AND DESIGN OF THE FIRE HYDRANT SHALL BE APPROVED, IF DIFFERENT THAN THE ALREADY APPROVED TYPE AND DESIGN THAT IS BEING USED BY THE LOCAL FIRE PROTECTION DISTRICT THE FIRE HYDRANT SHALL BE PROVIDED WITH TWO 2 1/2" HOSE NOZZLES AND ONE 4 1/2" PUMPER NOZZLE, ALL HAVING NATIONAL STANDARD HOSE THREADS. NOZZLES SHALL HAVE CAPS ATTACHED BY CHAINS, OPERATING NUTS SHALL BE ANWA STANDARD (PENTAGONAL, MEASURING 1 1/2" POINT TO FLAT). HYDRANT SHALL HAVE A 5 1/4" VALVE AND 6" BARREL.
- ALL PUBLIC FIRE HYDRANT BARRELS ARE TO BE PAINTED YELLOW. ALL FIRE HYDRANT BONNETS ARE TO BE PAINTED BASED ON THE GALLONS OF WATER PER MINUTE THAT THEY WILL FLOW. THESE COLORS ARE PER N.F.P.A.
  - A) RED = 500 OR LESS GALLONS
  - B) ORANGE = 501 TO 1000 GALLONS
  - C) GREEN = 1001 TO 1500 GALLONS
  - D) BLUE = 1501 GALLONS OR GREATER
- FIRE HYDRANTS SHALL BE SET BACK FROM THE CURB OF THE PAVEMENT, THE SET BACK SHALL NOT EXCEED 12 FEET.
- FIRE HYDRANTS SHALL NOT BE OBSTRUCTED BY PLANTINGS, BUSHES TREES, SIGNS, LIGHT STANDARDS, FENCING, ETC. WITHIN 6 FEET OF ANY HYDRANT IN ALL DIRECTIONS.
- THE MINIMUM FIRE FLOW FROM A SINGLE FIRE HYDRANT SHALL BE IN ACCORDANCE WITH APPENDIX "B" OF THE 2003 INTERNATIONAL FIRE CODE. (1500 GPM @ 20 PSI IF BUILDING HAS SPRINKLER SYSTEM.)

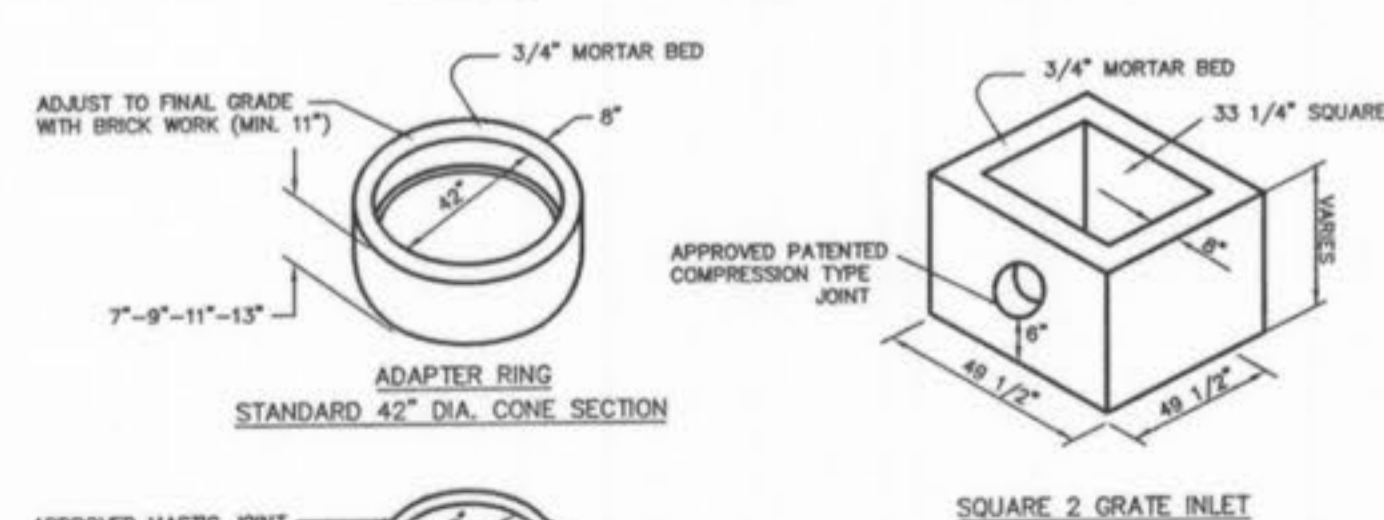
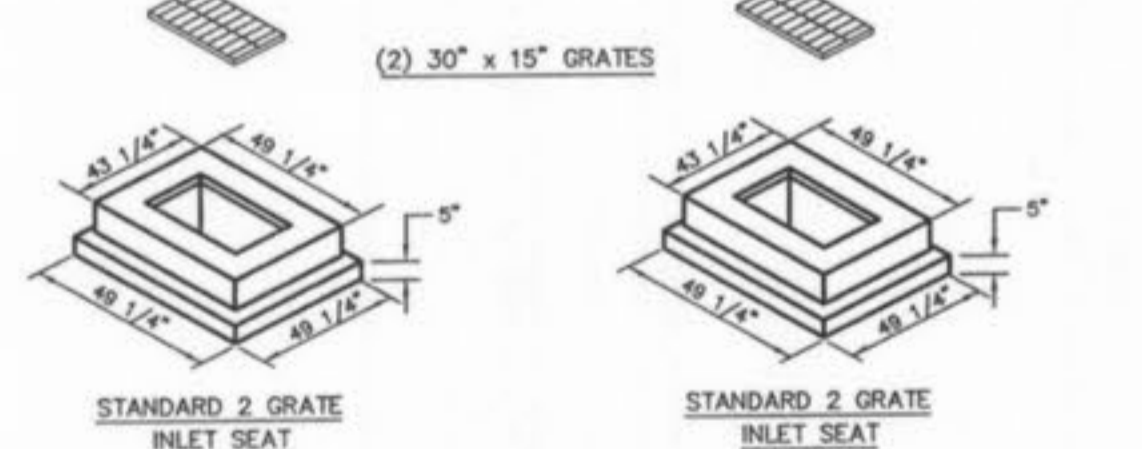


**FIRE HYDRANT DETAILS**

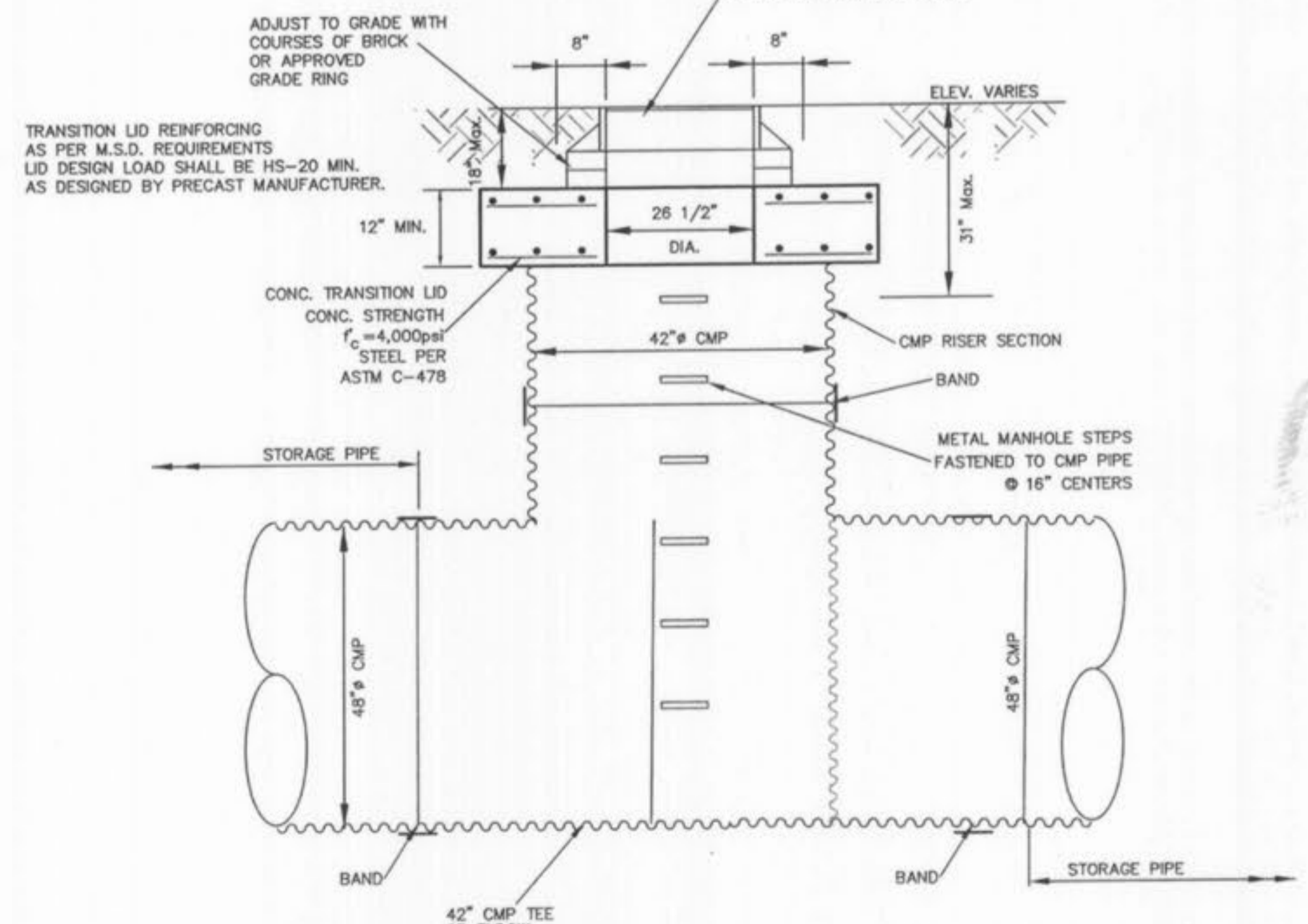


**SEWER CLEANOUT**

NOTE: PROVIDE MARKING ON ALL STORM SEWER INLETS. EPOXY TO BE USED AS ADHESIVE. EITHER THE ACP INTERNATIONAL (WWW.ACPINTERNATIONAL.COM) CRYSTAL CAP STYLE "NO DUMPING DRAINS TO WATERWAYS" PART# SD-W-CC OR DAS MANUFACTURING, INC. (WWW.DASMANUFACTURING.COM) STANDARD STYLE "NO DUMPING DRAINS TO STREAM" PART# SDS WILL BE APPROVED.



NOTE: INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED, IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.



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35 N. CENTRAL, STE 400  
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**2 GRATE INLETS**  
PRE-CAST CONCRETE  
STRUCTURE #8

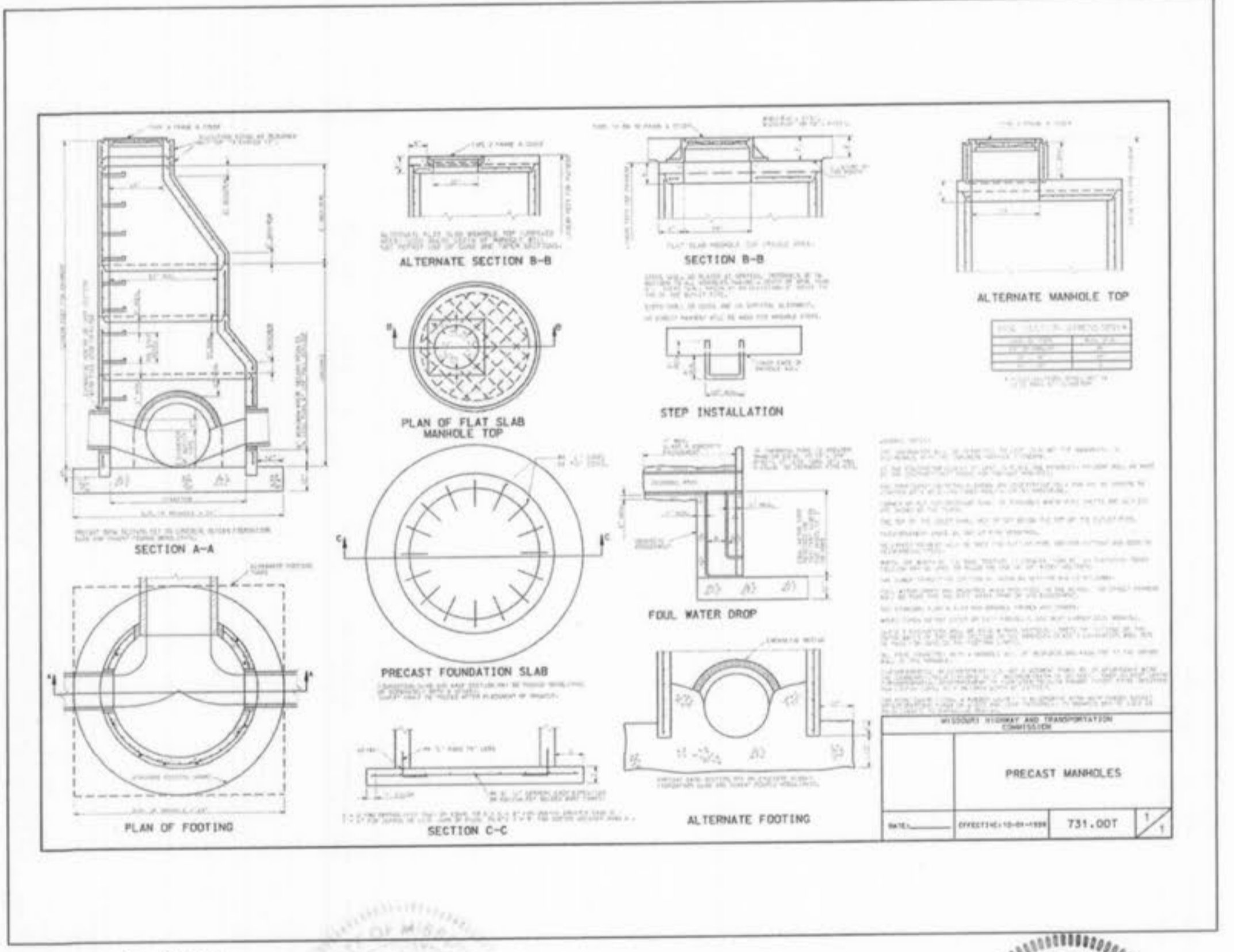
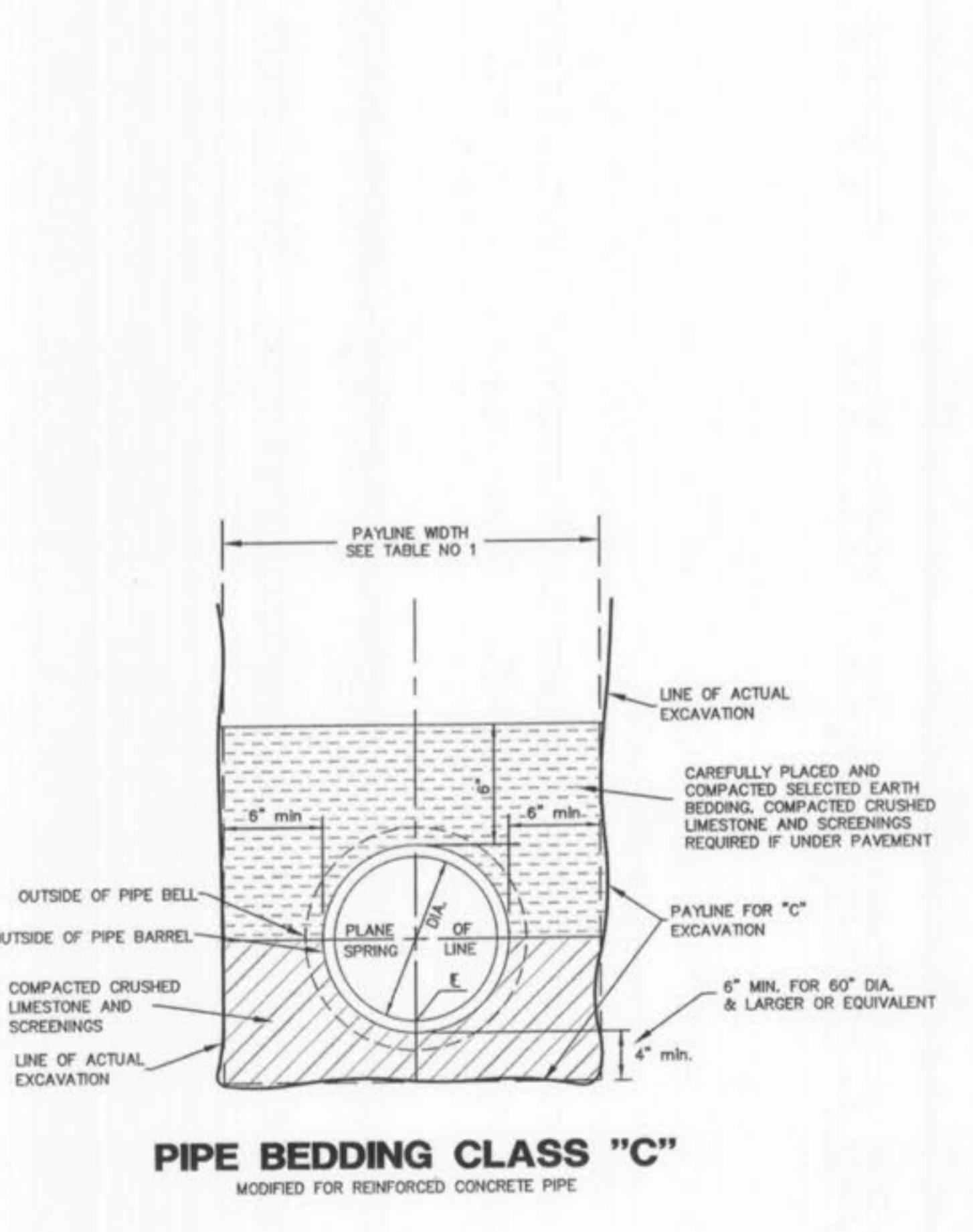
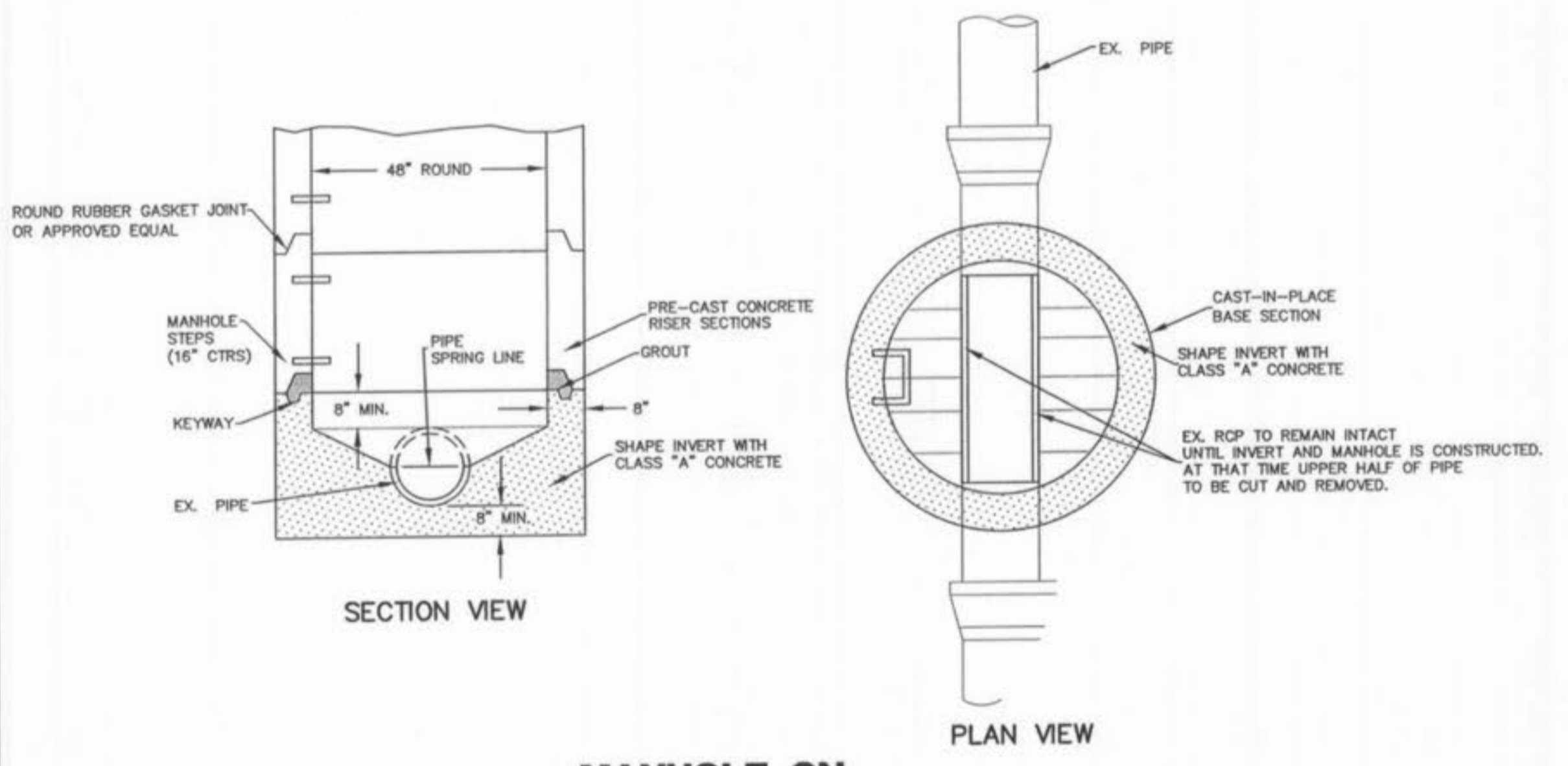
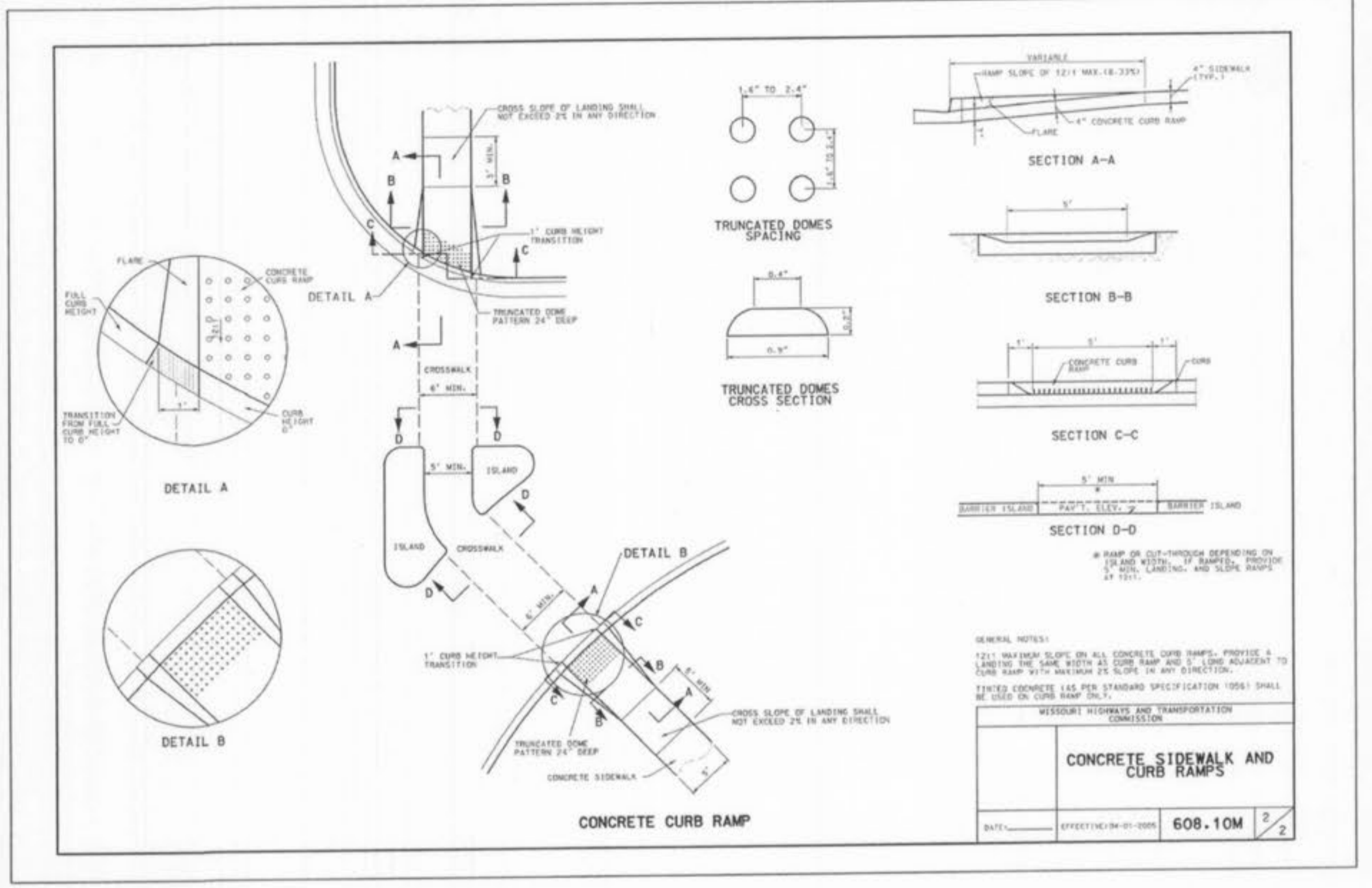
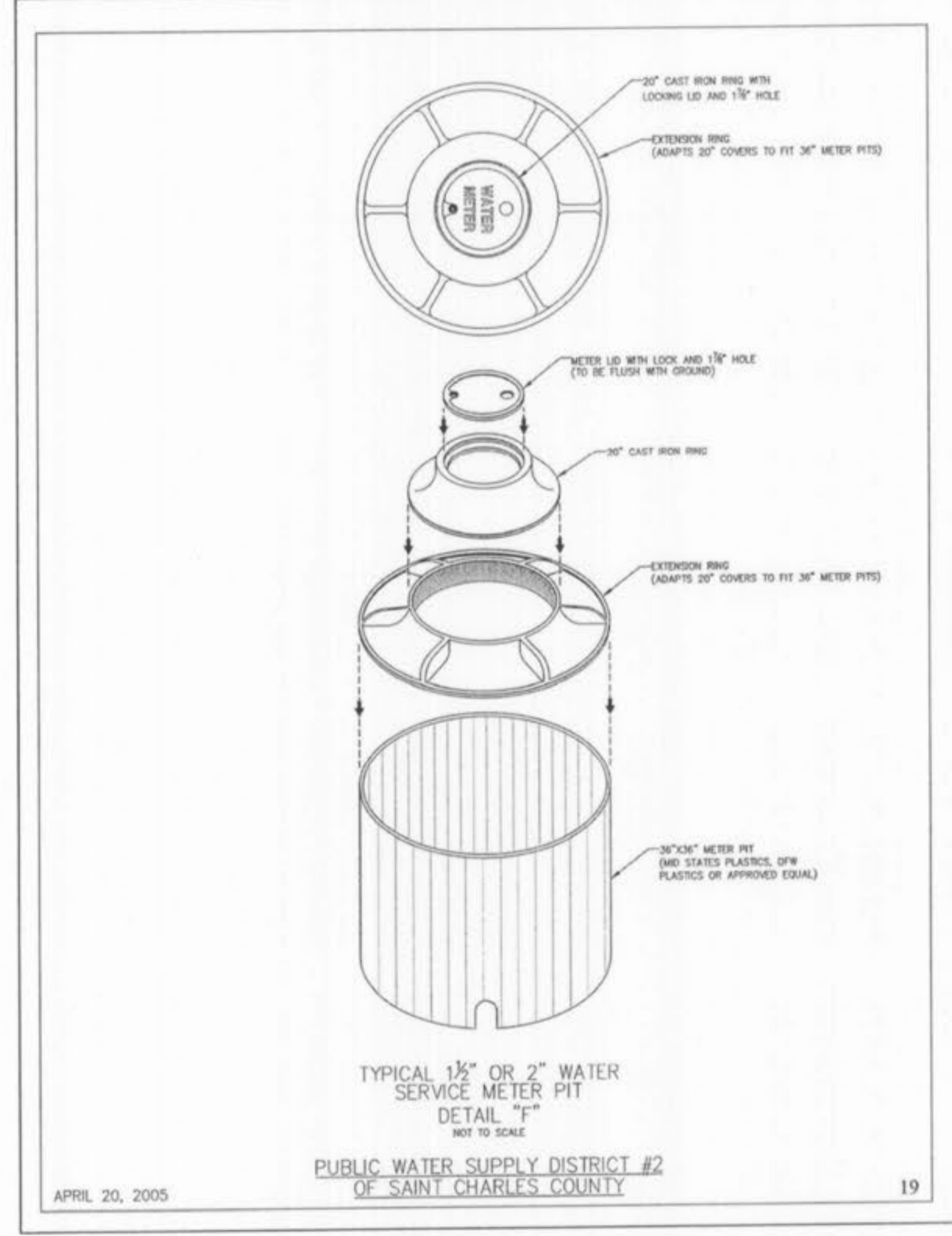
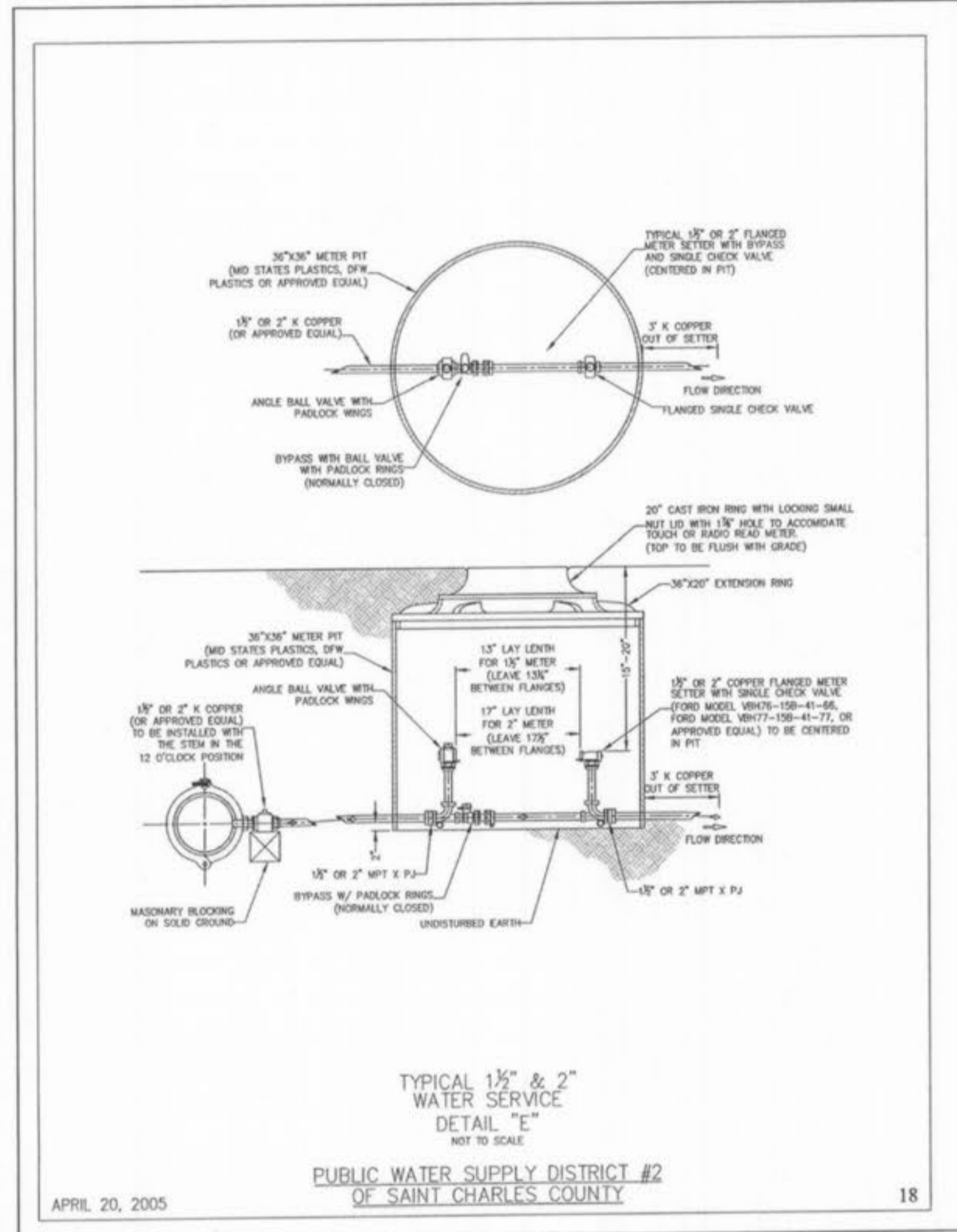


- 5 01/09/06 PER MODOT COMMENTS
- 4 12/22/05 PER CITY OF O'FALLON COMMENTS
- 3 12/20/05 PER P.W.S.D.#2 COMMENTS
- 2 12/06/05 PER FIRE MARSHALL COMMENTS
- 1 12/02/05 PER CITY OF O'FALLON COMMENTS

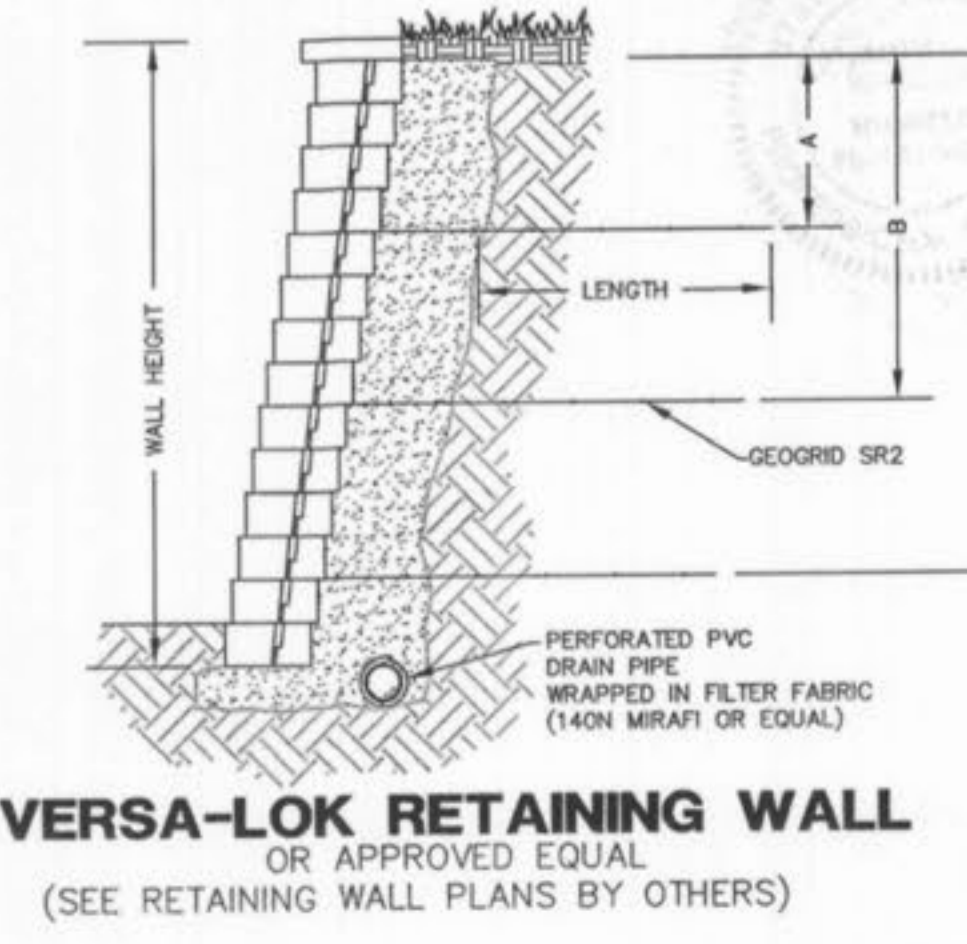
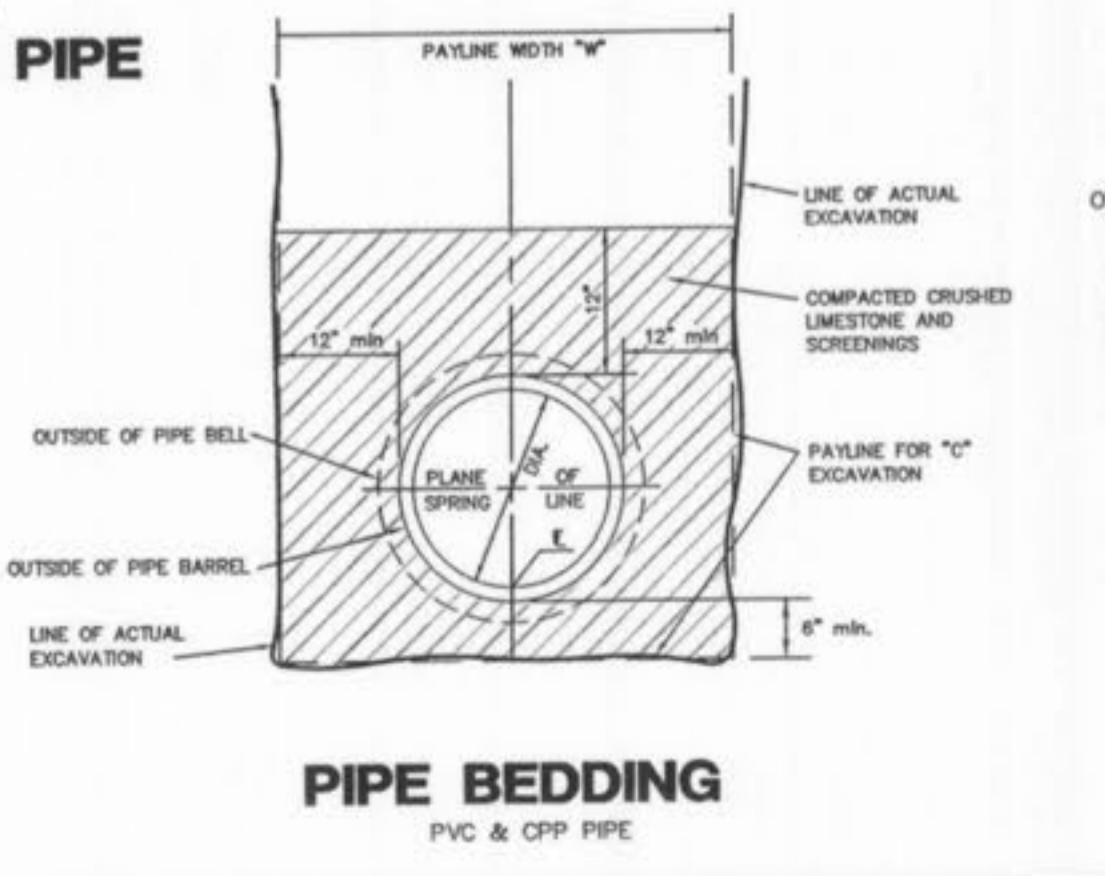
CITY FILE #704.02

|                                   |          |             |          |
|-----------------------------------|----------|-------------|----------|
| <b>LOT 4E OF LABOURE' CENTER</b>  |          |             |          |
| <b>SITE UTILITY PLAN</b>          |          |             |          |
| <b>J. R. GRIMES</b>               |          |             |          |
| <b>CONSULTING ENGINEERS, INC.</b> |          |             |          |
| DRWN BY:                          | DATE:    | CHECKED BY: | DATE:    |
| JSK                               | 10/31/05 | LJM         | 10/31/05 |
| JOB NUMBER:                       |          | SHEET:      |          |
| 1384                              |          | C7          |          |

12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH: (314) 849-6100  
FAX: (314) 849-6010



PREPARED FOR:  
LABOURE' 4E, L.L.C.  
35 N. CENTRAL, STE 400  
ST. LOUIS, MO 63105  
PH: (314) 863-6061  
FAX: (314) 863-6146



- △ 01/09/06 PER MODOT COMMENTS
- △ 12/22/05 PER CITY OF FALLON COMMENTS
- △ 12/20/05 PER P.W.S.D.#2 COMMENTS



**LOT 4E OF LABOURE' CENTER**  
**SITE DETAILS**

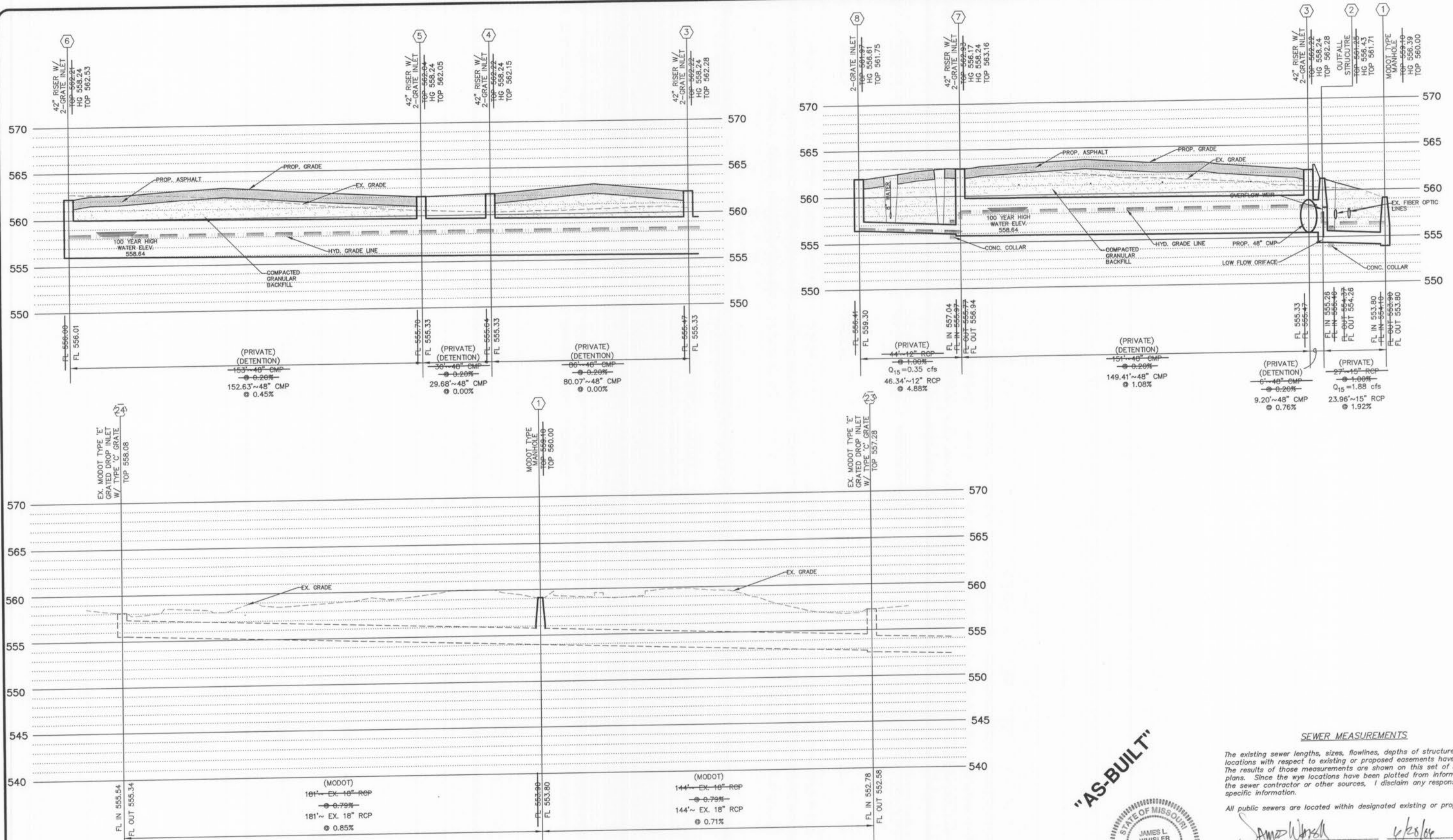
**J. R. GRIMES**  
**CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH: (314) 849-6100  
FAX (314) 849-6100

DATE: 10/31/05 CHECKED BY: LJM DATE: 10/31/05 JOB NUMBER: 1384 SHEET: C7.1

CITY FILE #704.02





J.R. GRIMES  
CONSULTING ENGINEERS, INC.

Lot 4E of Laboure' Center

CALC. BY: JSK  
DATE: 10/31/2005  
REVISED: 12/7/2005

| STRUCTURE                    | UPR | LOWER  | FLOWLINE |       | LENGTH | GRADE | PIPE  | "n"  | Q     | TOTAL | V    | Vh   | PIPE LOSSES (ft.) |           |      |        | STRUCTURE LOSSES (ft.) |        | HYD. ELEV. |         | HYD    | PIPE | DEPTH | FULL FLOW | GIVEN |       |        |
|------------------------------|-----|--------|----------|-------|--------|-------|-------|------|-------|-------|------|------|-------------------|-----------|------|--------|------------------------|--------|------------|---------|--------|------|-------|-----------|-------|-------|--------|
|                              |     |        | UPR      | LOWER |        |       |       |      |       |       |      |      | FT.               | ft. / ft. | SIZE | FACTOR | c.f.s.                 | Q      | ft.p.s.    | ft.     |        |      |       |           |       | FRIC. | CURVE  |
| HYDRAULIC DATA 15 YEAR STORM |     |        |          |       |        |       |       |      |       |       |      |      |                   |           |      |        |                        |        |            |         |        |      |       |           |       |       |        |
| 23                           | 23A | 552.58 | 547.09   | 192   | 0.0286 | 21    | 0.013 | 3.39 | 13.33 | 5.49  | 0.47 | 1.33 | 0.00              | 1.33      | 0.10 | 0.00   | 0.10                   | 553.53 | 548.44     | 0.00694 | 557.28 | 3.75 | 26.79 | 0.50      | 0.85  | 5.54  | 548.44 |
| 1                            | 23  | 553.80 | 552.78   | 144   | 0.0071 | 18    | 0.013 | 8.06 | 9.94  | 5.62  | 0.49 | 1.29 | 0.00              | 1.29      | 0.49 | 0.00   | 0.49                   | 555.97 | 554.19     | 0.00895 | 560.00 | 4.03 | 8.84  | 1.12      | 1.41  | 5.62  |        |
| 2                            | 1   | 554.26 | 553.80   | 24    | 0.0192 | 15    | 0.013 | 1.88 | 1.88  | 1.19  | 0.02 | 0.01 | 0.00              | 0.01      | 0.00 | 0.02   | 0.02                   | 555.99 | 555.97     | 0.00051 | 561.71 | 5.72 | 8.95  | 0.21      | 0.38  | 1.53  |        |
| 8                            | 7   | 559.30 | 557.04   | 46    | 0.0488 | 12    | 0.013 | 0.35 | 0.35  | 0.21  | 0.00 | 0.00 | 0.00              | 0.00      | 0.00 | 0.00   | 0.00                   | 559.43 | 557.17     | 0.00002 | 561.75 | 2.32 | 7.87  | 0.04      | 0.13  | 0.45  | 558.24 |

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LABOURE' 4E, L.L.C.  
35 N. CENTRAL, STE 400  
ST. LOUIS, MO 63105  
PH: (314) 863-6061  
FAX: (314) 863-6146



**"AS-BUILT"**

SEWER MEASUREMENTS

The existing sewer lengths, sizes, flowlines, depths of structures and sewers and locations with respect to existing or proposed easements have been measured. The results of those measurements are shown on this set of Final Measurement plans. Since the wye locations have been plotted from information provided by the sewer contractor or other sources, I disclaim any responsibility for that specific information.

All public sewers are located within designated existing or proposed easements.

*James L. Whisler*  
P.E./L.S. DATE 12/8/05

01/09/06 PER MODOT COMMENTS  
12/02/05 PER CITY OF FALLON COMMENTS

CITY FILE #704.02

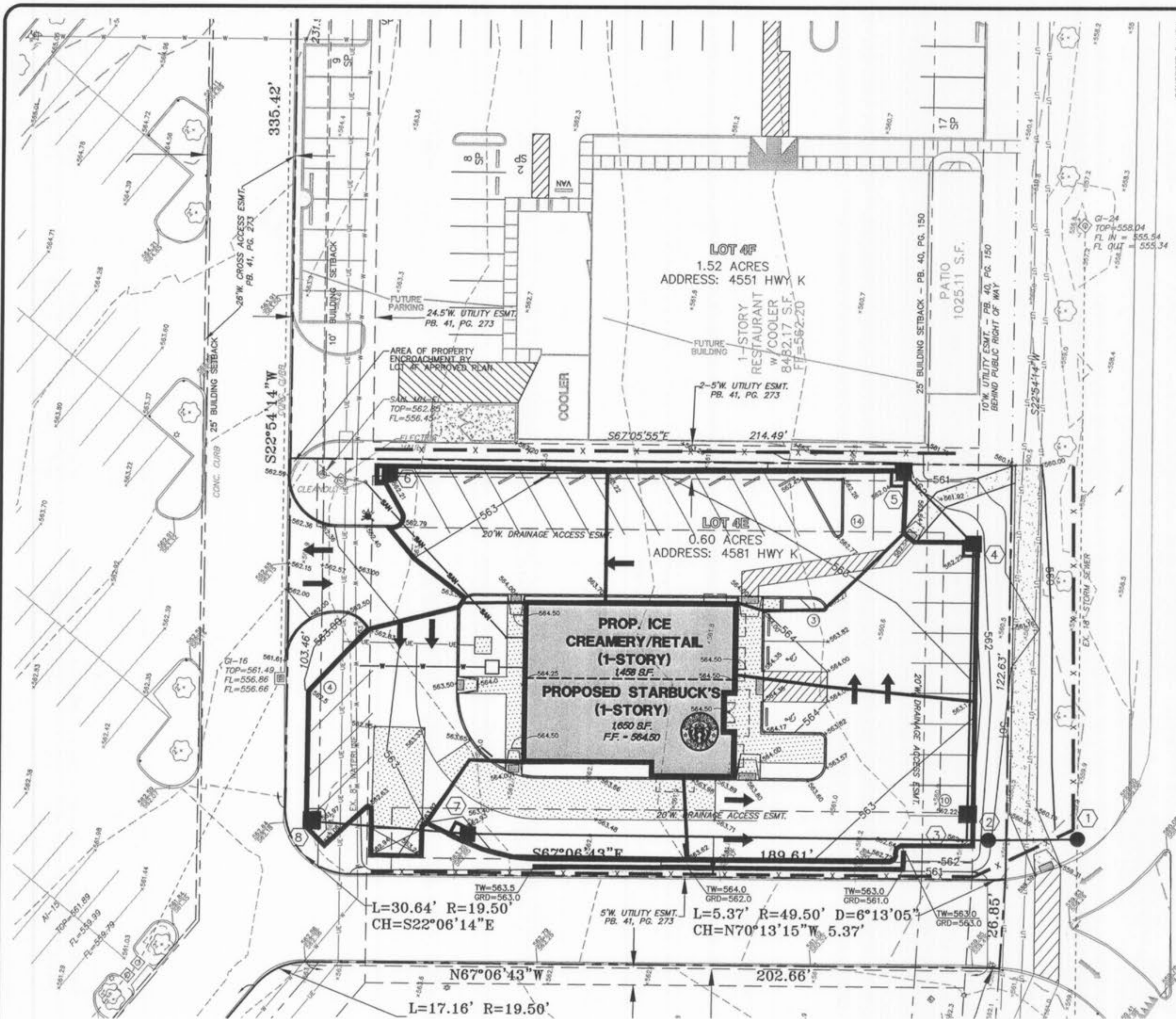
**LOT 4E OF LABOURE' CENTER  
STORM SEWER PROFILES**

**J. R. GRIMES  
CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH. (314) 849-6100  
FAX (314) 849-6010

DRAWN BY: JSK DATE: 10/31/05 CHECKED BY: LJM DATE: 10/31/05 JOB NUMBER: 1384 SHEET: C8

Lot 4E of Laboure Center As built - 9/11



STATE HIGHWAY K (WIDTH VARIES)

**15 YEAR STORM**

| STRUCTURE | AREA (ACRES) | P.I. | TOTAL Q (cfs) |
|-----------|--------------|------|---------------|
| 1         | 0.00         | 3.85 | 0.00          |
| 2         | 0.00         | 3.85 | 0.00          |
| 3         | 0.09         | 3.85 | 0.34          |
| 4         | 0.05         | 3.85 | 0.21          |
| 5         | 0.08         | 3.85 | 0.29          |
| 6         | 0.07         | 3.85 | 0.26          |
| 7         | 0.04         | 3.85 | 0.17          |
| 8         | 0.09         | 3.85 | 0.35          |
| ROOF      | 0.07         | 3.85 | 0.26          |

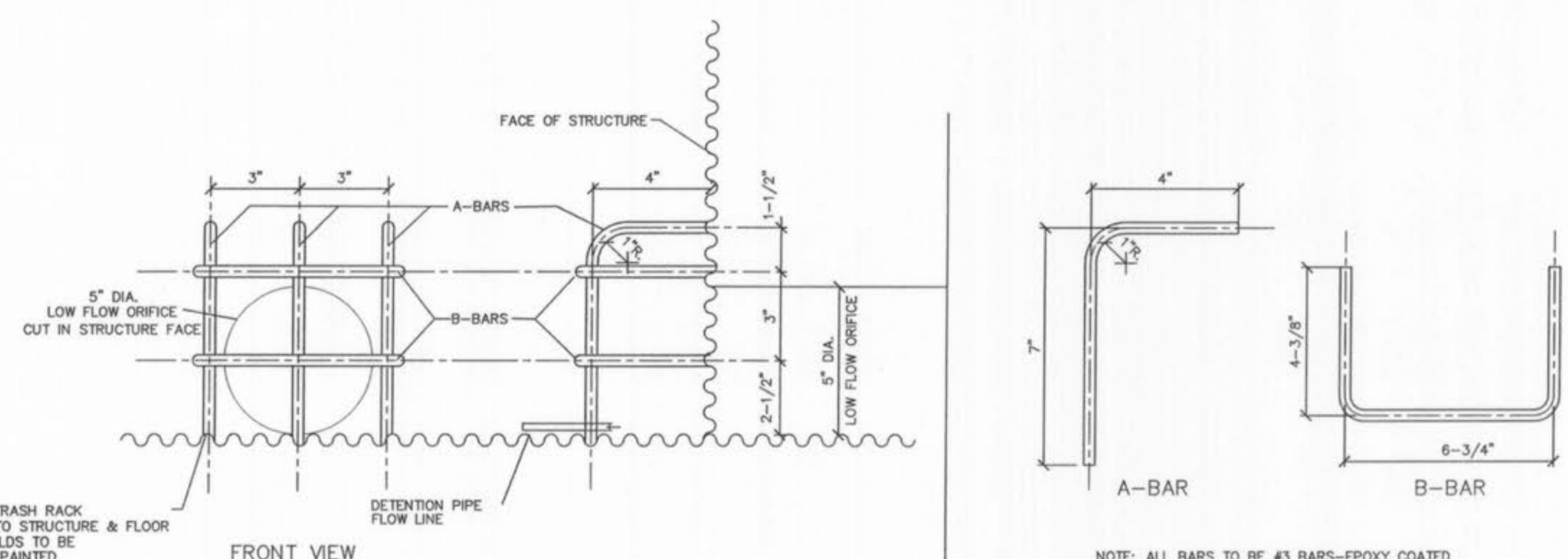
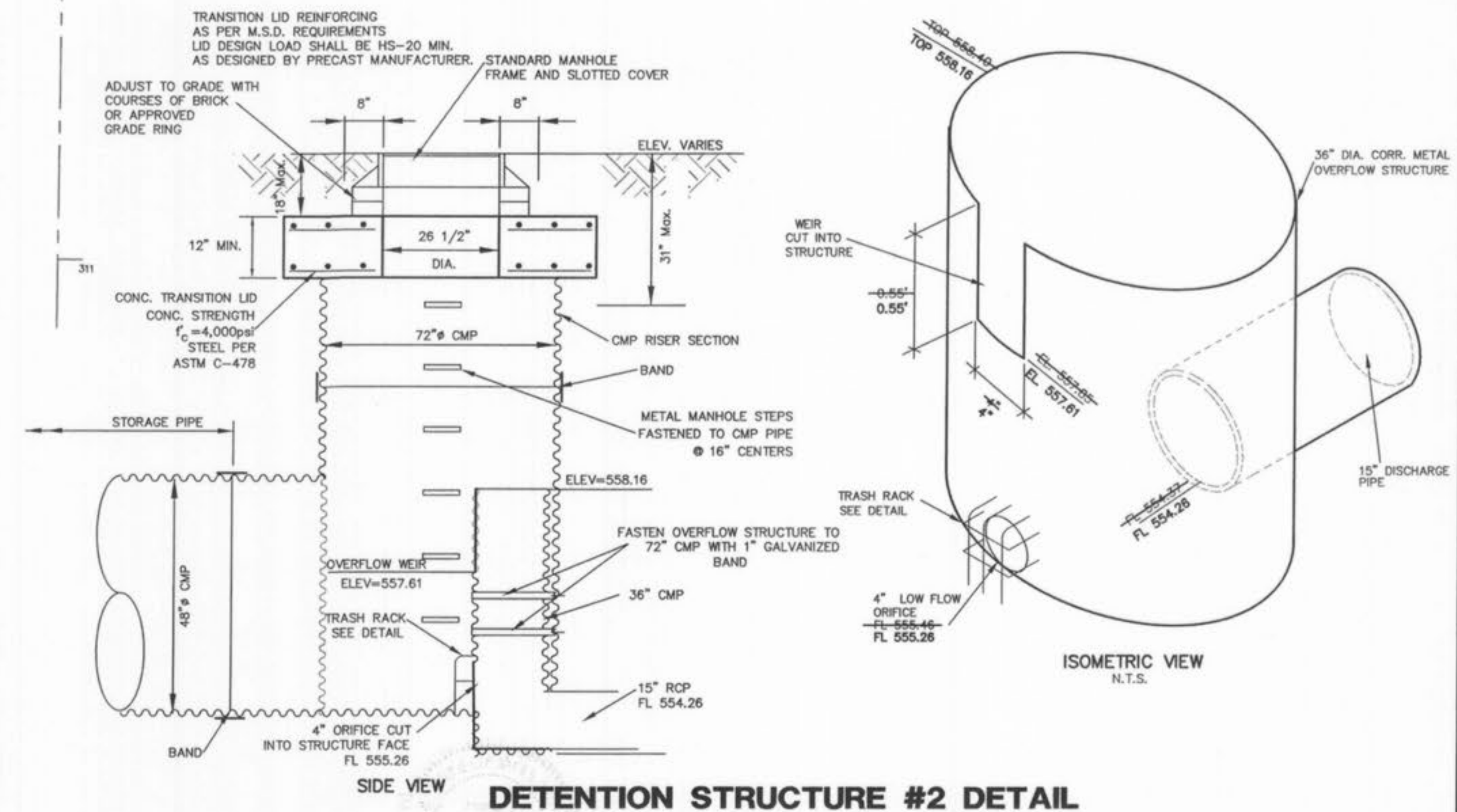
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P.E./L.S.

DATE



PREPARED FOR:  
LABOURE' 4E, L.L.C.  
35 N. CENTRAL, STE 400  
ST. LOUIS, MO 63105  
PH: (314) 863-6061  
FAX: (314) 863-6146

**TRASH RACK DETAIL**  
STRUCTURE 2A

01/09/06 PER MODOT COMMENTS  
12/02/05 PER CITY OF O'FALLON COMMENTS

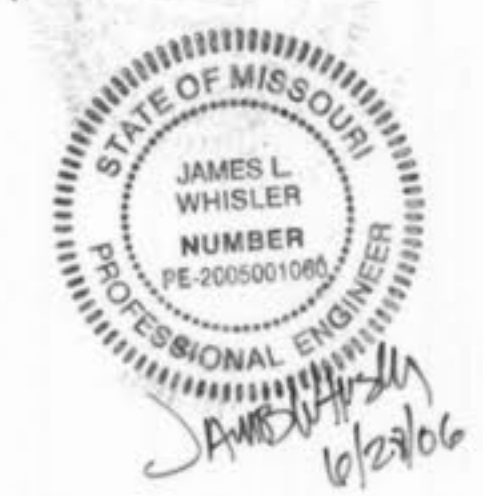
CITY FILE #704.02

**LOT 4E OF LABOURE' CENTER  
DRAINAGE AREA MAP**

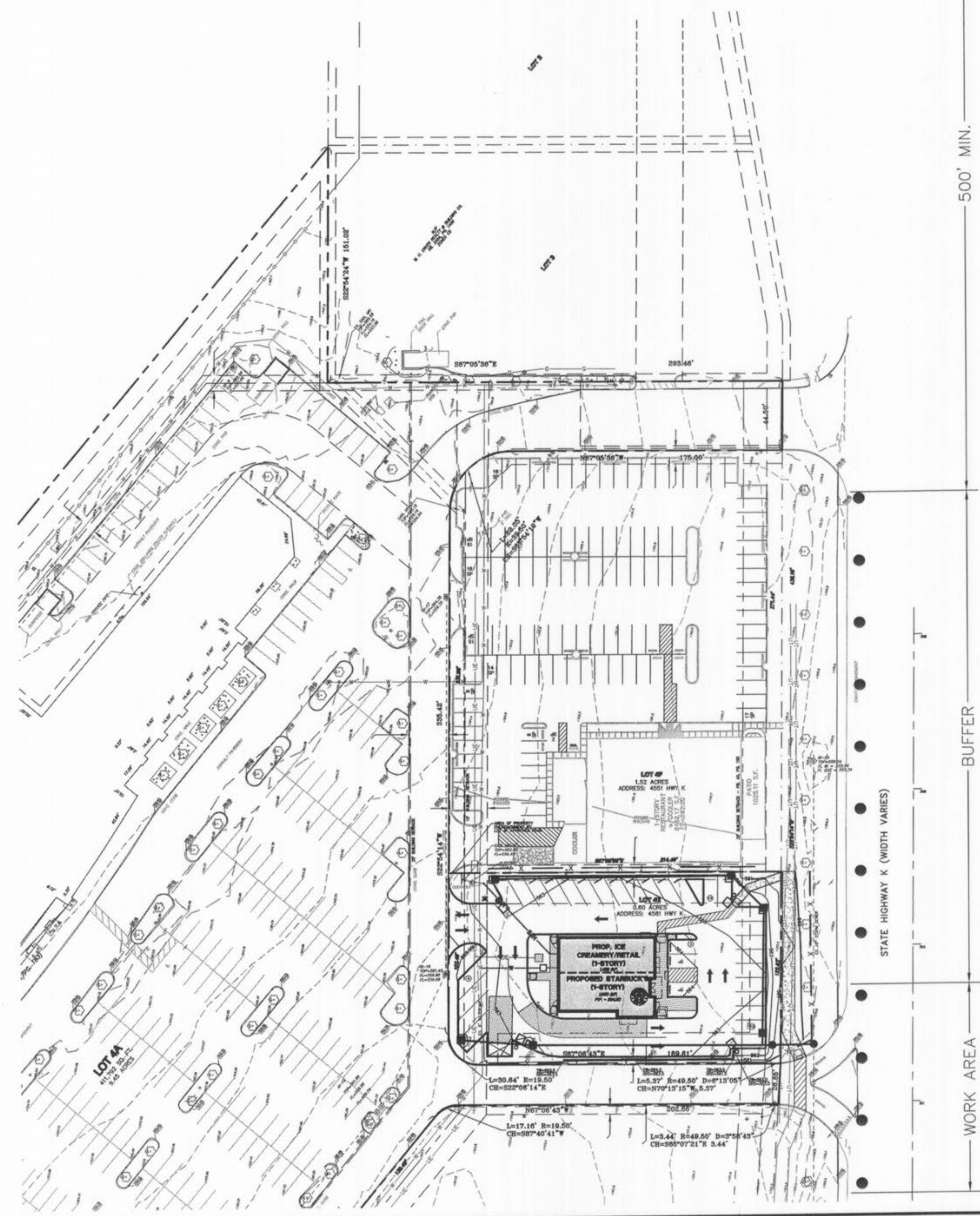
**J. R. GRIMES  
CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
SUITE 3000  
ST. LOUIS, MO. 63128  
PH. (314) 849-6100  
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DRAWN BY: JSK DATE: 10/31/05 CHECKED BY: LJM DATE: 10/31/05 JOB NUMBER: 1384 SHEET: C9



SHOULDER WORK AHEAD



PREPARED FOR:  
**LABOURE' 4E, L.L.C.**  
 35 N. CENTRAL, STE 400  
 ST. LOUIS, MO 63105  
 PH: (314) 863-6061  
 FAX: (314) 863-6146

STATE OF MISSOURI  
 JAMES L. WHISLER  
 NUMBER PE-2005001080  
 PROFESSIONAL ENGINEER

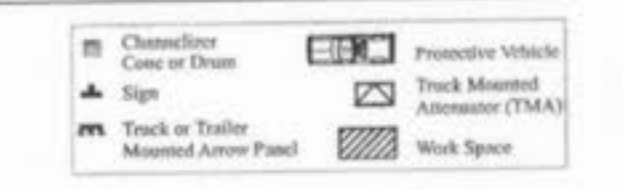
*James Whisler*  
*12/20/05*

**Shoulder Work on Undivided Highways**

| SPEED | SIGN SPACING (ft.) |             | TAPER LENGTH (ft.) |           | OPTIONAL BUFFER LENGTH (ft.) (B) | CHANNELIZER SPACING (ft.) |                   |
|-------|--------------------|-------------|--------------------|-----------|----------------------------------|---------------------------|-------------------|
|       | Undivided (S)      | Divided (S) | Shoulder (T1)      | Lane (T2) |                                  | Tapers                    | Buffer Work Areas |
| 0-35  | 200                | -           | 70                 | -         | 120                              | 35                        | 50                |
| 40-45 | 350                | -           | 150                | -         | 220                              | 40                        | 100               |
| 50-55 | 500                | -           | 185                | -         | 335                              | 50                        | 100               |
| 60-70 | 1000               | -           | 235                | -         | 550                              | 60                        | 100               |

1 Shoulder taper length based on 10 ft. (standard shoulder width) offset 2 Lane taper length based on 12 ft. (standard lane width) offset

| TYPE ROADWAY    | SIGN HEIGHT        | MAXIMUM WORK ZONE LENGTH (ft.) |
|-----------------|--------------------|--------------------------------|
| URBAN           | 7' Post<br>7' Post | 1 MI.                          |
| RURAL UNDIVIDED | 7' Post<br>5' Post | 3 MI.                          |



**Notes:**

In addition to shoulder work, this typical application is applicable to work beyond shoulder where vehicles and equipment are parked on the shoulder.

A protective vehicle shall be used while work is in progress. The protective vehicle should be equipped with a TMA and positioned at least 150 ft. in advance of the work space.

If encroachment onto driving surface occurs and there is not 10 ft. of driving surface available for the lane of traffic, that traffic lane shall be closed. Refer to appropriate lane closure typical applications.

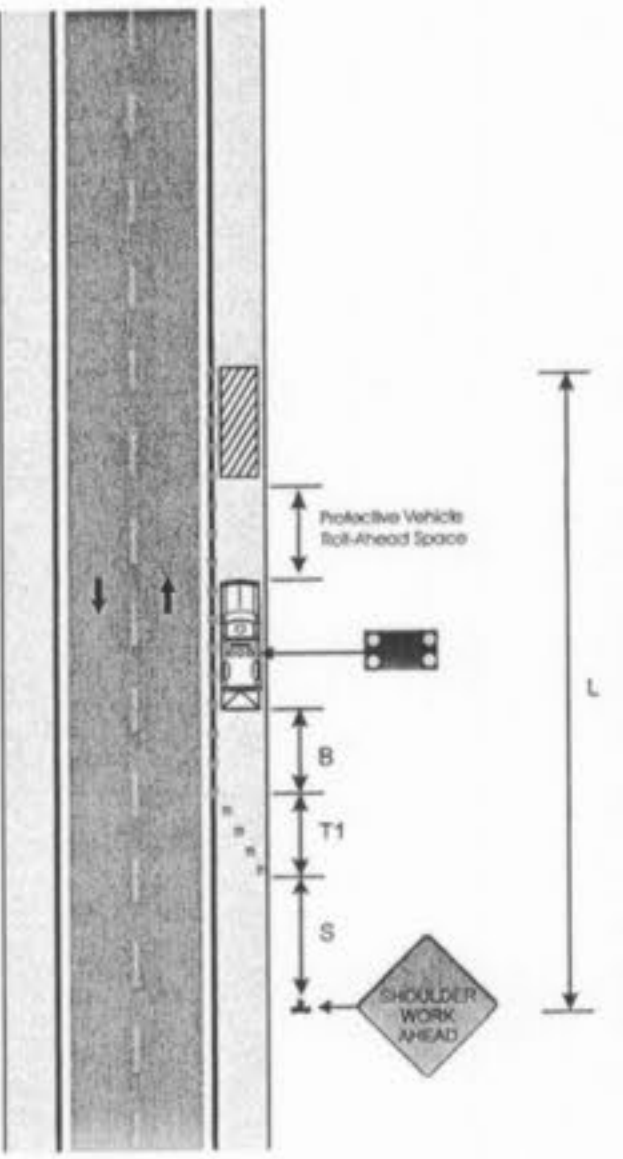
If an arrow panel is used for an operation on the shoulder, the caution mode shall be displayed.

For short duration or mobile operations, signs, channelization devices and protective vehicles may be reduced or eliminated if a work vehicle with activated rotating lights or strobe lights is used. However, if limited sight distance exists in a stationary operation or workers are on foot, a protective vehicle should be used. This protective vehicle should be equipped with a TMA and truck mounted flashing arrow panel and positioned at least 150 ft. in advance of the work space or work vehicle, as applicable. If a protective vehicle is used, a vehicle mounted sign shall be mounted at a recommended height of 48 in. above the road surface.

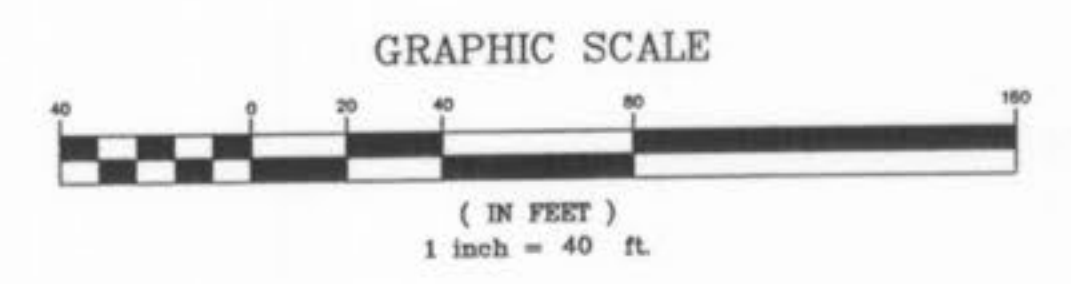
For work beyond shoulder, where vehicles and equipment are parked on the shoulder, the protective vehicle may be eliminated if a work vehicle with activated rotating lights or strobe lights is used.

Additional warning signs shall be erected at each intersection with another state highway within the work zone. Upon the discretion of the supervisor, additional warning signs may be erected at other intersections within the work zone.

Other appropriate signs may be used in lieu of SHOULDER WORK AHEAD sign.



TA-2



01/09/06 PER MODOT COMMENTS CITY FILE #704.02

**LOT 4E OF LABOURE' CENTER  
 TRAFFIC CONTROL PLAN**

**J. R. GRIMES  
 CONSULTING ENGINEERS, INC.**

12300 OLD TESSON ROAD  
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 PH. (314) 849-6100  
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|             |                |                 |                |                  |            |
|-------------|----------------|-----------------|----------------|------------------|------------|
| DRW BY: JSK | DATE: 10/31/05 | CHECKED BY: LJM | DATE: 10/31/05 | JOB NUMBER: 1384 | SHEET: C10 |
|-------------|----------------|-----------------|----------------|------------------|------------|

Lot 4E of Laboure Center As built - 11/10/06

