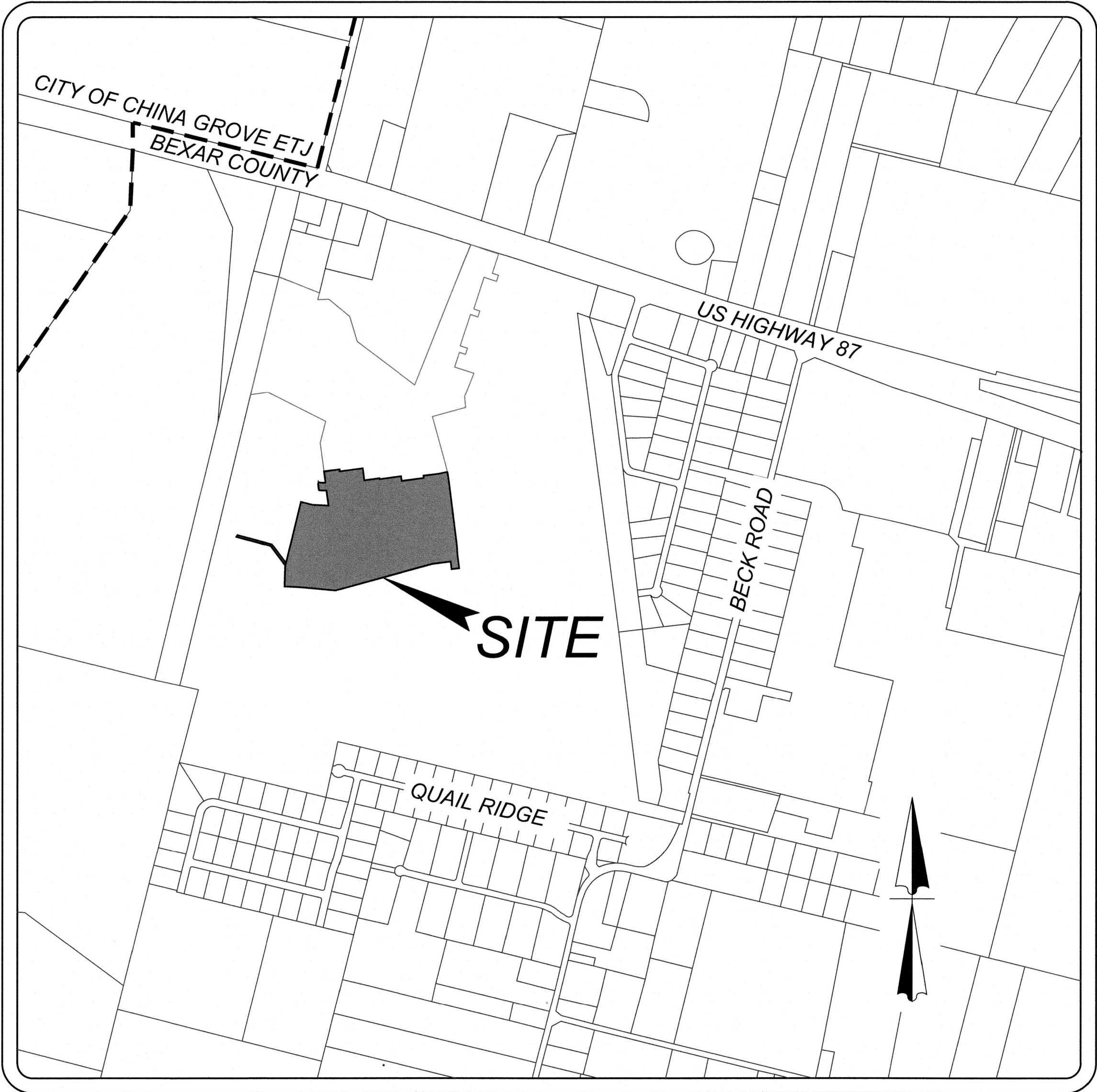


# GATES SUBDIVISION UNIT 2

BEXAR COUNTY, TX

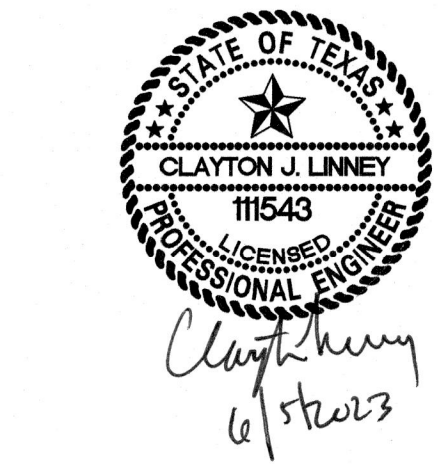
## STREET, DRAINAGE, WATER, SANITARY SEWER, AND UTILITY IMPROVEMENTS



### LOCATION MAP NOT-TO-SCALE

| SHEET REVISION LOG |           |              |             |
|--------------------|-----------|--------------|-------------|
| DATE               | SHEET NO. | REVISION NO. | DESCRIPTION |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |

OWNER INFORMATION  
MEH HOLDING COMPANY LTD  
5210 THOUSAND OAKS, SUITE 1318  
SAN ANTONIO, TX 78233



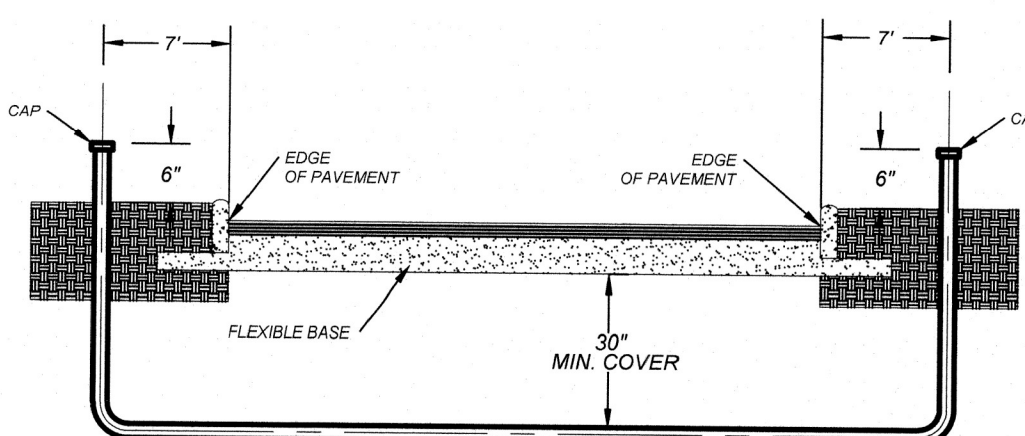
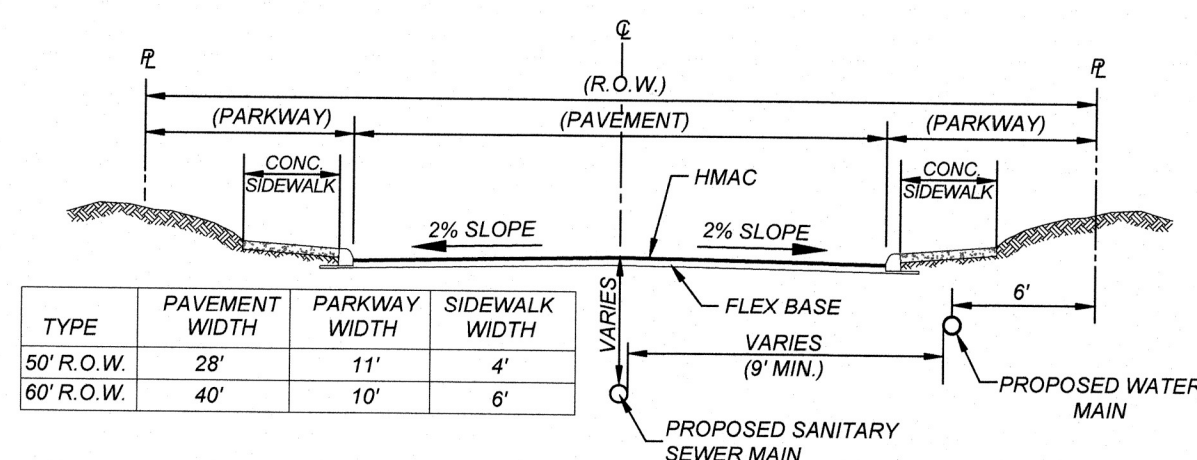
| Sheet List Table                                        |              |
|---------------------------------------------------------|--------------|
| SHEET TITLE                                             | SHEET NUMBER |
| COVER SHEET                                             | 0.0          |
| OVERALL UTILITY PLAN (SHEET 1 OF 2)                     | 1.0          |
| OVERALL UTILITY PLAN (SHEET 2 OF 2)                     | 1.1          |
| MASTER DRAINAGE PLAN                                    | 2.0          |
| OVERALL GRADING PLAN                                    | 3.0          |
| PRIVATE DRAIN "A" PLAN & PROFILE (SHEET 1 OF 3)         | 4.0          |
| PRIVATE DRAIN "A" PLAN & PROFILE (SHEET 2 OF 3)         | 4.1          |
| PRIVATE DRAIN "A" PLAN & PROFILE (SHEET 3 OF 3)         | 4.2          |
| PRIVATE DRAIN "B" PLAN & PROFILE                        | 4.3          |
| FIELDSTONE WAY PLAN & PROFILE                           | 5.0          |
| SKYBROOK DR & KESTIS LN PLAN & PROFILE                  | 5.1          |
| HAWKWEEL LN PLAN & PROFILE                              | 5.2          |
| HASTINGS WAY, DUSKVIEW HILL & TROUT LILY PLAN & PROFILE | 5.3          |
| FROSTWOOD HTS PLAN & PROFILE                            | 5.4          |
| CONCRETE DRIVEWAY DETAILS                               | 5.5          |
| WHEELCHAIR RAMP DETAILS                                 | 5.6          |
| TXDOT PEDESTRIAN CURB RAMP DETAIL                       | 5.7          |
| TYPICAL STREET DETAILS                                  | 5.8          |
| TRAFFIC SIGNAGE & PEDESTRIAN ACCESSIBILITY PLAN         | 5.9          |
| TRAFFIC SIGNAGE DETAILS (SHEET 1 OF 2)                  | 5.10         |
| TRAFFIC SIGNAGE DETAILS (SHEET 2 OF 2)                  | 5.11         |
| PAVEMENT MARKING DETAILS (SHEET 1 OF 2)                 | 5.12         |
| PAVEMENT MARKING DETAILS (SHEET 2 OF 2)                 | 5.13         |
| SANITARY SEWER COVER SHEET                              | 6.0          |
| OVERALL SANITARY SEWER PLAN (SHEET 1 OF 2)              | 6.1          |
| OVERALL SANITARY SEWER PLAN (SHEET 2 OF 2)              | 6.2          |
| LINE "A" PLAN & PROFILE                                 | 6.3          |
| LINE "B" PLAN & PROFILE                                 | 6.4          |
| LINE "C", "D", & "E" PLAN & PROFILE                     | 6.5          |
| LINE "F" & "G" PLAN & PROFILE                           | 6.6          |
| WATER DISTRIBUTION COVER SHEET                          | 7.0          |
| WATER DISTRIBUTION PLAN (SHEET 1 OF 2)                  | 7.1          |
| WATER DISTRIBUTION PLAN (SHEET 2 OF 2)                  | 7.2          |
| WATER DISTRIBUTION DETAILS (SHEET 1 OF 5)               | 7.3          |
| WATER DISTRIBUTION DETAILS (SHEET 2 OF 5)               | 7.4          |
| WATER DISTRIBUTION DETAILS (SHEET 3 OF 5)               | 7.5          |
| WATER DISTRIBUTION DETAILS (SHEET 4 OF 5)               | 7.6          |
| WATER DISTRIBUTION DETAILS (SHEET 5 OF 5)               | 7.7          |
| STORM WATER POLLUTION PREVENTION PLAN (SHEET 1 OF 2)    | 8.0          |
| STORM WATER POLLUTION PREVENTION PLAN (SHEET 2 OF 2)    | 8.1          |
| STORM WATER POLLUTION PREVENTION DETAILS                | 8.2          |



**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

**DRY UTILITY CONDUIT NOTE:**  
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY SURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY SURVEYOR'S PLAN.



NOTE:  
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CFS FACILITY AT ALL STREETS AND DRAIN CROSSING IF BUILT AHEAD OF CFS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CFS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.

EXISTING 60" SANITARY SEWER EASEMENT (DOC #)

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

16" OFF-LOT SANITARY SEWER EASEMENT

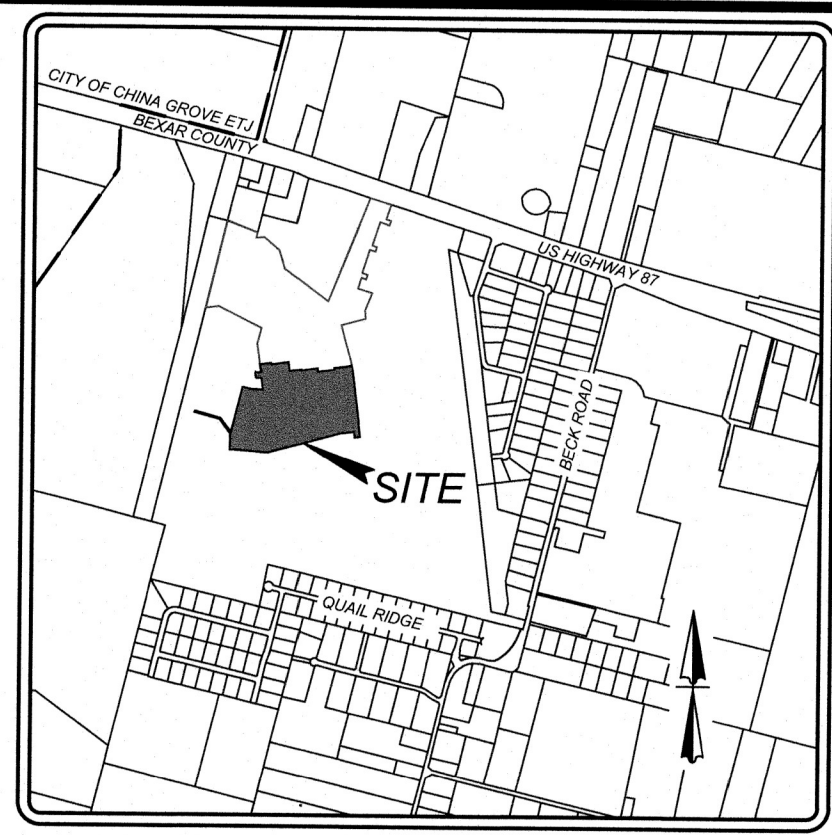
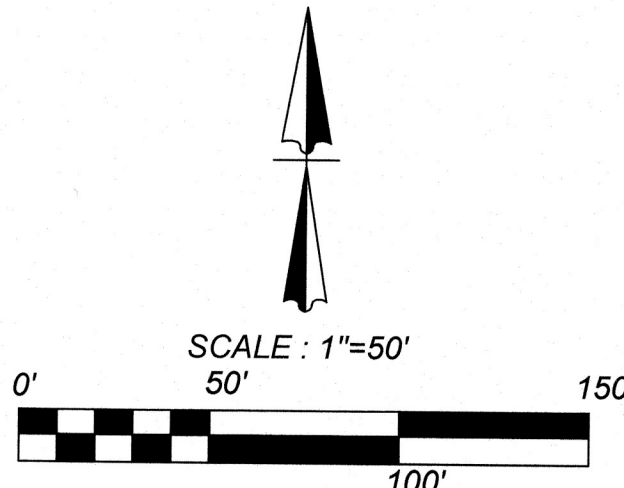
WATER CROSSING  
REF. WATER CROSSING  
DETAIL THIS SHEET.

OFF-LOT VARIABLE WIDTH  
PRIVATE DRAINAGE EASEMENT

OFF-LOT 60" x 60" ELEC. GAS, TELE. CATV, WATER, SANITARY SEWER & DRAINAGE EASEMENT. ENTIRE EASEMENT TO EXPIRE UPON INCORPORATION INTO PLATTED STREET R.O.W.

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

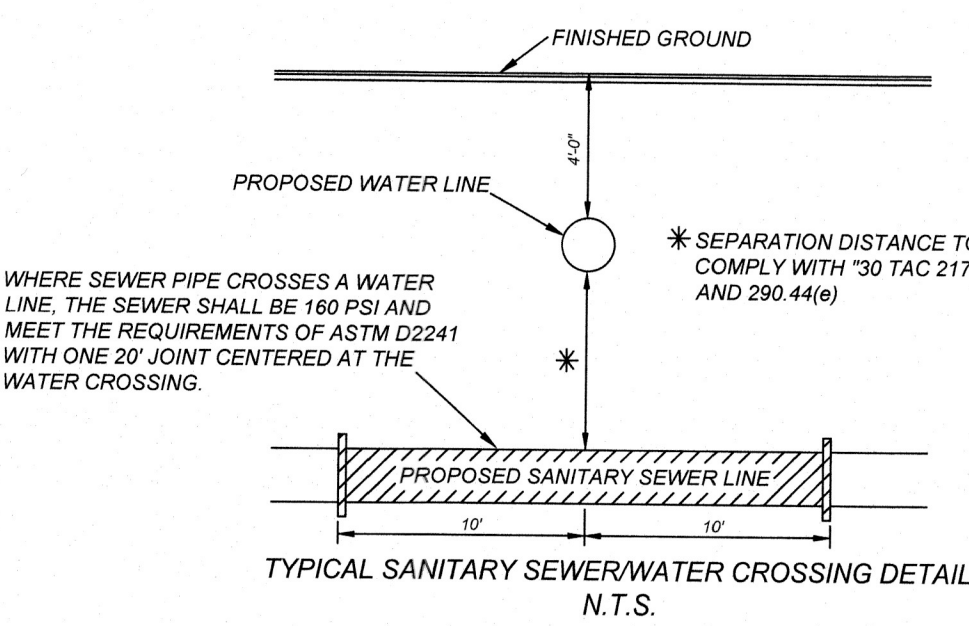
GATES SUBDIVISION, UNIT 1  
(CONCURRENT PLAT #21-11800645)



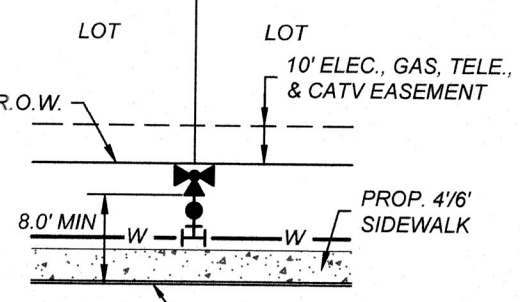
LOCATION MAP  
NOT-TO-SCALE

**LEGEND**

- PROPOSED WATER MAIN = W
- PROPOSED WATER SERVICE & METER BOX =
- PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX =
- PROPOSED FIRE HYDRANT =
- PROPOSED WATER VALVE =
- PROPOSED 100W STREETLIGHT =
- PROPOSED 250W STREETLIGHT =
- PROPOSED SANITARY SEWER MAIN =
- PROPOSED SANITARY SEWER MANHOLE =
- PROPOSED SANITARY SEWER LATERAL =
- PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT = E, G, T, V, E
- EXISTING WATER MAIN = E-W
- EXISTING FIRE HYDRANT =
- EXISTING WATER VALVE =
- EXISTING SANITARY SEWER MAIN = E-SS
- EXISTING SANITARY SEWER MANHOLE =
- EXISTING OVERHEAD ELECTRIC W/POWER POLE = OHE
- EXISTING GUY WIRE/OVERHEAD ELECTRIC =



WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.



TYPICAL FIRE HYDRANT DETAIL  
NOT-TO-SCALE

GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
OVERALL UTILITY PLAN (SHEET 1 OF 2)

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

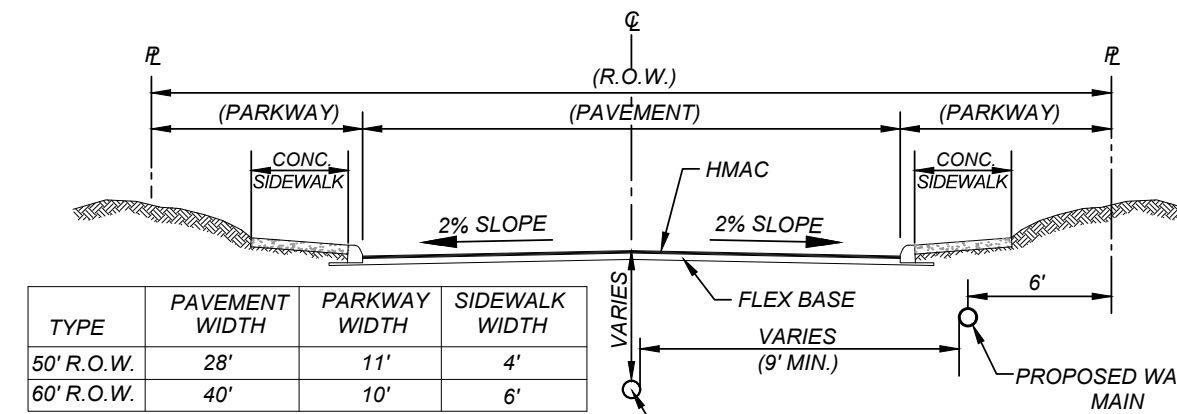
1.0



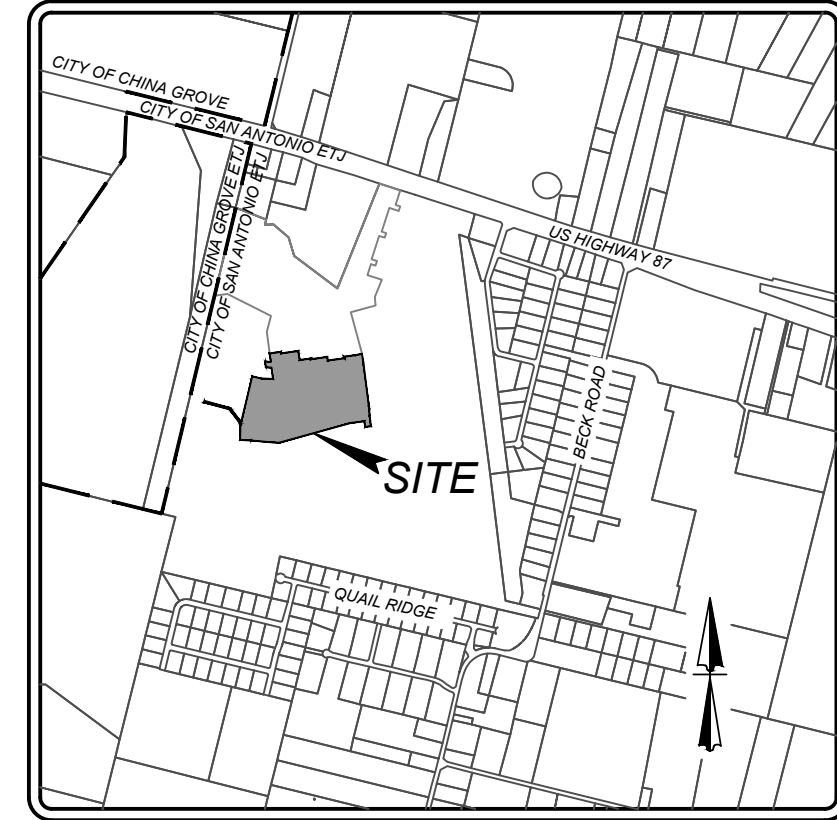
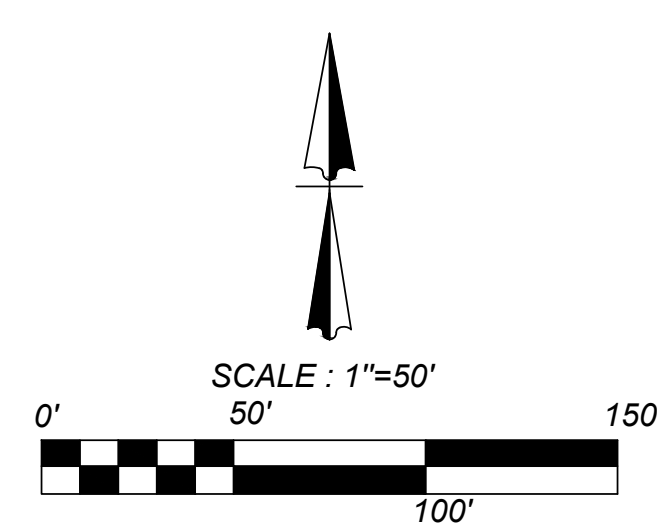
**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR. PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

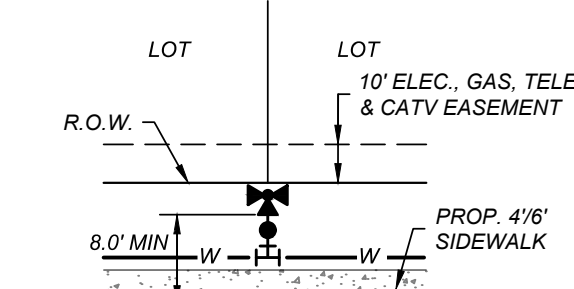
**DRY UTILITY CONDUIT NOTE:**  
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.



TYPICAL STREET SECTION  
N.T.S.



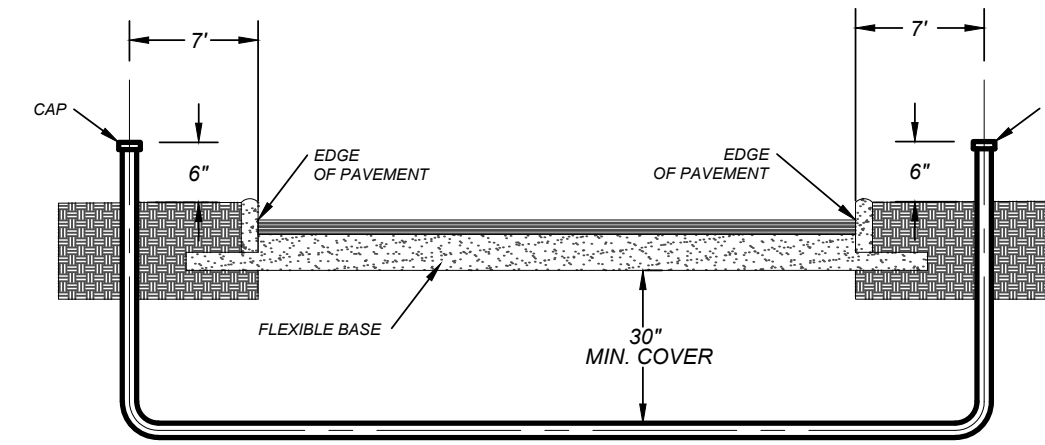
LOCATION MAP  
NOT-TO-SCALE



TYPICAL FIRE HYDRANT DETAIL  
NOT-TO-SCALE

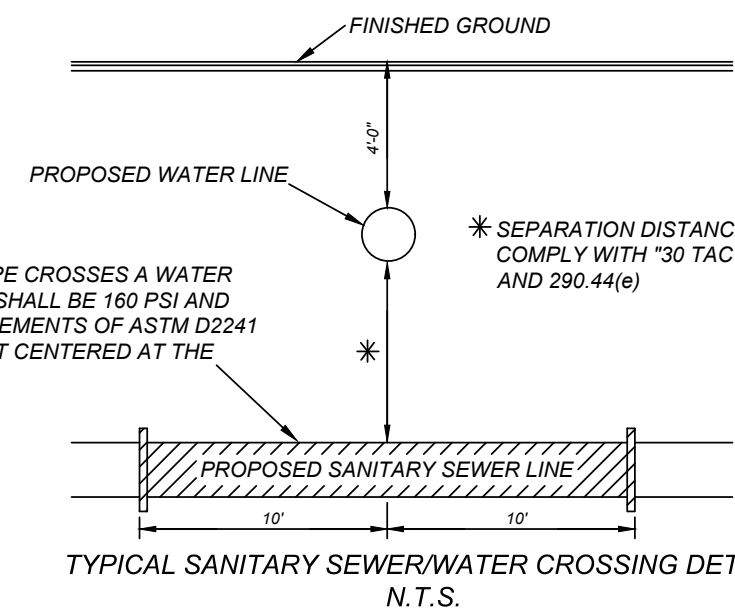
**LEGEND**

- PROPOSED WATER MAIN = W
- PROPOSED WATER SERVICE & METER BOX = M
- PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX = 3/4"
- PROPOSED FIRE HYDRANT = H
- PROPOSED WATER VALVE = V
- PROPOSED 100W STREETLIGHT = 100W
- PROPOSED 250W STREETLIGHT = 250W
- PROPOSED SANITARY SEWER MAIN = SS
- PROPOSED SANITARY SEWER MANHOLE = MH
- PROPOSED SANITARY SEWER LATERAL = S.S.
- PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT = E.G.T.T.V.E.
- EXISTING WATER MAIN = E.W.
- EXISTING FIRE HYDRANT = H
- EXISTING WATER VALVE = V
- EXISTING SANITARY SEWER MAIN = E.S.S.
- EXISTING SANITARY SEWER MANHOLE = E.MH
- EXISTING OVERHEAD ELECTRIC W/POWER POLE = -OHE-
- EXISTING GUY WIRE/OVERHEAD ELECTRIC = -OHE-



TYPICAL CONDUIT DETAIL  
NOT-TO-SCALE

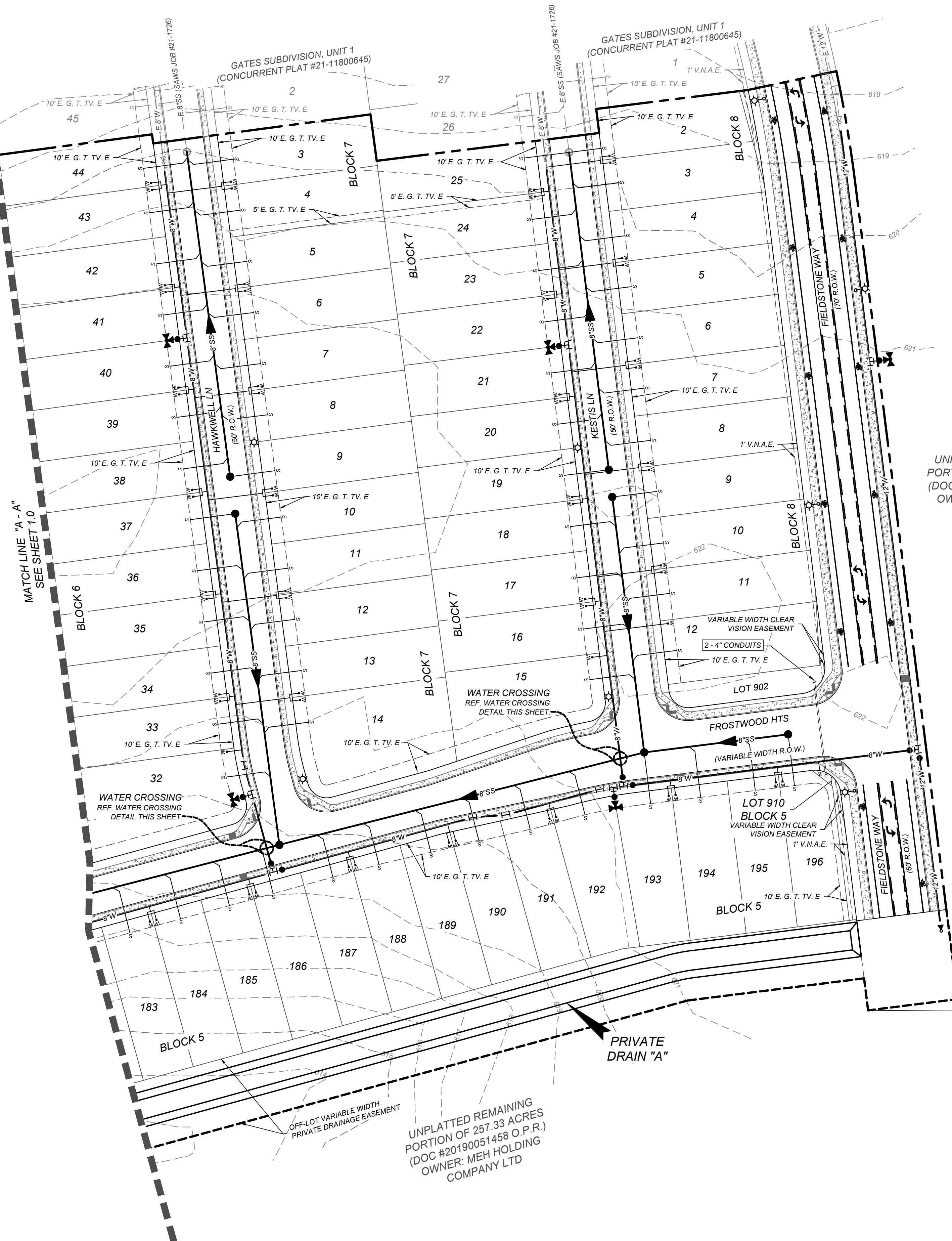
NOTE:  
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH ONE FACILITY AT ALL STREETS AND DRAIN CROSSING IF BUILT AHEAD OF CPS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.



WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.

\* SEPARATION DISTANCE TO COMPLY WITH '30 TAC 217.53(d) AND 290.44(e)

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD



UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

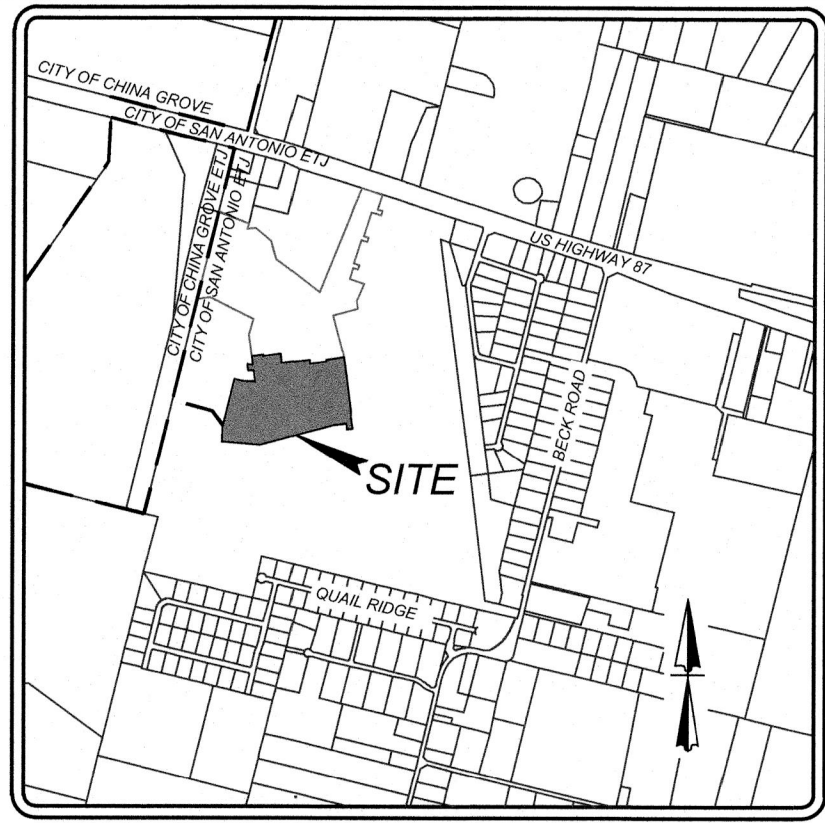
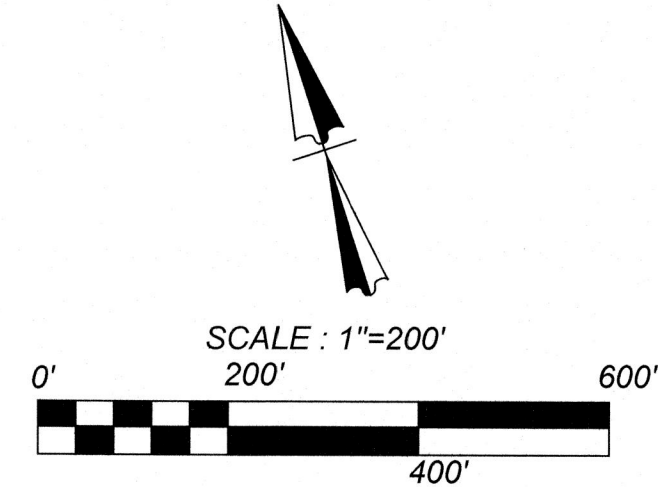
GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
OVERALL UTILITY PLAN (SHEET 2 OF 2)



PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN/OM CHECKED/CL  
SHEET NUMBER:



Drawn: 10/21/2023 2:09pm User: D. eckman  
File: P202343002.dwg Project: GATES SUBDIVISION - REV.dwg



LOCATION MAP  
NOT-TO-SCALE

LEGEND

- ① STUDY POINT
- DRAINAGE AREA BOUNDARY
- - - - - 802 - - - - - EXISTING CONTOURS
- PROPOSED UNIT
- FLOW ARROW

| Proposed Conditions: |                                 |         |      |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
|----------------------|---------------------------------|---------|------|------------------------|-----------------------|----------------------|-----------------------|------------------------|------------------------|-------------------------|--------------------------|-------------------------------------|--------------------------------------|---------------------------------------|--|--|
| Study Point          | AREA                            | (Acres) | C    | T <sub>det</sub> (min) |                       | T <sub>c</sub> (min) | T <sub>ch</sub> (min) | T <sub>tot</sub> (min) | I <sub>s</sub> (in/hr) | I <sub>25</sub> (in/hr) | I <sub>100</sub> (in/hr) | Q <sub>c</sub> (ft <sup>3</sup> /s) | Q <sub>25</sub> (ft <sup>3</sup> /s) | Q <sub>100</sub> (ft <sup>3</sup> /s) |  |  |
| 1                    | A-1                             | 4.22    | 0.75 | 9.00                   |                       | 3                    | 1                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 17.76                               | 24.75                                | 30.89                                 |  |  |
| 2                    | A-2                             | 3.59    | 0.75 | 9.00                   |                       | 3                    | 1                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 15.11                               | 21.05                                | 26.28                                 |  |  |
| 3                    | A-3                             | 3.09    | 0.75 | 9.00                   |                       | 4                    | 0                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 13.01                               | 18.12                                | 22.62                                 |  |  |
| 4                    | PT. 3 + A-4                     | 12.73   | 0.76 | 10.00                  | CARRYOVER FROM PT. 3  | 3                    | 1                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 52.56                               | 72.94                                | 91.00                                 |  |  |
|                      | A-4                             | 9.64    | 0.77 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 5                    | A-5                             | 10.98   | 0.75 | 9.00                   |                       | 4                    | 3                     | 16                     | 5.06                   | 6.99                    | 8.71                     | 41.70                               | 57.54                                | 71.70                                 |  |  |
| 6                    | A-6                             | 11.92   | 0.75 | 9.00                   |                       | 6                    | 2                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 43.86                               | 60.46                                | 75.27                                 |  |  |
| 7                    | A-7                             | 13.01   | 0.75 | 9.00                   |                       | 8                    | 2                     | 19                     | 4.63                   | 6.37                    | 7.93                     | 45.21                               | 62.20                                | 77.35                                 |  |  |
| 8                    | PT. 6 + A-8                     | 14.94   | 0.75 | 10.00                  | CARRYOVER FROM PT. 4  | 7                    | 0                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 54.98                               | 75.77                                | 94.34                                 |  |  |
|                      | A-8                             | 3.02    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 9                    | A-9                             | 5.89    | 0.75 | 9.00                   |                       | 4                    | 2                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 23.15                               | 31.98                                | 39.88                                 |  |  |
| 10                   | A-10                            | 7.12    | 0.75 | 9.00                   |                       | 5                    | 1                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 27.98                               | 38.66                                | 48.21                                 |  |  |
| 11                   | A-11                            | 8.06    | 0.75 | 9.00                   |                       | 5                    | 1                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 31.68                               | 43.77                                | 54.57                                 |  |  |
|                      | PT. 11 + A-12                   | 10.04   | 0.75 | 10.00                  | CARRYOVER FROM PT. 9  | 5                    | 2                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 36.94                               | 50.92                                | 63.40                                 |  |  |
|                      | A-12                            | 1.98    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 13                   | PT. 10 + PT. 11                 | 17.16   | 0.75 | 10.00                  | CARRYOVER FROM PT. 10 | 7                    | 0                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 63.14                               | 87.03                                | 108.36                                |  |  |
| 14                   | A-14                            | 6.28    | 0.82 | 9.00                   |                       | 6                    | 2                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 25.12                               | 34.62                                | 43.11                                 |  |  |
| 15                   | A-15                            | 7.57    | 0.75 | 9.00                   |                       | 6                    | 2                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 27.86                               | 38.39                                | 47.80                                 |  |  |
| 16                   | A-16                            | 6.44    | 0.75 | 9.00                   |                       | 5                    | 1                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 25.31                               | 34.97                                | 43.60                                 |  |  |
| 17                   | A-17                            | 9.00    | 0.75 | 9.00                   |                       | 4                    | 0                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 37.88                               | 52.77                                | 65.88                                 |  |  |
| 18                   | PT. 14 + PT. 15 + A-18          | 21.42   | 0.77 | 10.00                  | CARRYOVER FROM PT. 12 | 7                    | 3                     | 20                     | 4.51                   | 6.21                    | 7.71                     | 74.38                               | 102.24                               | 127.08                                |  |  |
|                      | A-18                            | 7.57    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 19                   | A-19                            | 5.12    | 0.75 | 9.00                   |                       | 4                    | 0                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 21.55                               | 30.02                                | 37.48                                 |  |  |
|                      | PT. 17 + PT. 18 + PT. 19 + A-20 | 40.29   | 0.75 | 10.00                  | CARRYOVER FROM PT. 16 | 10                   | 2                     | 22                     | 4.30                   | 5.91                    | 7.34                     | 130.02                              | 178.48                               | 221.67                                |  |  |
|                      | A-20                            | 4.75    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 21                   | A-21                            | 3.96    | 0.75 | 9.00                   |                       | 4                    | 1                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 16.11                               | 22.35                                | 27.89                                 |  |  |
| 22                   | A-22                            | 4.40    | 0.75 | 9.00                   |                       | 4                    | 1                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 17.89                               | 24.83                                | 30.98                                 |  |  |
| 23                   | A-23                            | 4.21    | 0.75 | 9.00                   |                       | 4                    | 1                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 17.12                               | 23.76                                | 29.65                                 |  |  |
|                      | PT. 16 + A-24                   | 10.32   | 0.75 | 10.00                  | CARRYOVER FROM PT. 14 | 5                    | 2                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 37.98                               | 52.34                                | 65.17                                 |  |  |
|                      | A-24                            | 3.88    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 25                   | PT. 23 + PT. 24                 | 14.53   | 0.75 | 10.00                  | CARRYOVER FROM PT. 22 | 7                    | 0                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 53.47                               | 73.69                                | 91.75                                 |  |  |
|                      | PT. 22 + PT. 25 + A-26          | 22.52   | 0.75 | 10.00                  | CARRYOVER FROM PT. 23 | 7                    | 1                     | 18                     | 4.76                   | 6.56                    | 8.16                     | 80.46                               | 110.78                               | 137.84                                |  |  |
|                      | A-26                            | 3.59    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 27                   | A-27                            | 9.11    | 0.75 | 9.00                   |                       | 5                    | 3                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 33.52                               | 46.20                                | 57.53                                 |  |  |
| 28                   | A-28                            | 8.13    | 0.75 | 9.00                   |                       | 4                    | 2                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 31.95                               | 44.15                                | 55.04                                 |  |  |
| 29                   | A-29                            | 1.61    | 0.91 | 14.00                  |                       | 2                    | 0                     | 16                     | 5.06                   | 6.99                    | 8.71                     | 7.42                                | 10.24                                | 12.76                                 |  |  |
| 30                   | A-30                            | 9.92    | 0.75 | 9.00                   |                       | 6                    | 1                     | 16                     | 5.06                   | 6.99                    | 8.71                     | 37.68                               | 51.99                                | 64.78                                 |  |  |
| 31                   | PT.29 + A-31                    | 5.04    | 0.87 | 9.00                   |                       | 3                    | 2                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 23.77                               | 32.98                                | 41.15                                 |  |  |
|                      | A-31                            | 3.43    | 0.85 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 32                   | PT. 30 + PT. 31                 | 14.96   | 0.79 | 10.00                  | CARRYOVER FROM PT. 29 | 6                    | 1                     | 17                     | 4.91                   | 6.76                    | 8.42                     | 58.01                               | 79.95                                | 99.54                                 |  |  |
| 33                   | A-33                            | 9.17    | 0.75 | 9.00                   |                       | 4                    | 1                     | 14                     | 5.42                   | 7.53                    | 9.39                     | 37.29                               | 51.76                                | 64.57                                 |  |  |
|                      | PT. 32 + PT. 34                 | 19.29   | 0.78 | 10.00                  | CARRYOVER FROM PT. 30 | 7                    | 2                     | 19                     | 4.63                   | 6.37                    | 7.93                     | 69.83                               | 96.06                                | 119.46                                |  |  |
|                      | A-34                            | 4.33    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 35                   | A-35                            | 6.30    | 0.75 | 9.00                   |                       | 3                    | 3                     | 15                     | 5.24                   | 7.24                    | 9.03                     | 24.76                               | 34.21                                | 42.65                                 |  |  |
| 36                   | PT. 33 + PT. 34 + A-36          | 31.52   | 0.77 | 10.00                  | CARRYOVER FROM PT. 32 | 9                    | 1                     | 20                     | 4.51                   | 6.21                    | 7.71                     | 109.44                              | 150.44                               | 186.99                                |  |  |
|                      | A-36                            | 3.06    | 0.75 |                        |                       |                      |                       |                        |                        |                         |                          |                                     |                                      |                                       |  |  |
| 37                   | A-37                            | 6.62    | 0.75 | 9.00                   |                       | 6                    | 1                     | 16                     | 5.06                   | 6.99                    | 8.71                     | 25.14                               | 34.69                                | 43.23                                 |  |  |
| 38                   | A-38                            | 5.49    | 0.75 | 9.00                   |                       | 3                    | 1                     | 13                     | 5.61                   | 7.82                    | 9.76                     | 23.11                               | 32.19                                | 40.19                                 |  |  |

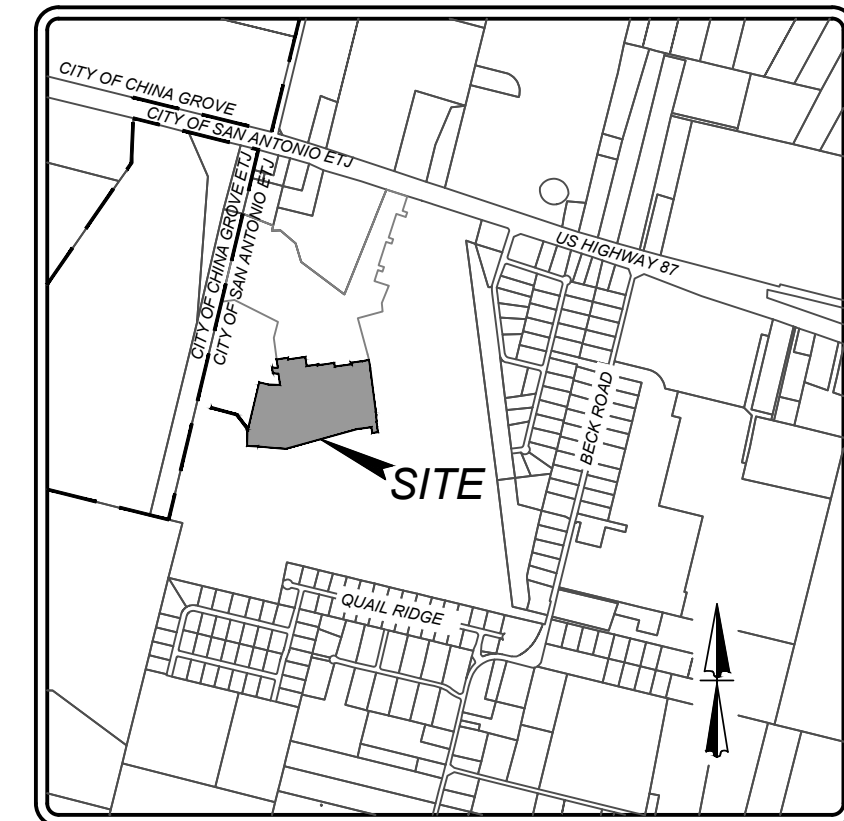
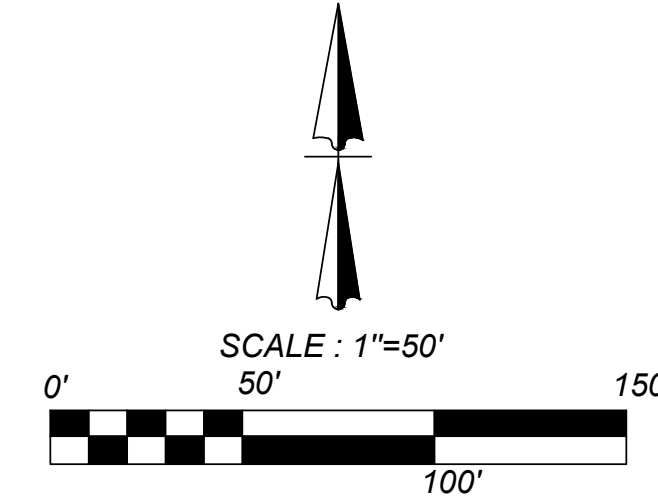
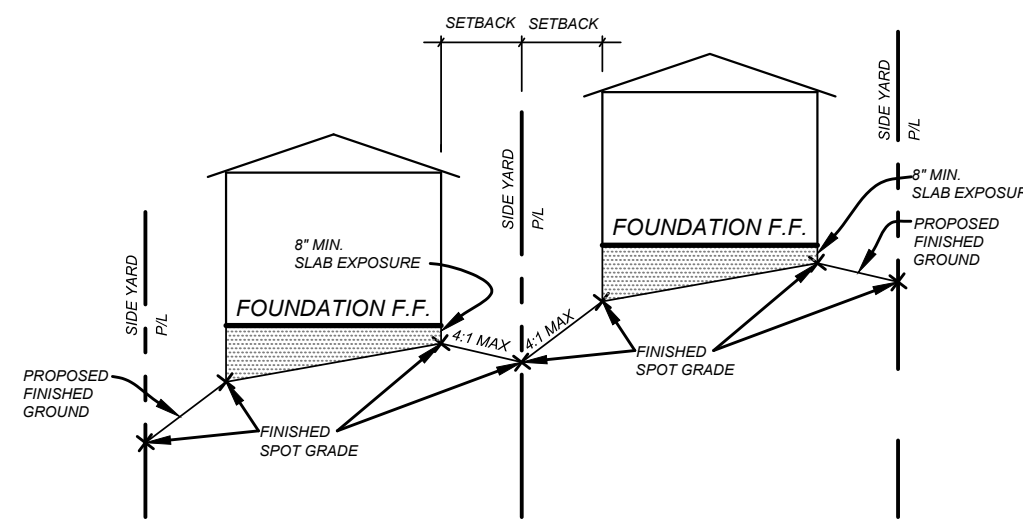
GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
MASTER DRAINAGE PLAN

PLAT NO.<



GENERAL NOTES:

- ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.
- CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.
- HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
- AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.
- CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
- POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OR STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.
- ALL ELEVATIONS AND CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVEMENT, CURBS, AND SIDEWALKS MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
- GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.

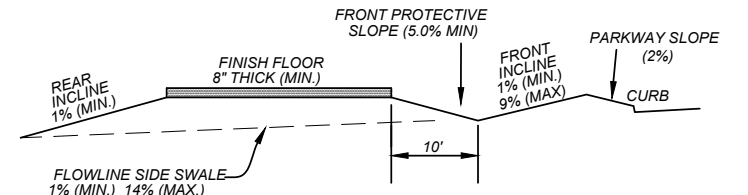
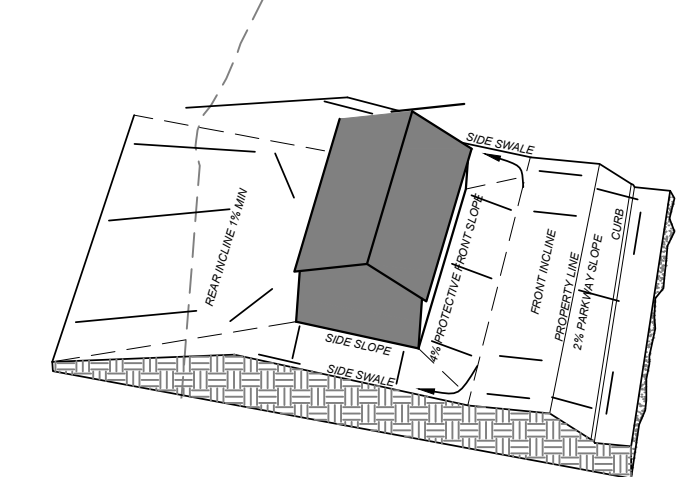
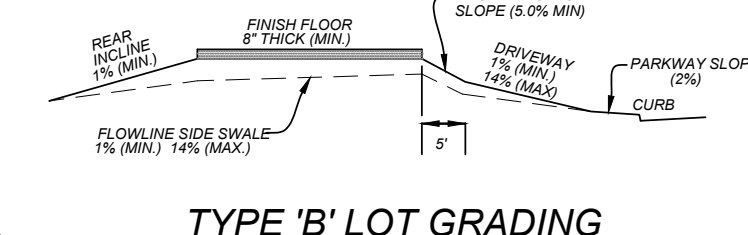
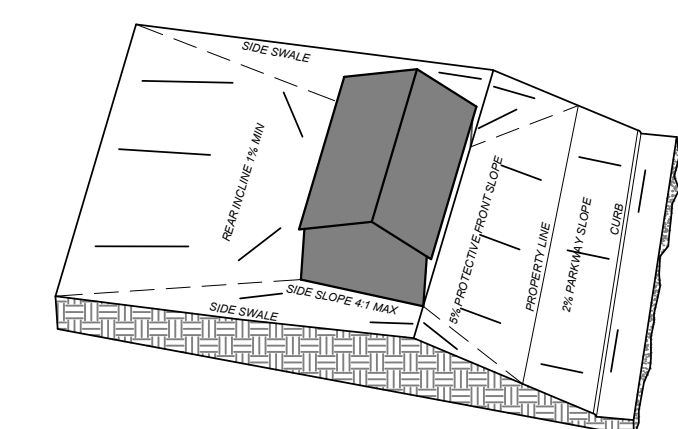
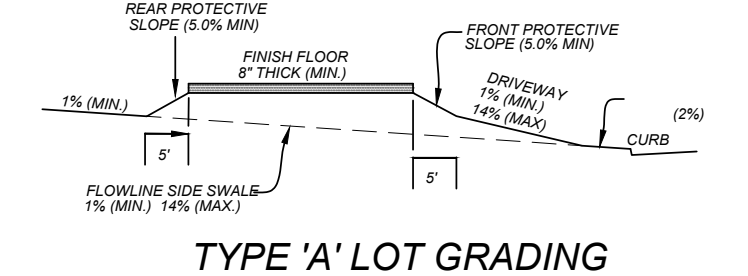
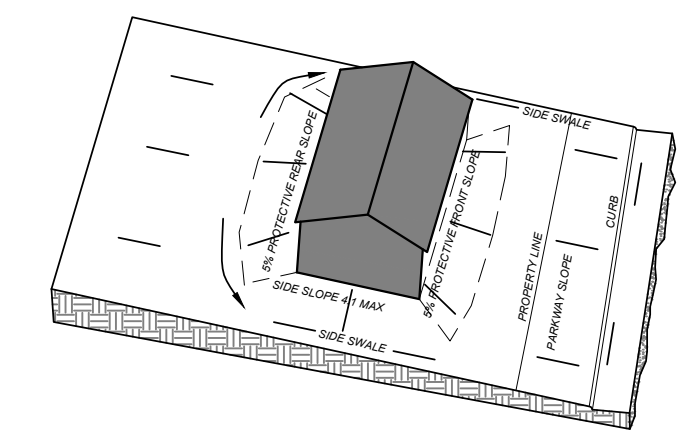


LOCATION MAP  
NOT-TO-SCALE

LEGEND

- E, G, T, & TV, E = GAS, ELECTRIC, TELEPHONE, CABLE TV, EASEMENT
- = FLOW ARROW
- (A) = LOT GRADE TYPE
- = PROPOSED DRIVEWAY LOCATION
- H.P. = HIGH POINT

UNPLATTED REMAINING  
PORTION OF 257.33 ACRES  
(DOC #20190051458 O.P.R.)  
OWNER: MEH HOLDING  
COMPANY LTD



TYPE 'C' LOT GRADING

GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
OVERALL GRADING PLAN

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN/OM CHECKED/CL  
SHEET NUMBER:

3.0

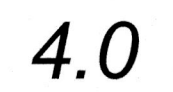
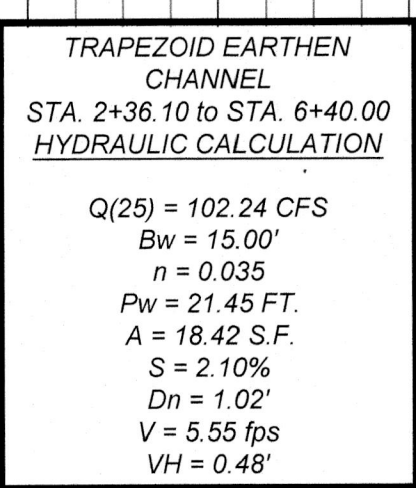
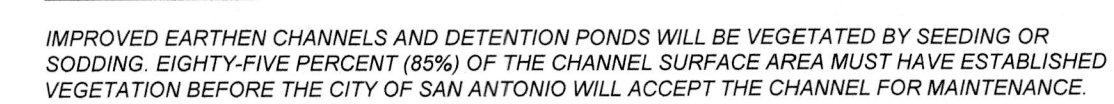


CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE PROTECTION OF ALL PERSONS AND PROPERTY FROM COLLAPSE OF EXCAVATIONS. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.





TRENCH EXCAVATION SAFETY PROTECTION

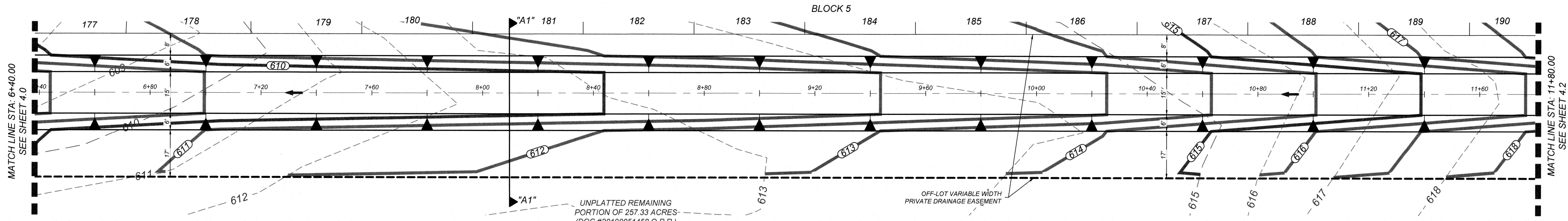
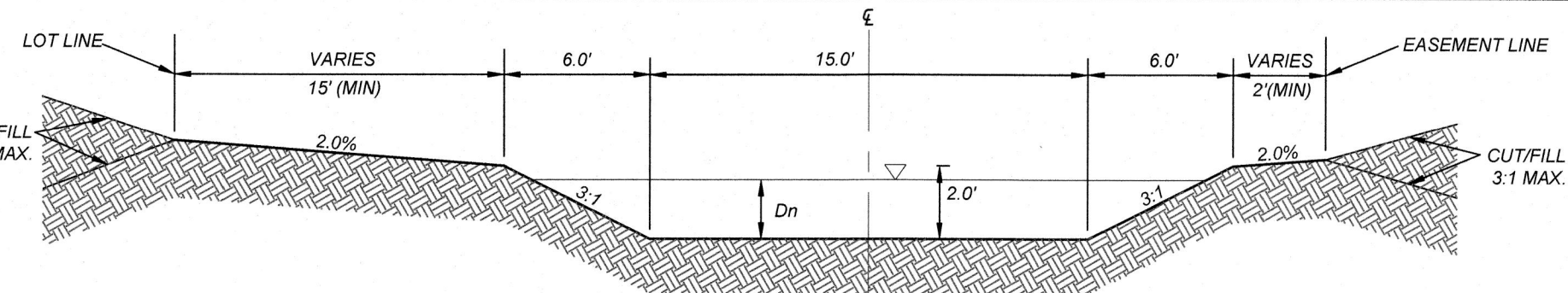
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

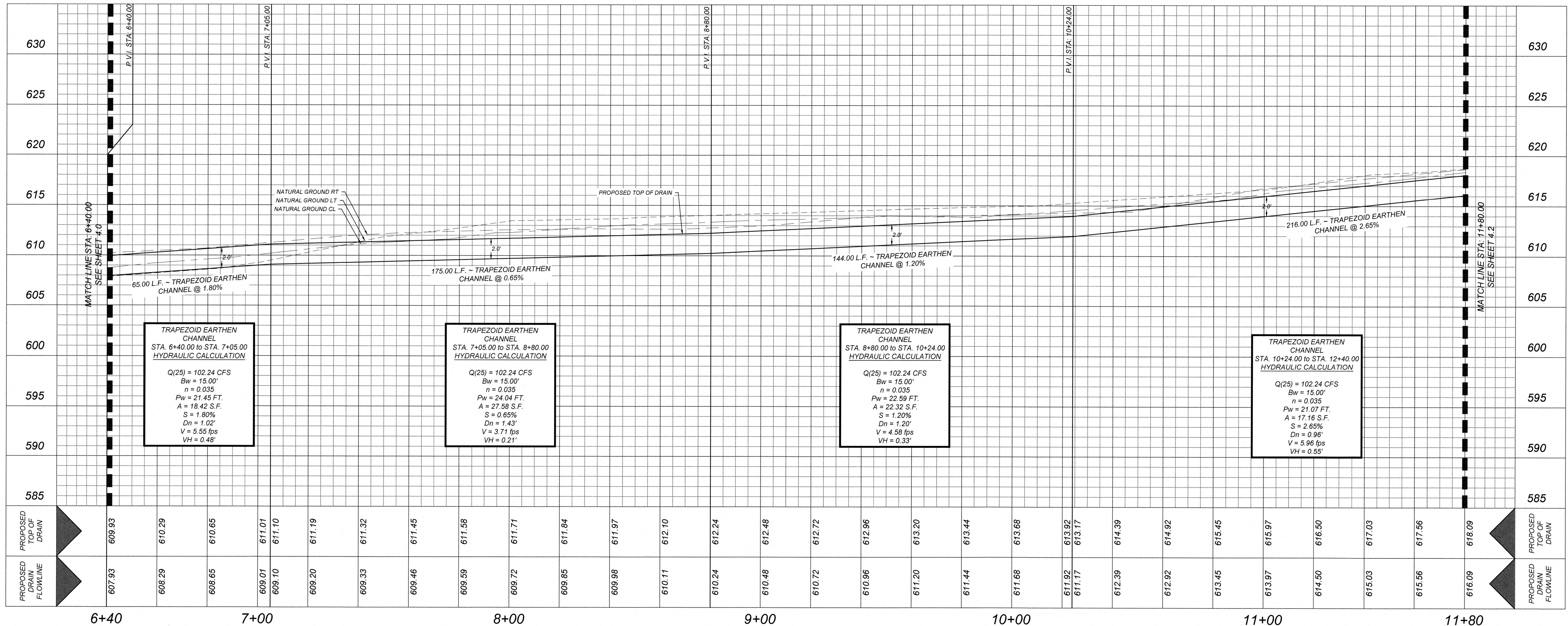
NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.



PRIVATE DRAIN "A"  
STA: 6+40.00 - STA: 11+80.00

HORZ SCALE: 1"=20'  
VERT SCALE: 1"=5'



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
PRIVATE DRAIN "A" PLAN & PROFILE (SHEET 2 OF 3)

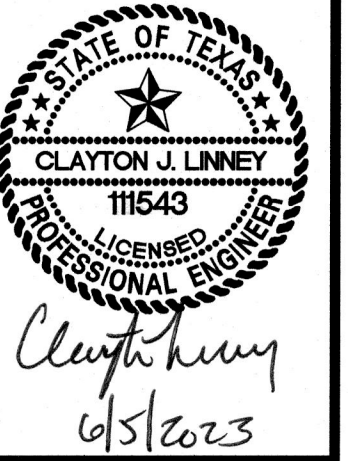
PLAT NO.  
22-11800017  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

4.1

K&W  
ENGINEERS + SURVEYING  
3421 Passano Pkwy, Suite 200, San Antonio, TX 78231  
Phone #: (210) 979-6444 Fax #: (210) 979-6441  
Toll Free: 800-368-1863 Email: info@kandw.com

ISSUE DATE

REVISIONS

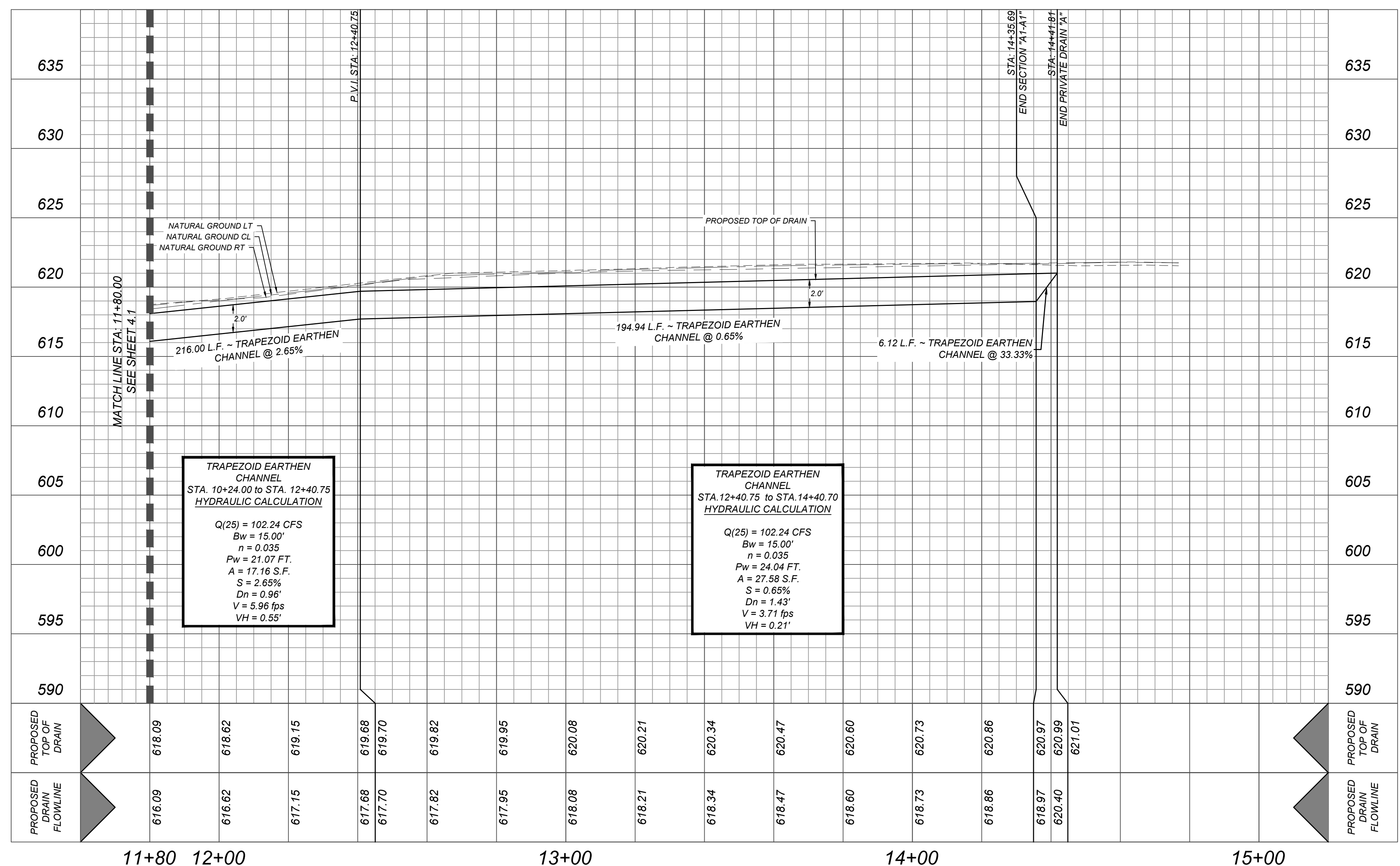
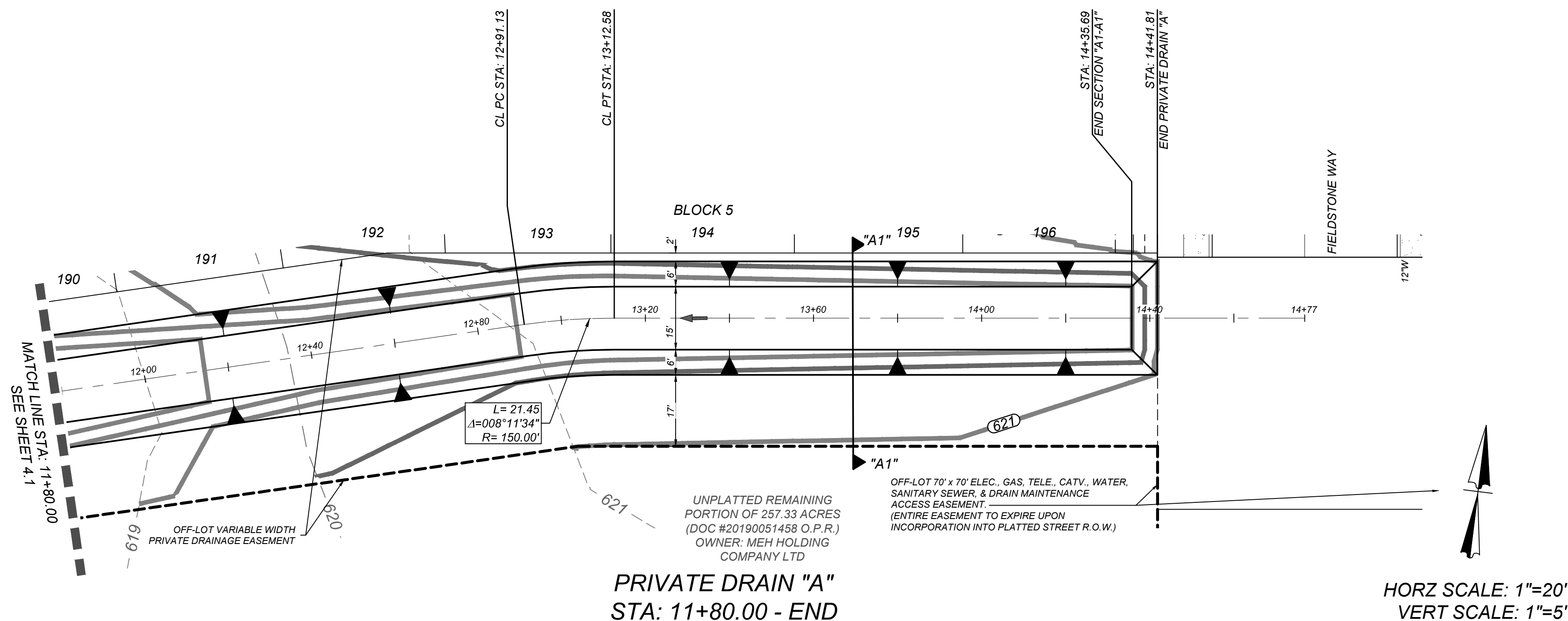
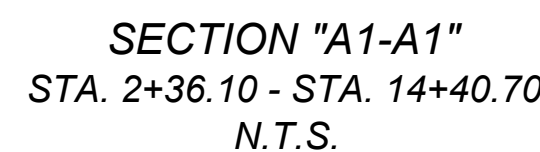




CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR  
STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY,  
SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE  
DESIGNER'S DESIGN AND CALCULATIONS AND SHALL BE RESPONSIBLE FOR  
IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS,  
PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE  
SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE  
PROTECTION OF ALL PERSONNEL AND EQUIPMENT FROM COLLAPSE OF THE TRENCH.  
OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR  
CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT  
SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA  
STANDARDS FOR TRENCH EXCAVATIONS AND ACTIVITIES OF INDIVIDUALS WORKING  
IN AND AROUND TRENCH EXCAVATION.

**NOTE**

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT





# TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

## CAUTION!!

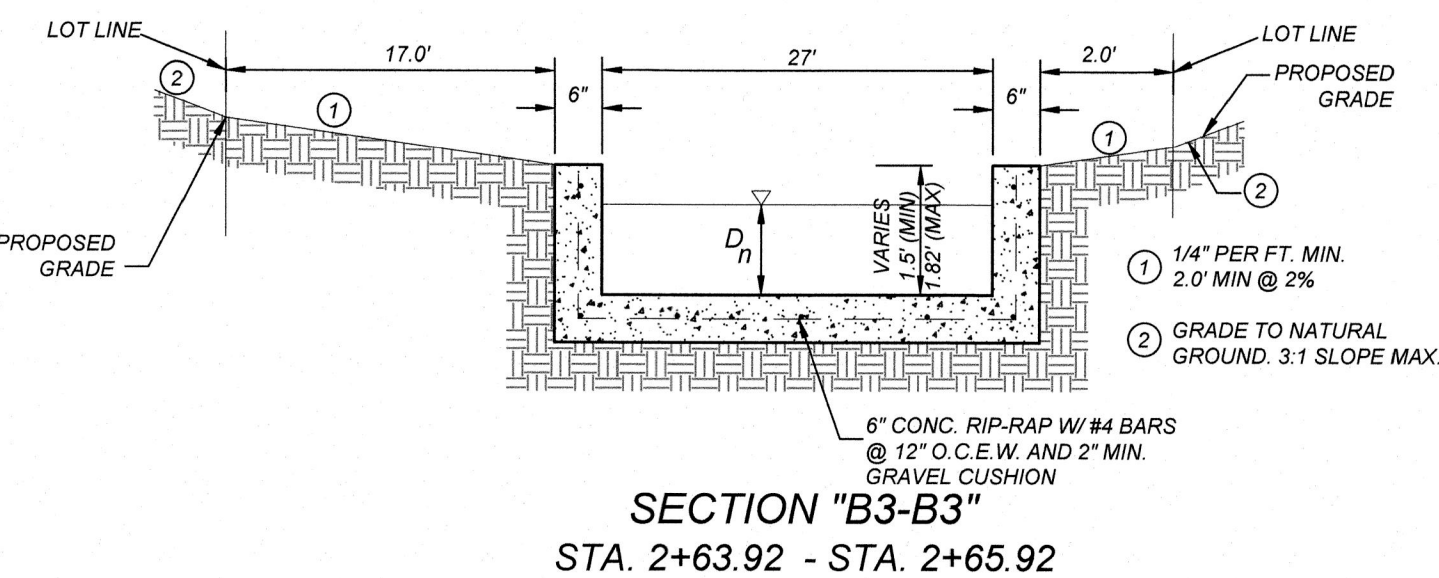
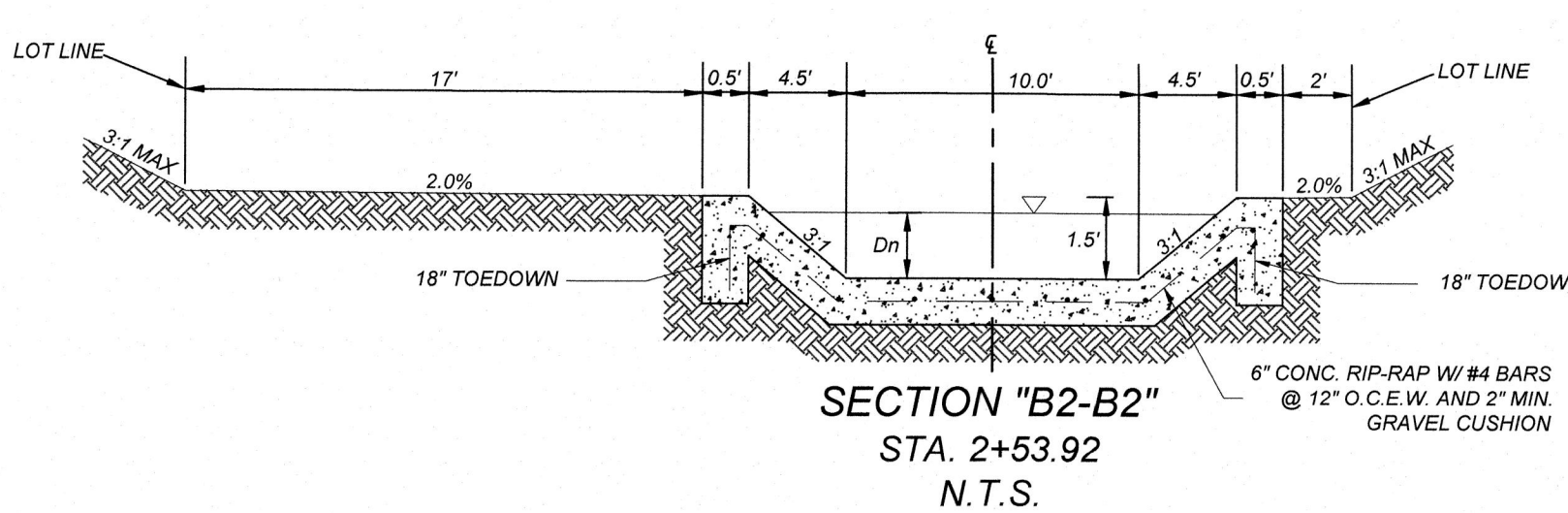
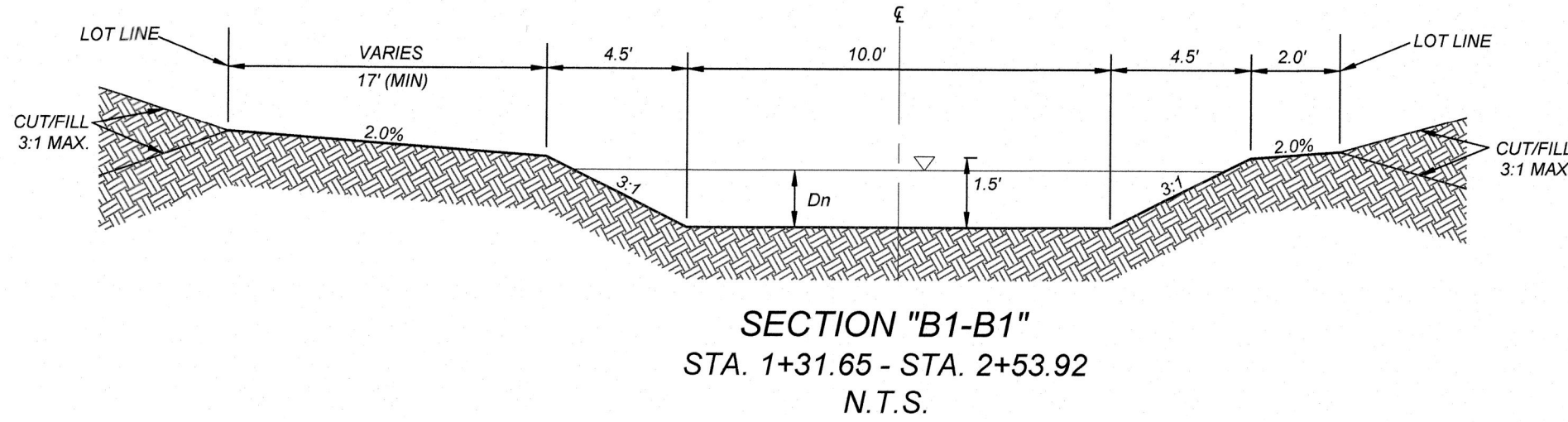
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT T-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

## NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

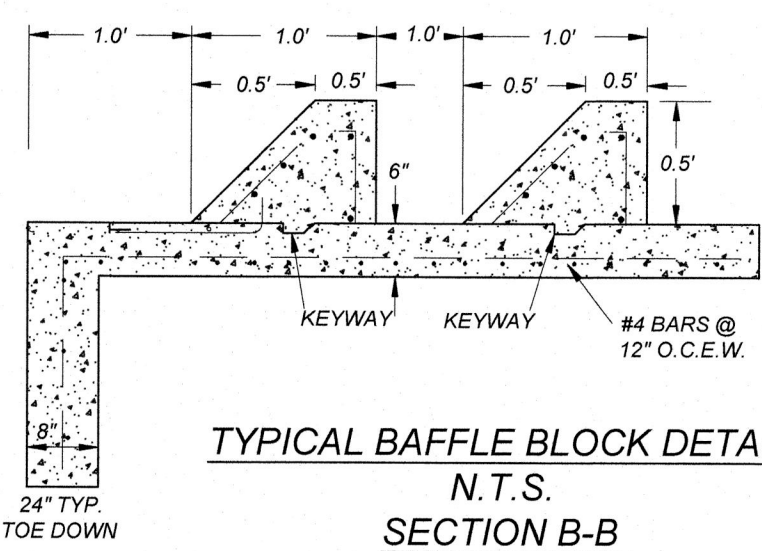
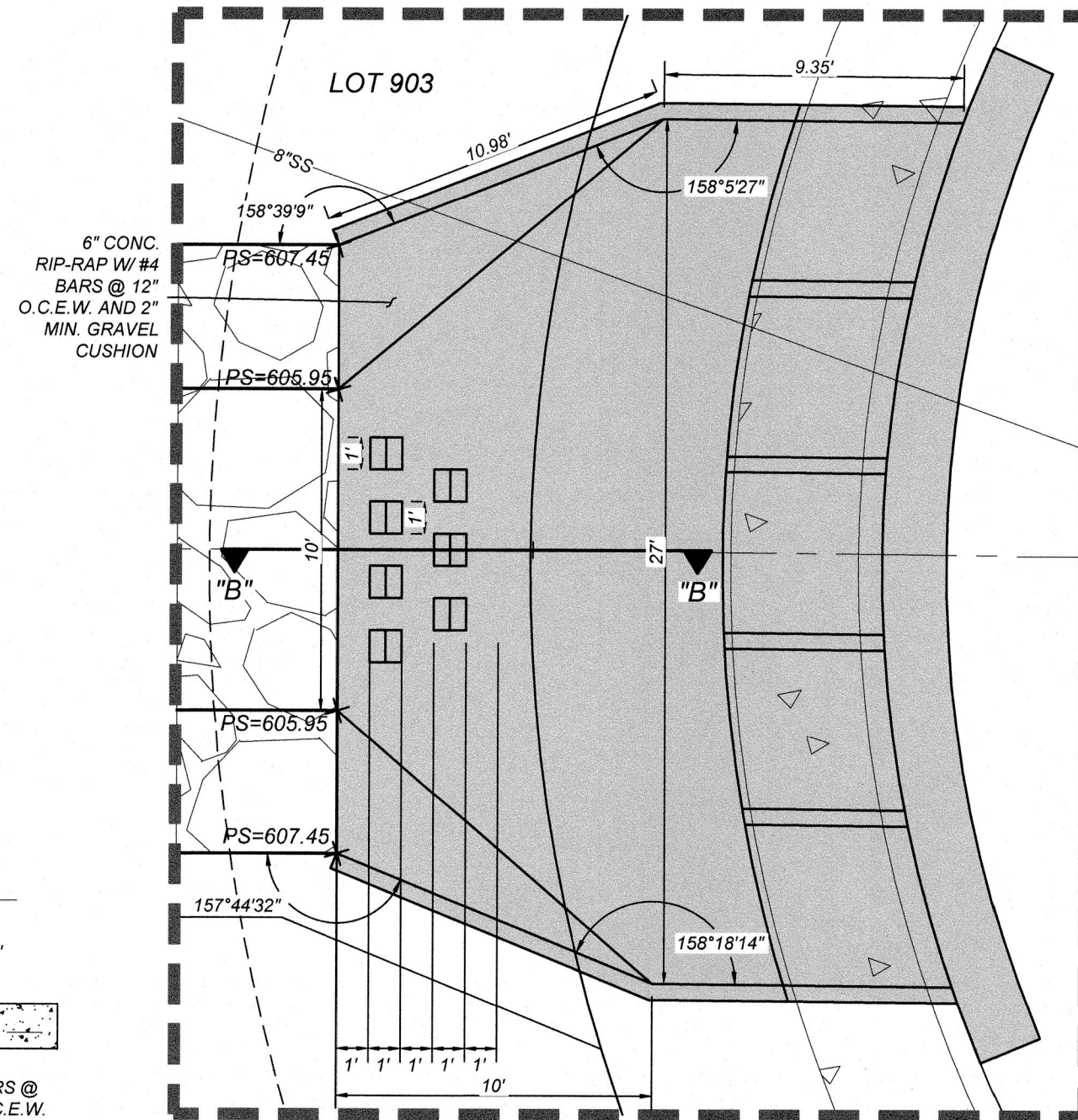
## NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

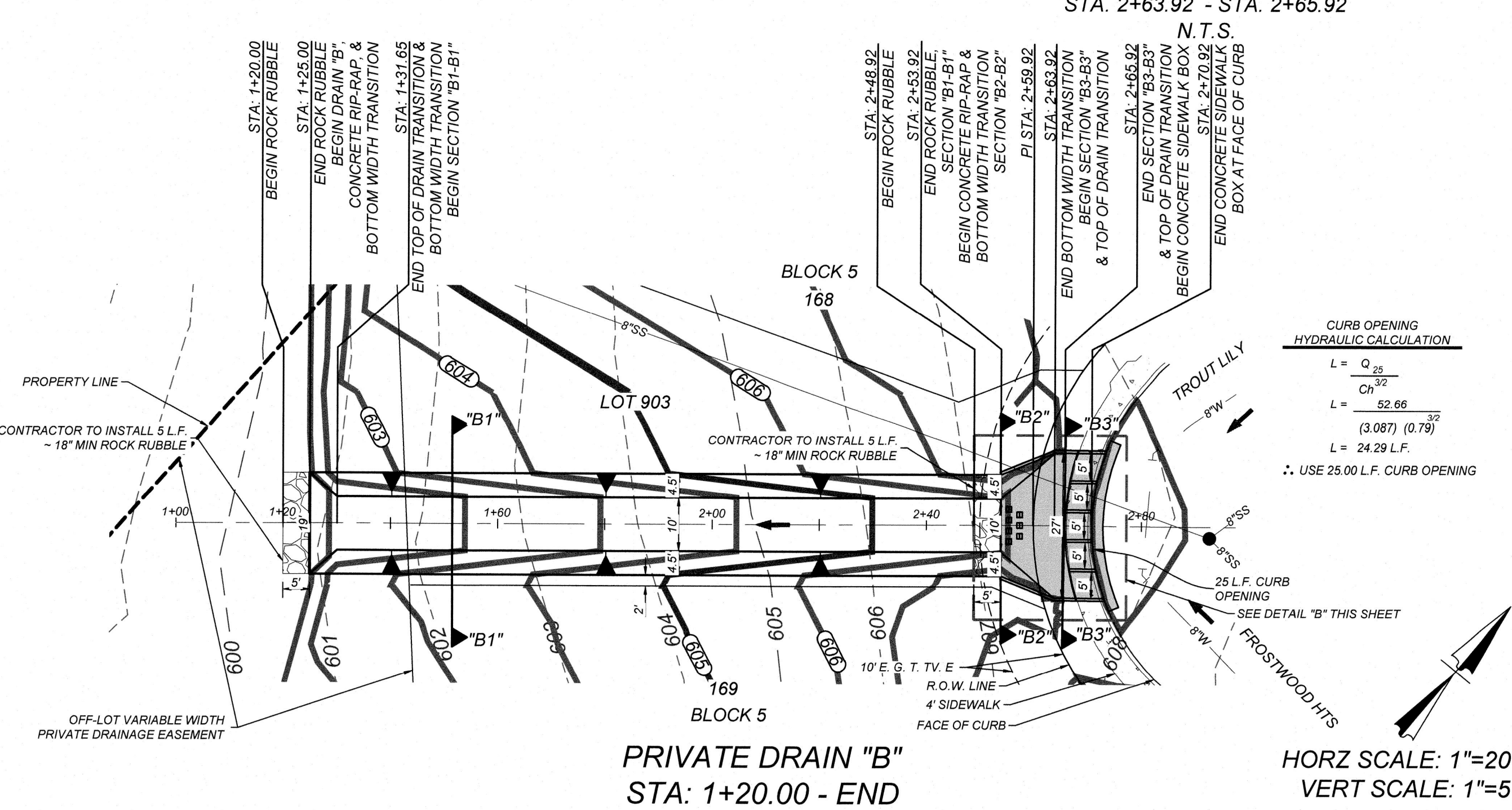


## BAFFLE BLOCK CALCULATIONS (ST. ANTHONY FALLS METHOD)

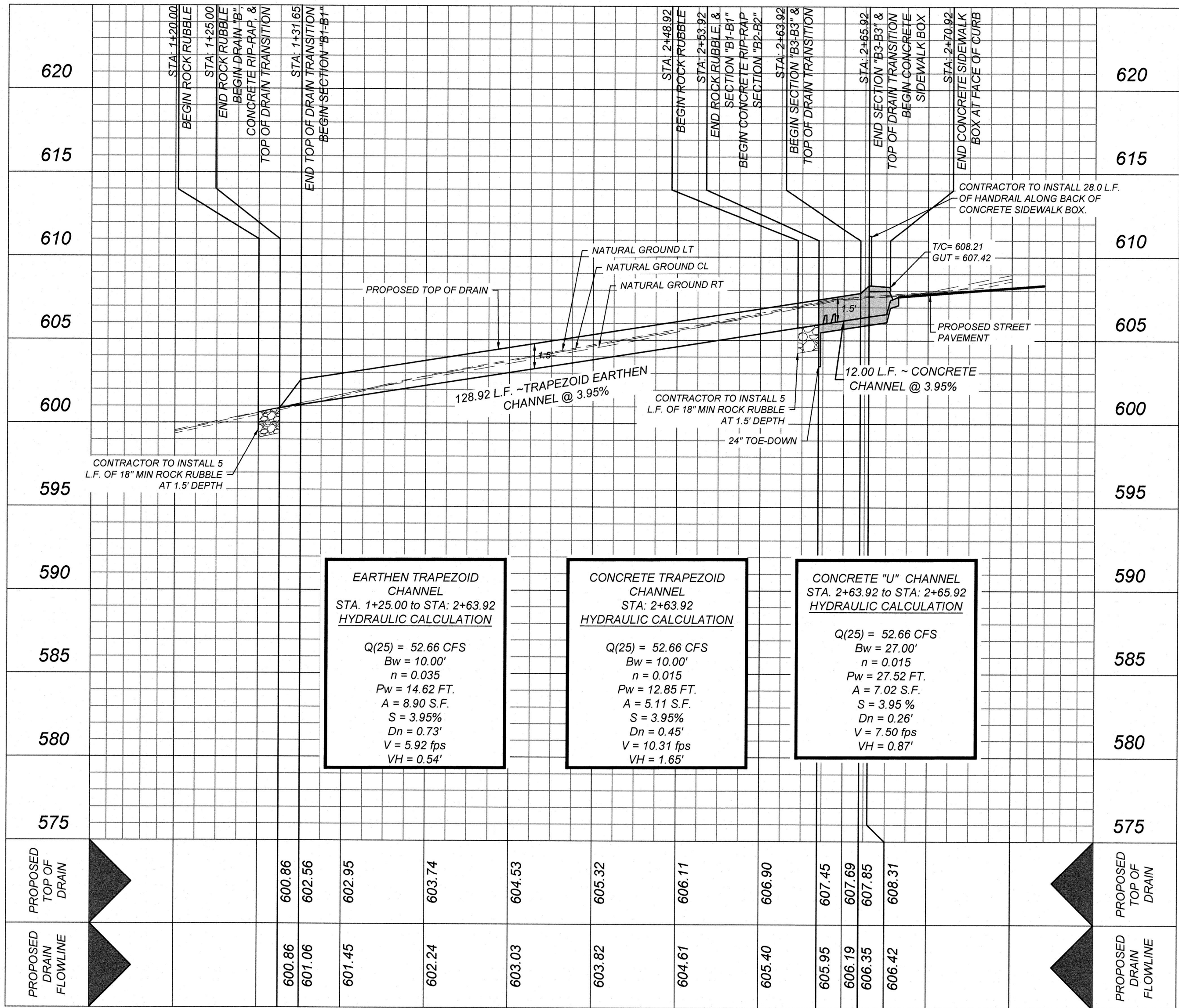
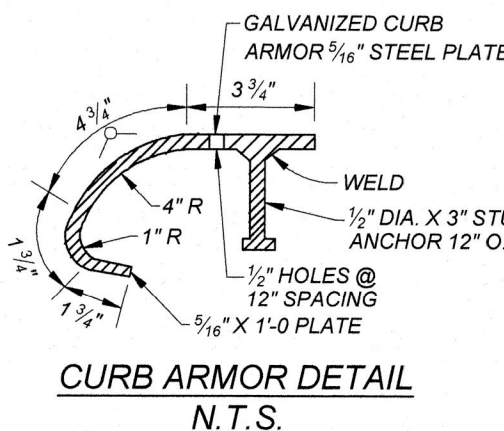
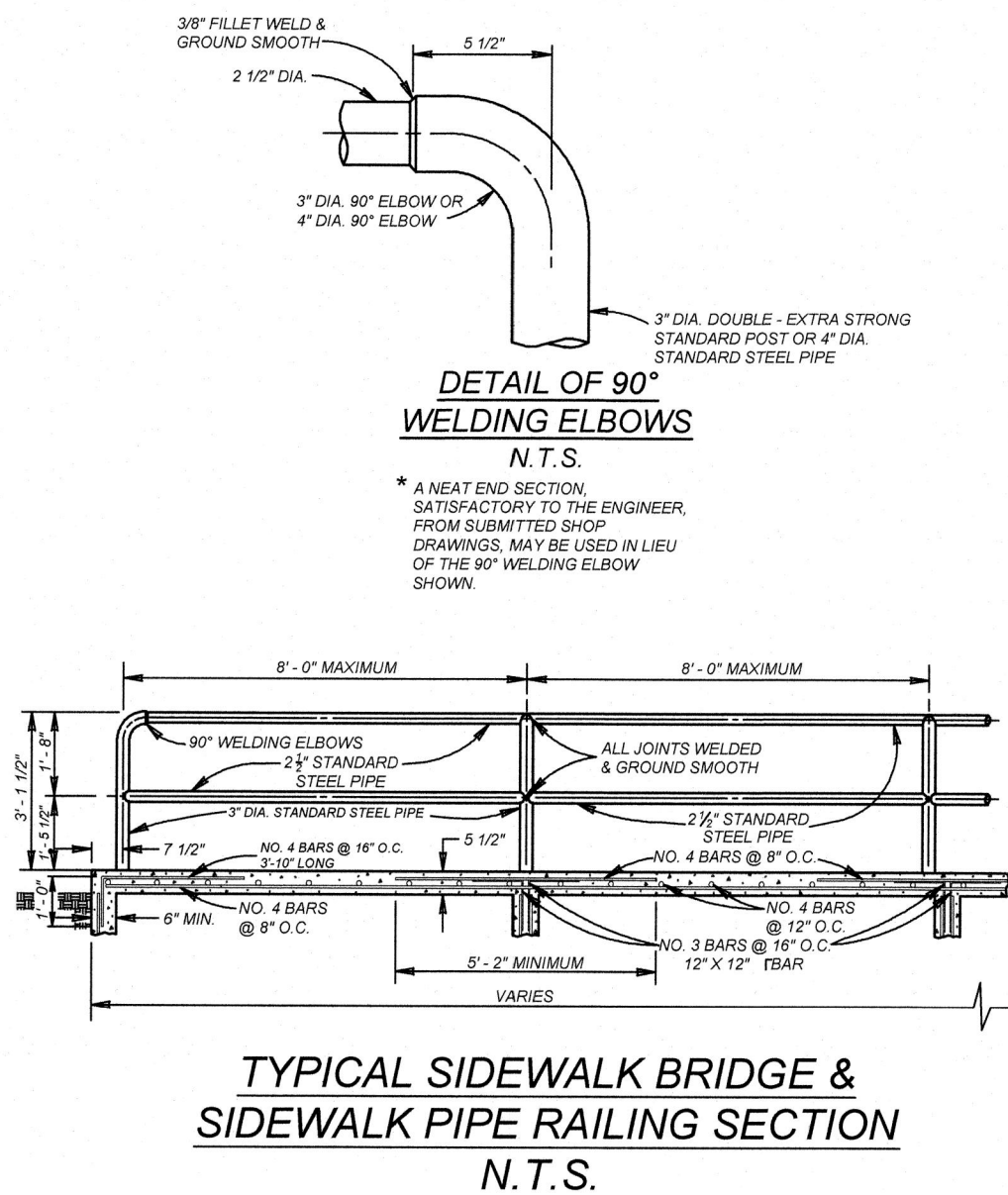
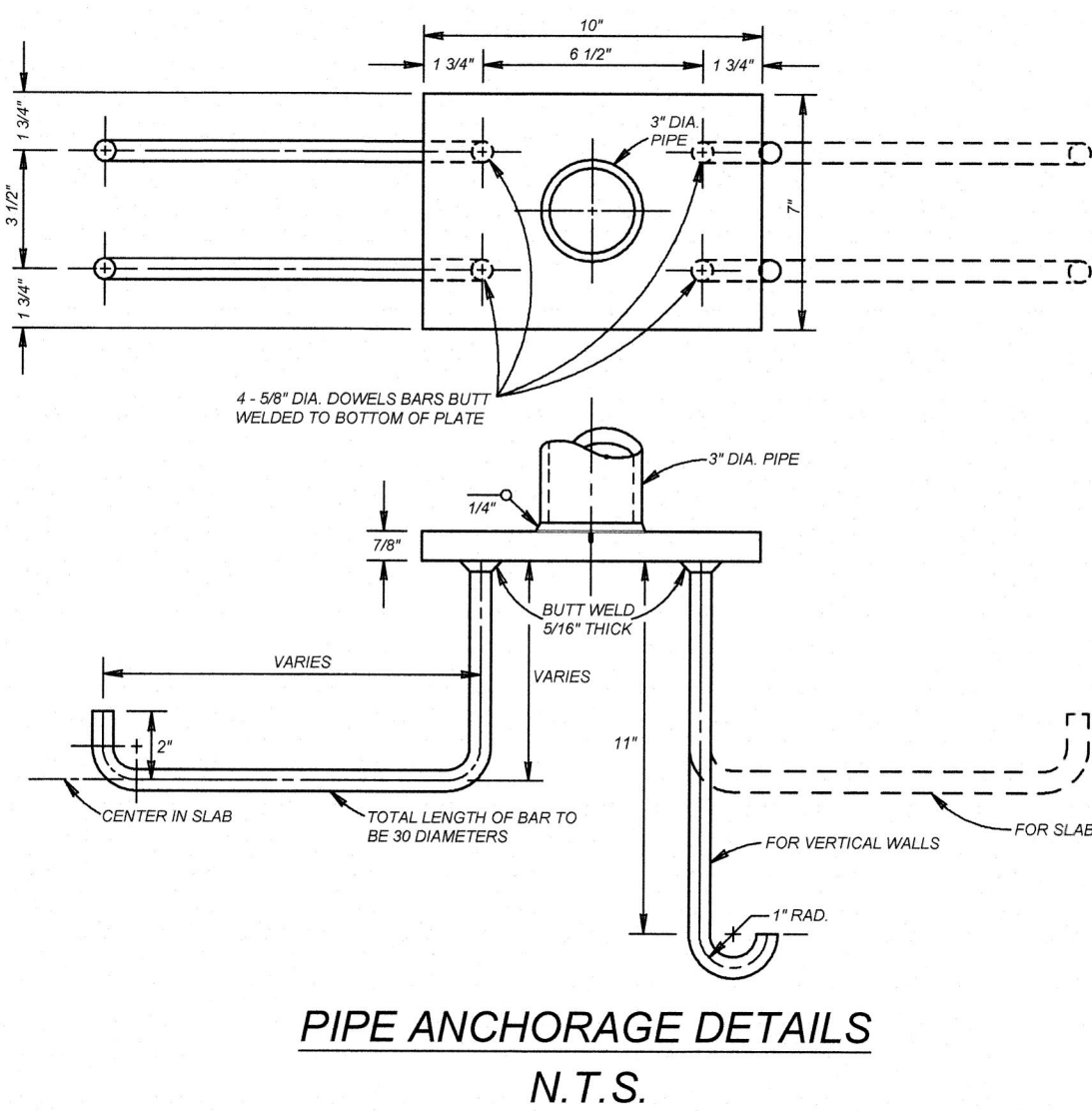
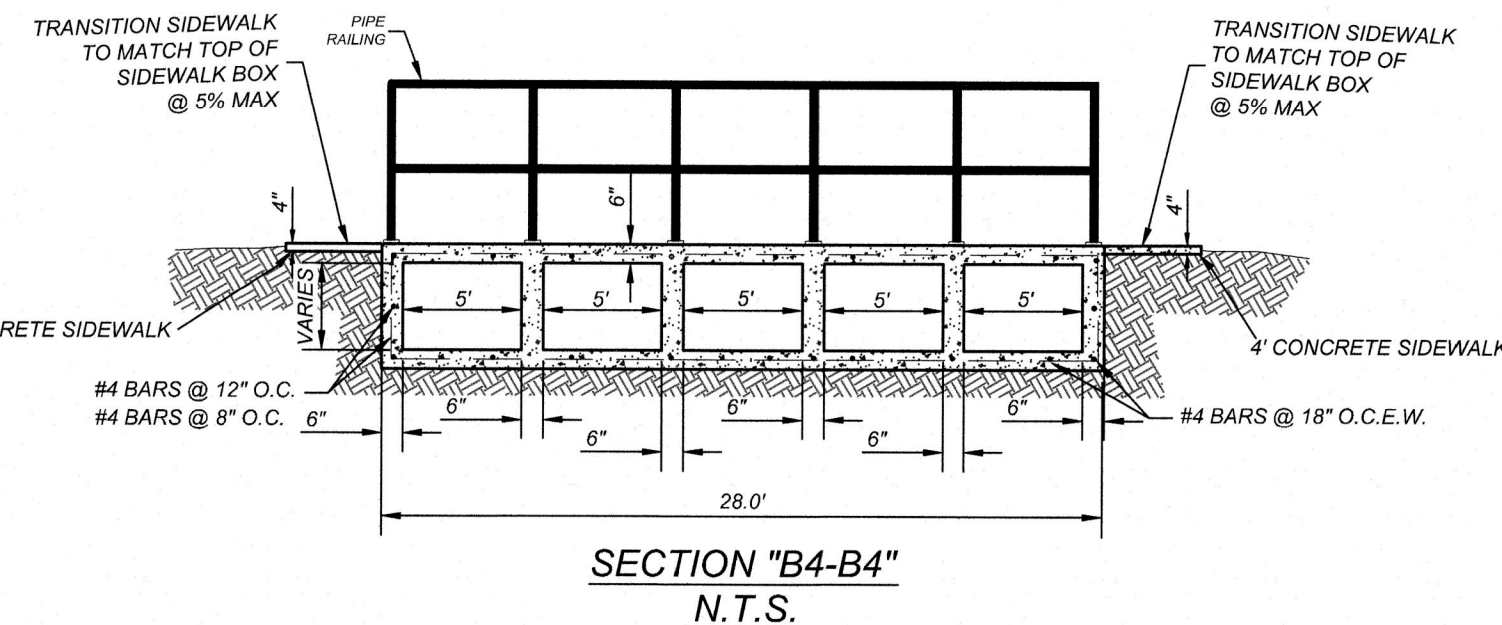
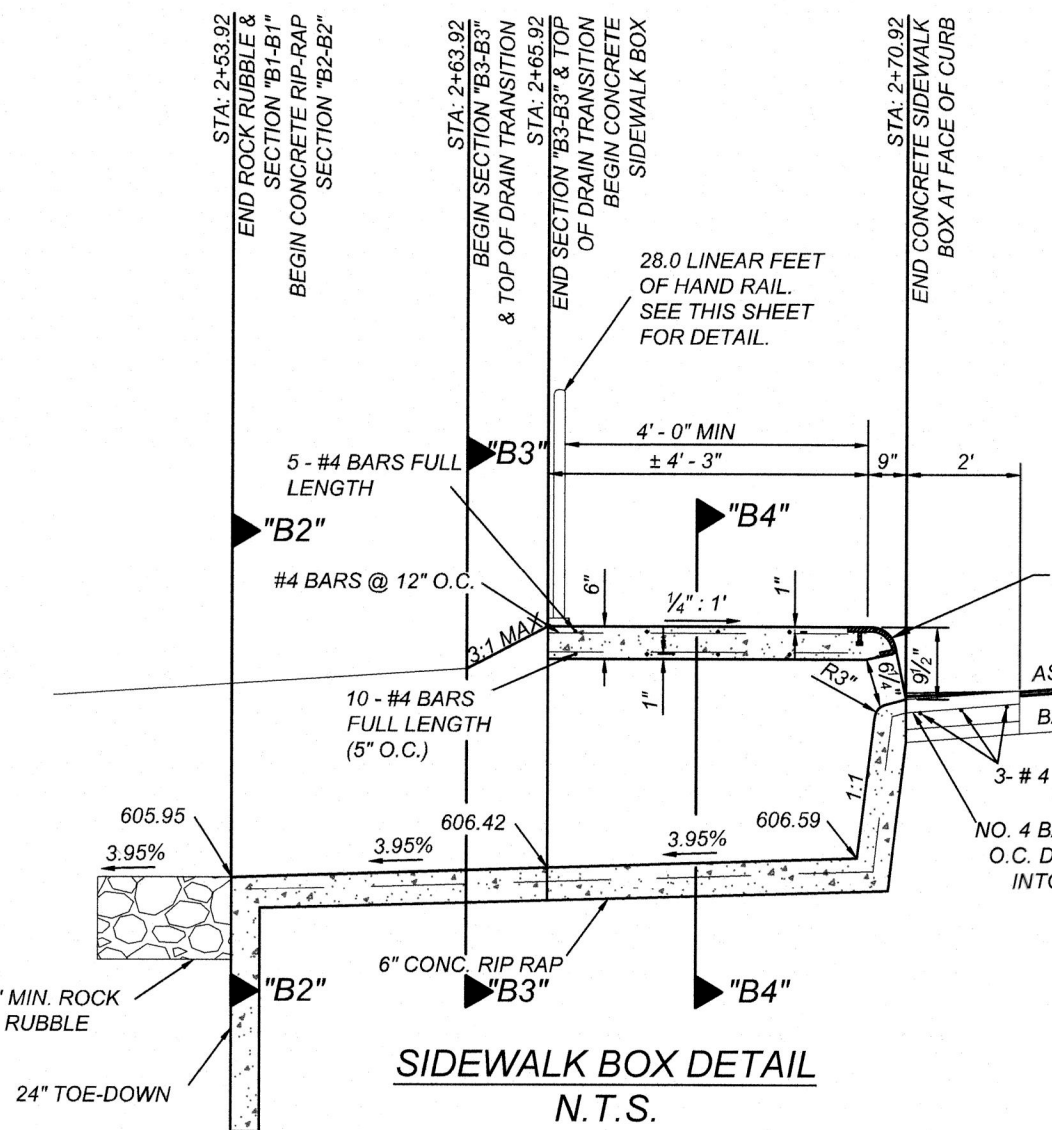
Q(25) = 52.66 CFS  
BOTTOM WIDTH UPSTREAM = 10.0 FT  
BOTTOM WIDTH DOWNSTREAM = 10.0 FT  
Y1 = 0.45' (DEPTH BEFORE JUMP)  
Y2 = 1.46' (DEPTH AFTER JUMP)  
WIDTH OF BLOCKS = 0.75(Y1) = 0.34 FT. (USE 1.0 FT.)  
SPACE BETWEEN BLOCKS = 0.75(Y1) = 0.34 FT. (USE 0.50 FT.)  
HEIGHT OF BLOCKS = Y1 + 0.45 FT. (USE 0.50 FT.)  
# OF BLOCKS ACROSS BOTTOM = 4  
% OF FLOOR COVERED WITH BLOCKS = 4 (1.0 FT.) / 10.0 FT. = 40%  
(% MUST BE BETWEEN 40% AND 55%)  
DEPTH OF TAILWATER (Y2)  
FROUDE NUMBER BEFORE JUMP = F1 = 2.87  
FROUDE NUMBER AFTER JUMP = F2 = 0.42  
LENGTH OF BASIN = LB = 4.5(Y2)/F1\*0.76 = 2.95 FT. (USE 10.0 FT.)  
DISTANCE TO FLOOR BLOCKS = LB/3 = 0.98 FT. (USE 1.0 FT.)  
HEIGHT OF MAX TAILWATER DEPTH:  
Z = Y2/3 = 0.49 FT.  
Y2' = (1.10 - F1^2 / 120) \* Y2 = H = Z + Y2' = 1.51 FT.  
VELOCITY AFTER JUMP:  
V = Q/A  
A = Y2' \* (B + T) / 2 = 14.60 SQ. FT.  
V = 52.66 / 14.60 = 3.61 F.P.S.



DETAIL "B"  
SCALE: 1"=5'



HORZ SCALE: 1"=20'  
VERT SCALE: 1"=5'



GATES SUBDIVISION UNIT 2

BEXAR COUNTY, TX

PRIVATE DRAIN "B" PLAN & PROFILE

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

4.3



TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!!

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES. SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

STREETSCAPE TREE PLANTING NOTES

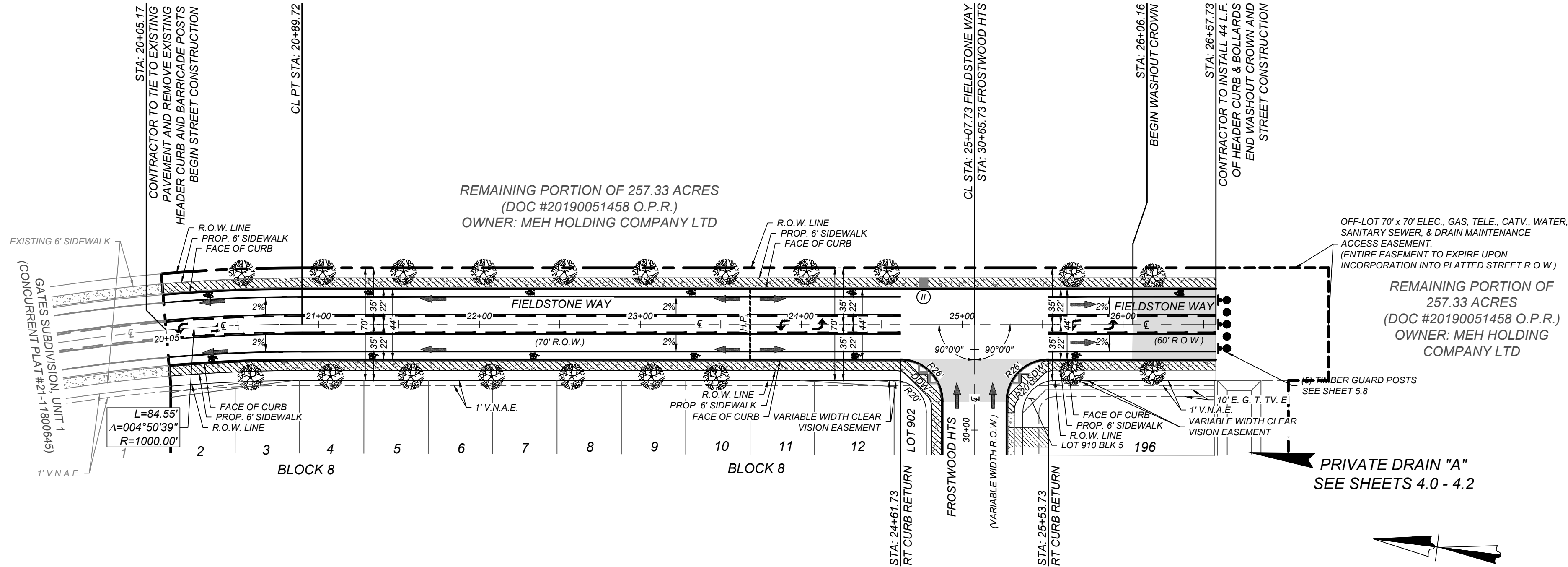
- LARGE TREES (PER UDC) TO BE PLANTED EVERY 50 FEET OR CLUSTERS ALONG FIELDSTONE WAY R.O.W. PER "NEW TREE PLANTING DETAIL ON SHEET 5.9."
- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFIRM WITH THE STREETSCAPE PLANTING STANDARDS.
  - DEVELOPER TO PROVIDE MAINTENANCE ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
  - ALL LANDSCAPE SHALL COMPLY WITH THE CLEAR VISION AREA AS DEFINED BY THE LATEST VERSION OF AASHTO'S "A" POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.
  - TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC. IF OVERHEAD ELECTRIC IS REQUIRED BY OPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREE, PER THE UDC.

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

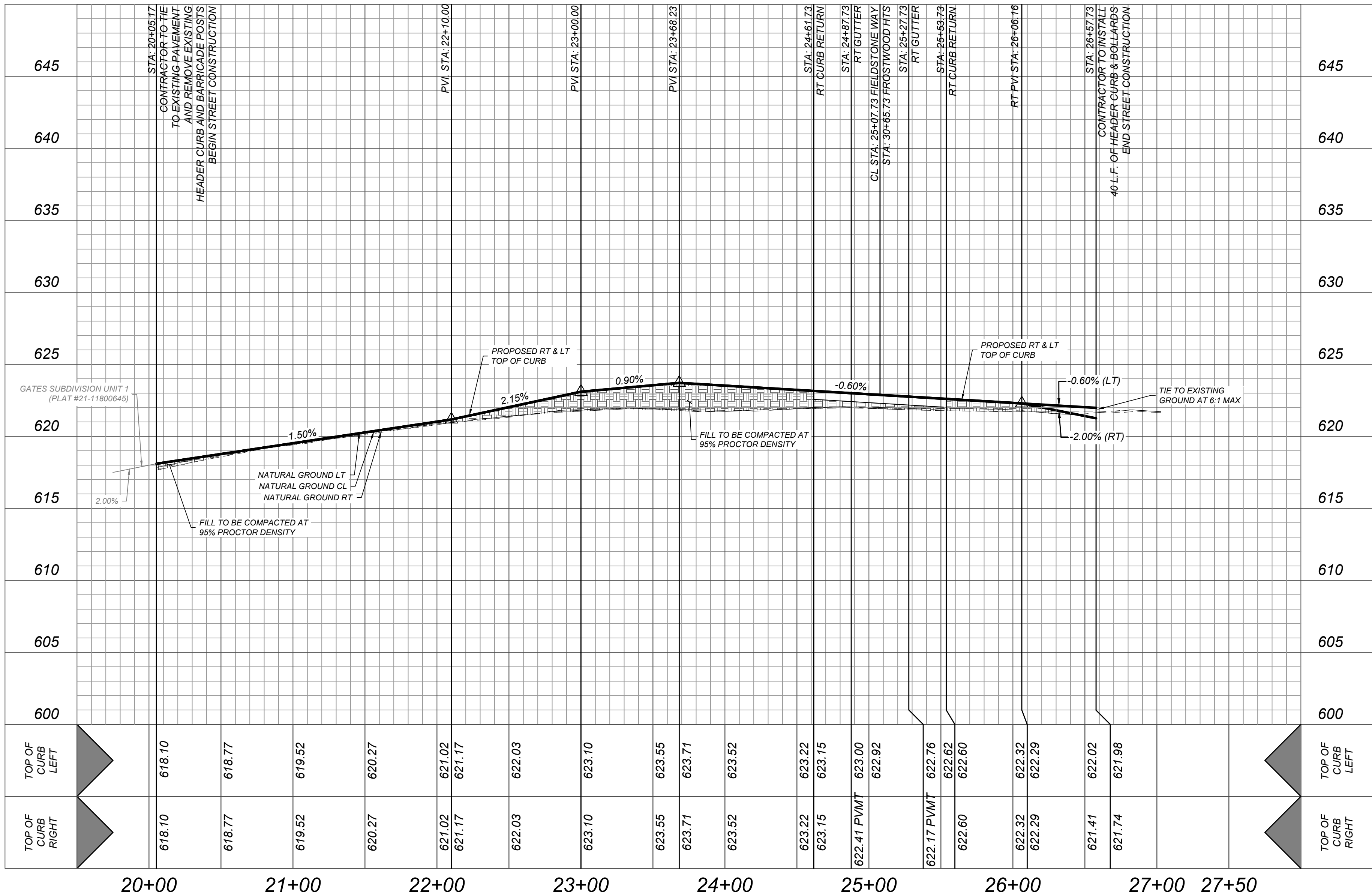
LEGEND

- R.O.W. = RIGHT OF WAY  
G.E.T.T.V.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT  
= FLOW ARROW  
= WASHOUT CROWN  
① = WHEELCHAIR RAMP TYPE I SEE SHEET 5.6  
② = WHEELCHAIR RAMP TYPE II SEE SHEET 5.6  
SDW = SINGLE DIRECTIONAL WHEELCHAIR RAMP  
DDW = DUAL DIRECTIONAL WHEELCHAIR RAMP
- ===== = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER  
===== = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION  
===== = PROPOSED DRIVEWAY LOCATION  
H.P. = HIGH POINT  
L.P. = LOW POINT  
===== = PROPOSED TOP OF CURB ELEVATION



FIELDSTONE WAY  
STA: 20+05.17 - END

HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
FIELDSTONE WAY PLAN & PROFILE

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN/OM: CHECKED/CL  
SHEET NUMBER:



Date: Feb 21, 2023 9:37am User: ID: ecorona  
File: P:\05043005\Design\Civil\STREET\12054305.dwg

TRENCH EXCAVATION SAFETY PROTECTION

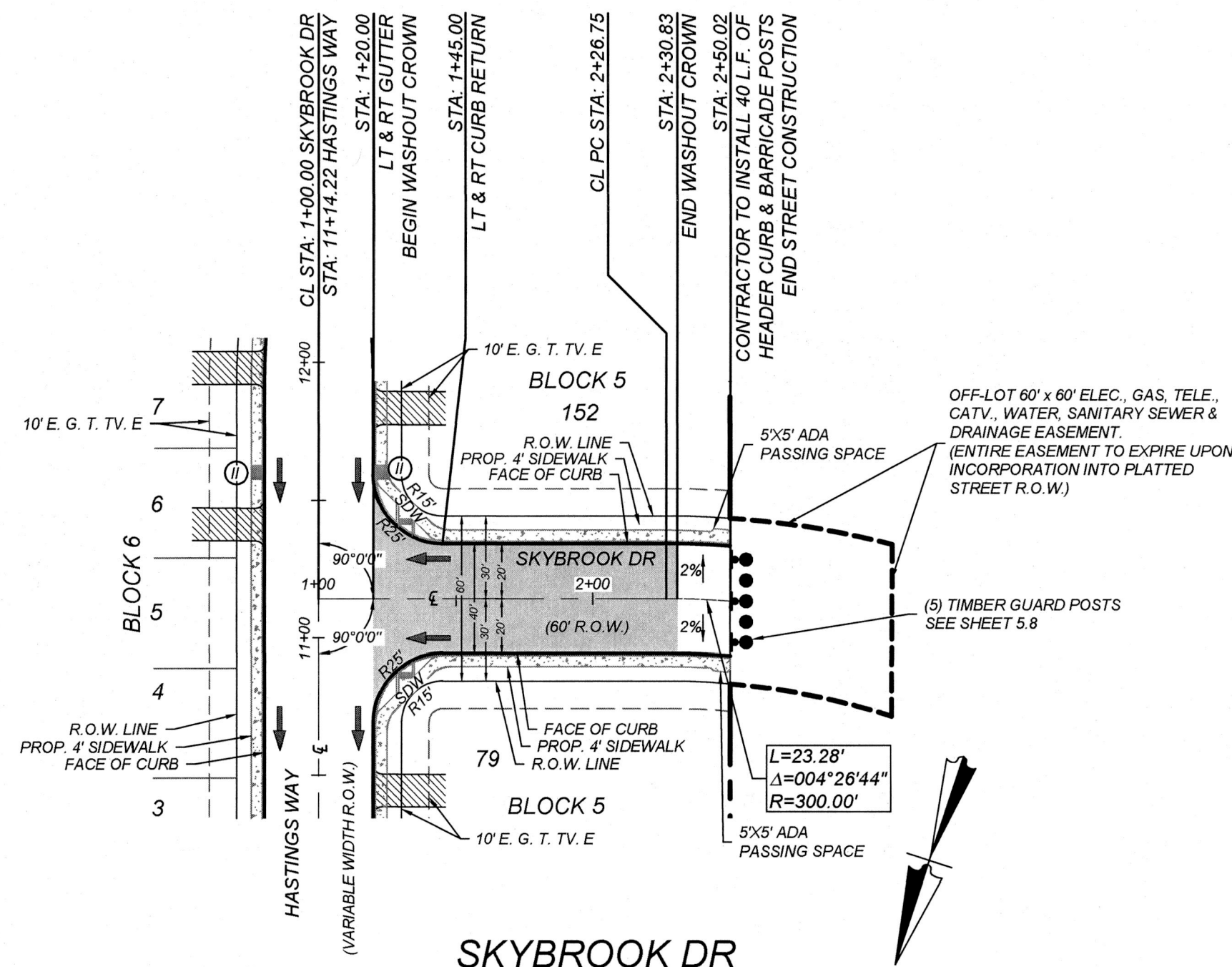
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!:

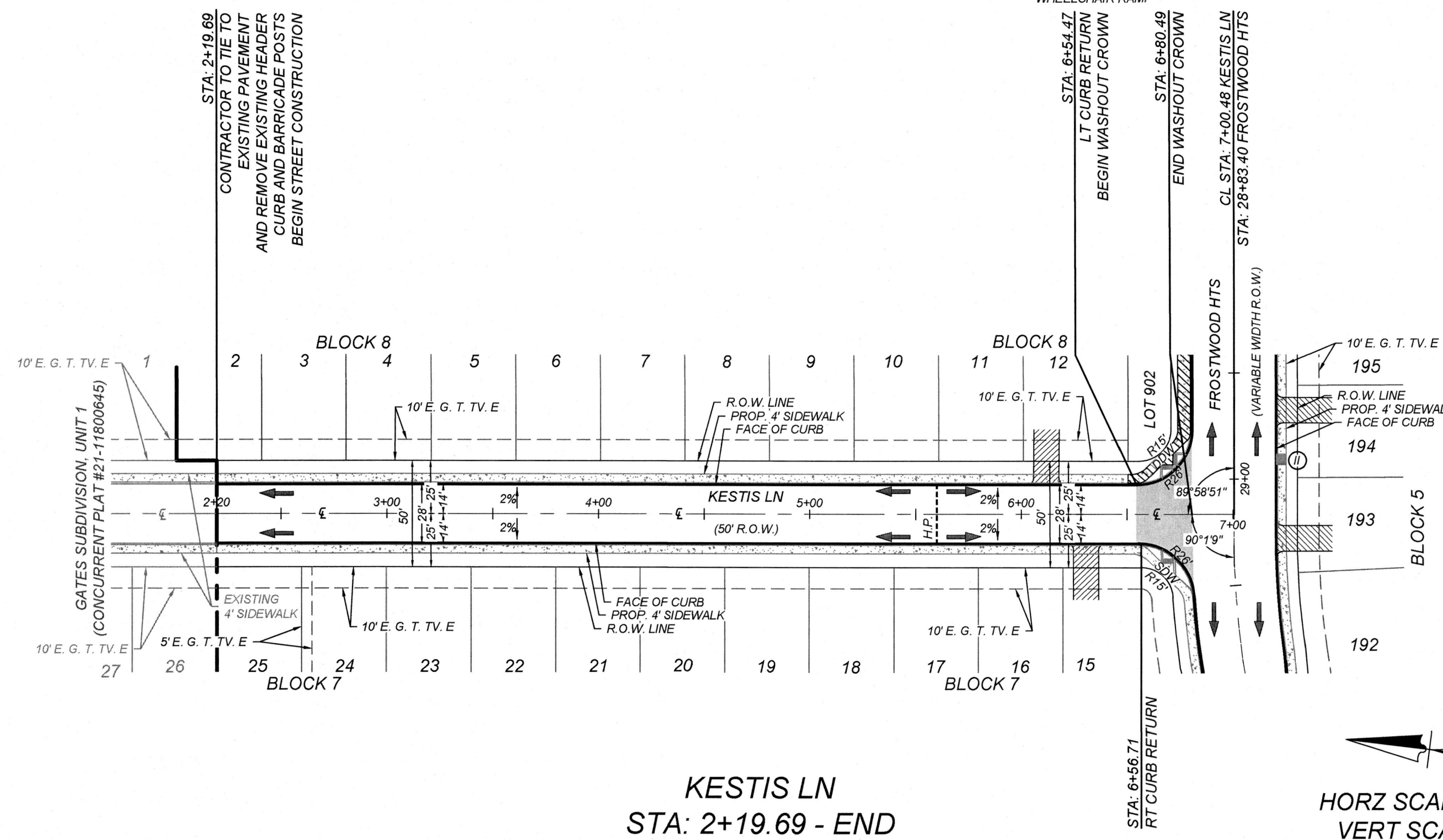
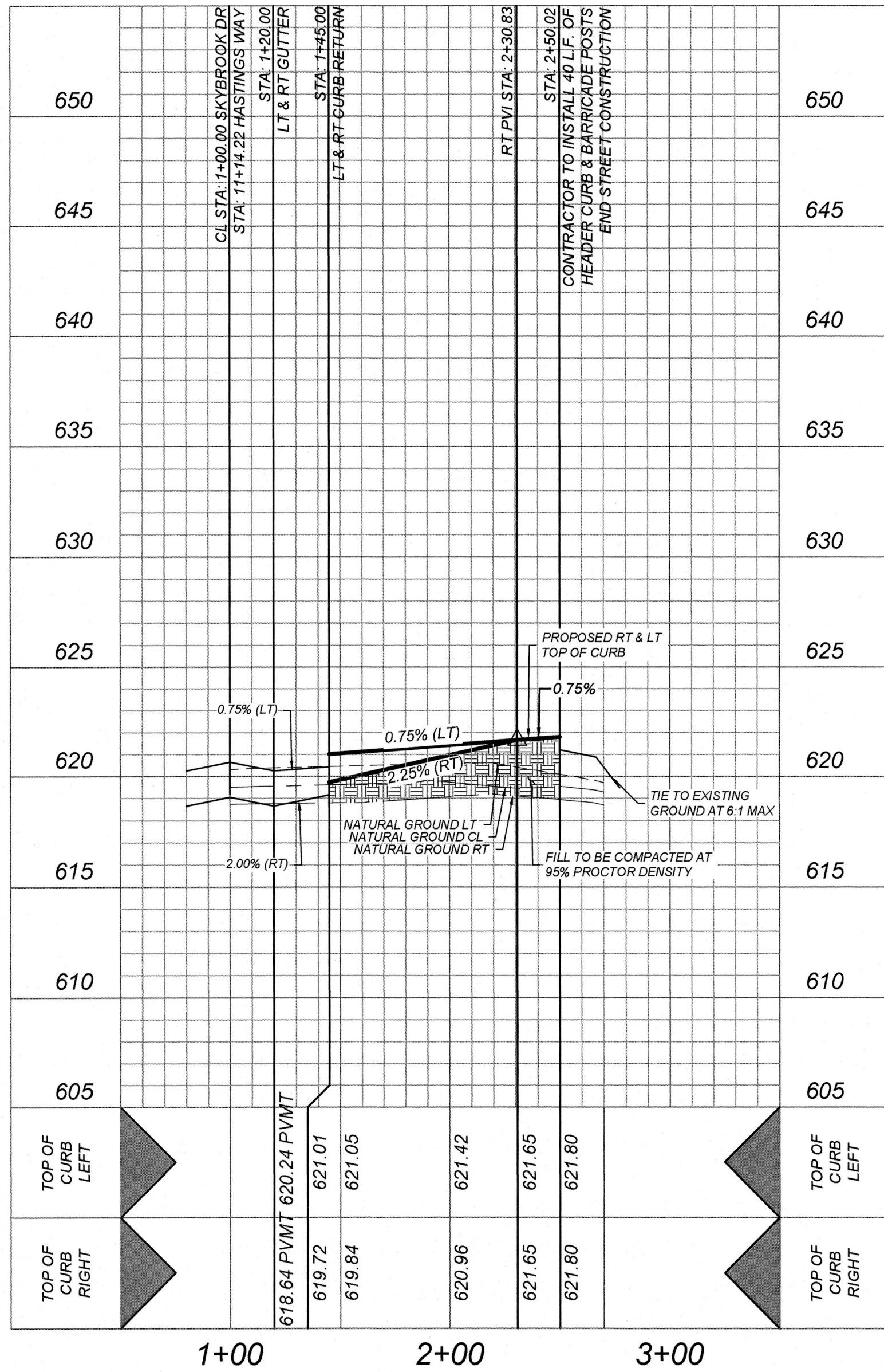
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

BEXAR COUNTY R.O.W. NOTE

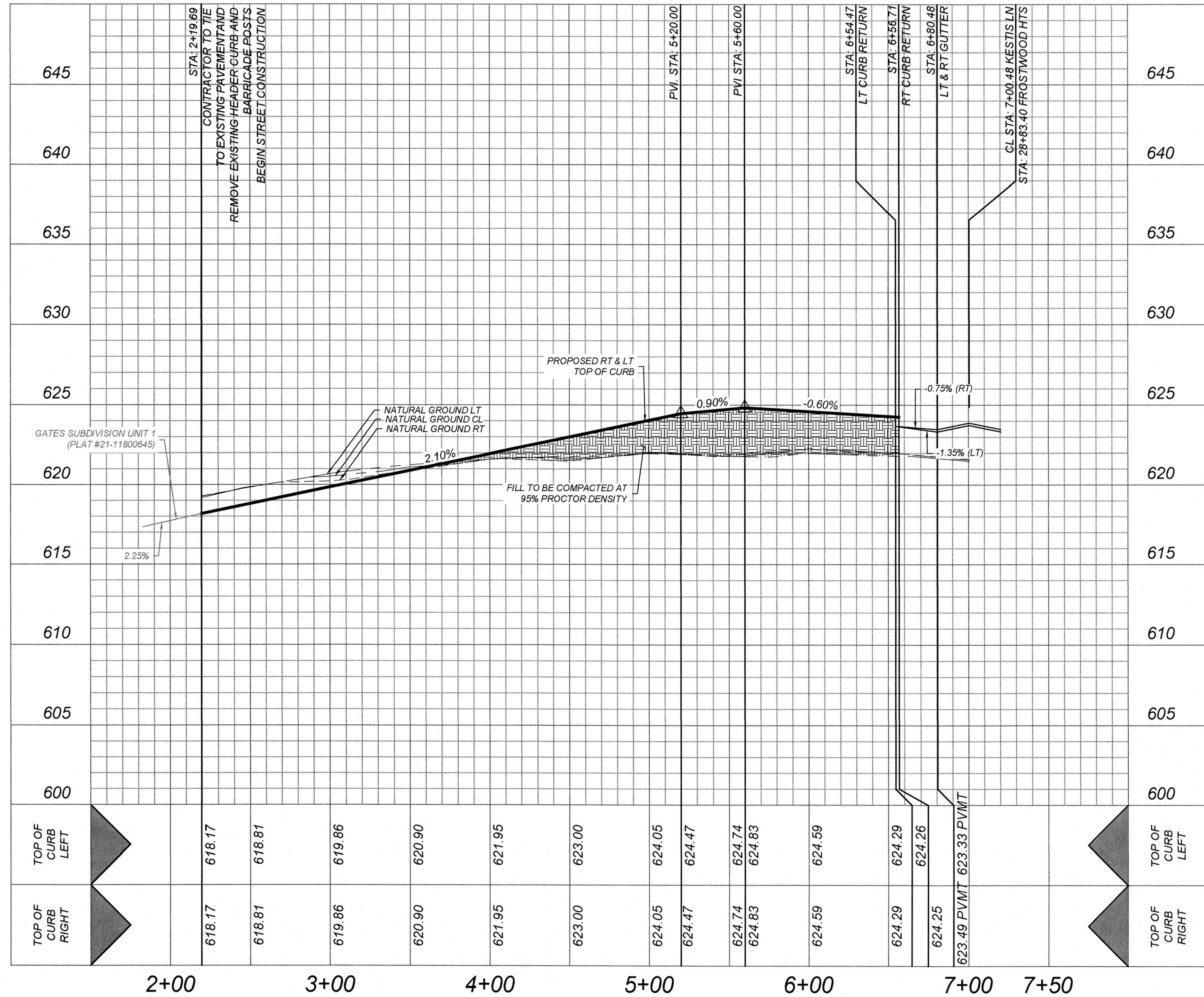
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



SKYBROOK DR  
STA: 1+00.00 - END

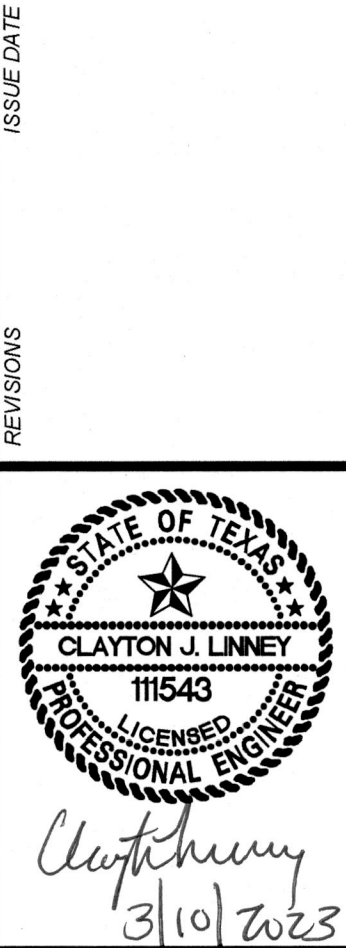


KESTIS LN  
STA: 2+19.69 - END



LEGEND

- R.O.W. = RIGHT OF WAY
- G.E.T.V.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT
- FLOW ARROW = FLOW ARROW
- WASHOUT CROWN = WASHOUT CROWN
- WHEELCHAIR RAMP TYPE I = WHEELCHAIR RAMP TYPE I SEE SHEET 5.6
- WHEELCHAIR RAMP TYPE II = WHEELCHAIR RAMP TYPE II SEE SHEET 5.6
- SDW = SINGLE DIRECTIONAL WHEELCHAIR RAMP
- DDW = DUAL DIRECTIONAL WHEELCHAIR RAMP
- SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
- SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- PROPOSED DRIVEWAY LOCATION
- H.P. = HIGH POINT
- L.P. = LOW POINT
- PROPOSED TOP OF CURB ELEVATION



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
SKYBROOK DR & KESTIS LN PLAN & PROFILE

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM  
CHECKED: CL  
SHEET NUMBER:



TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!!

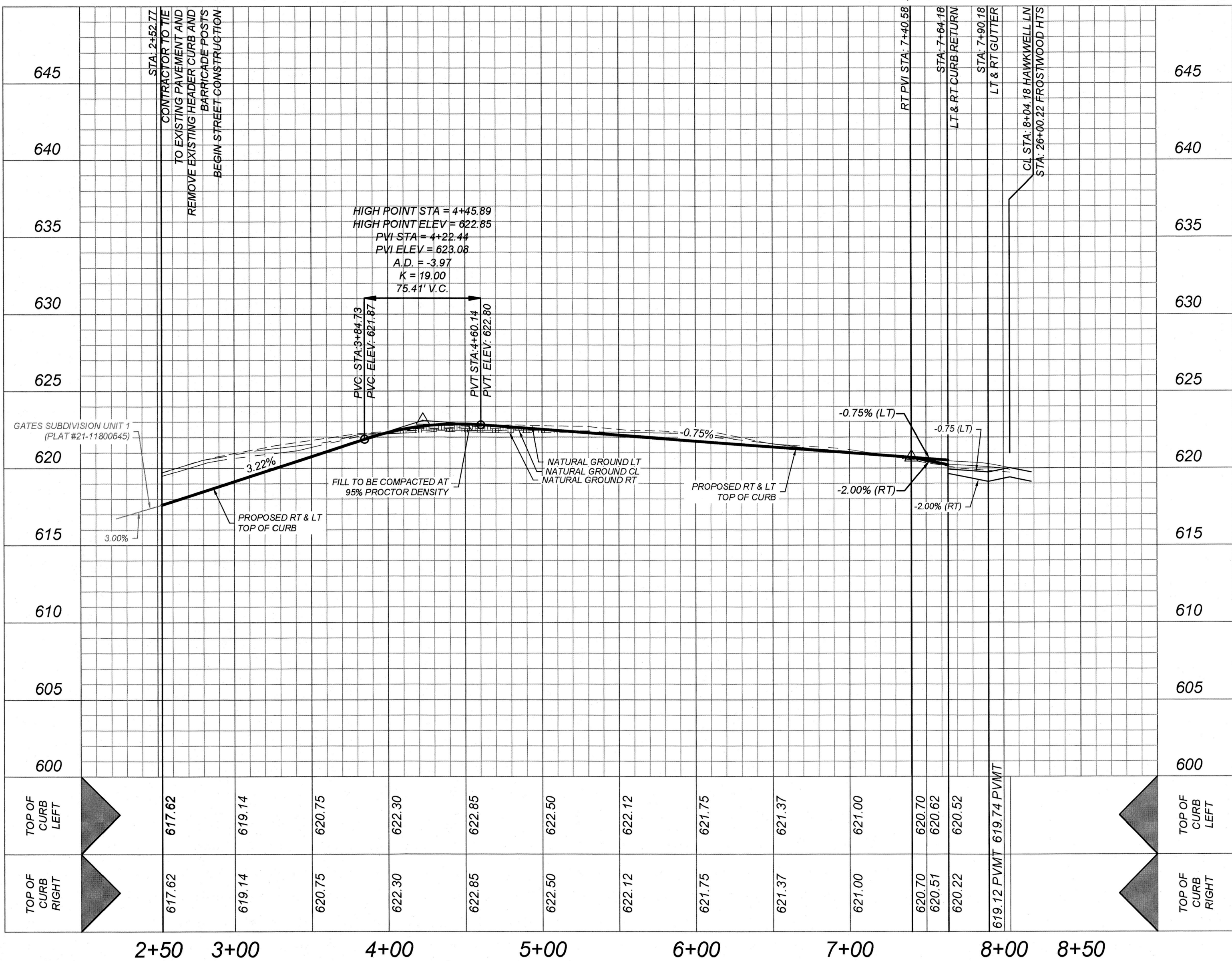
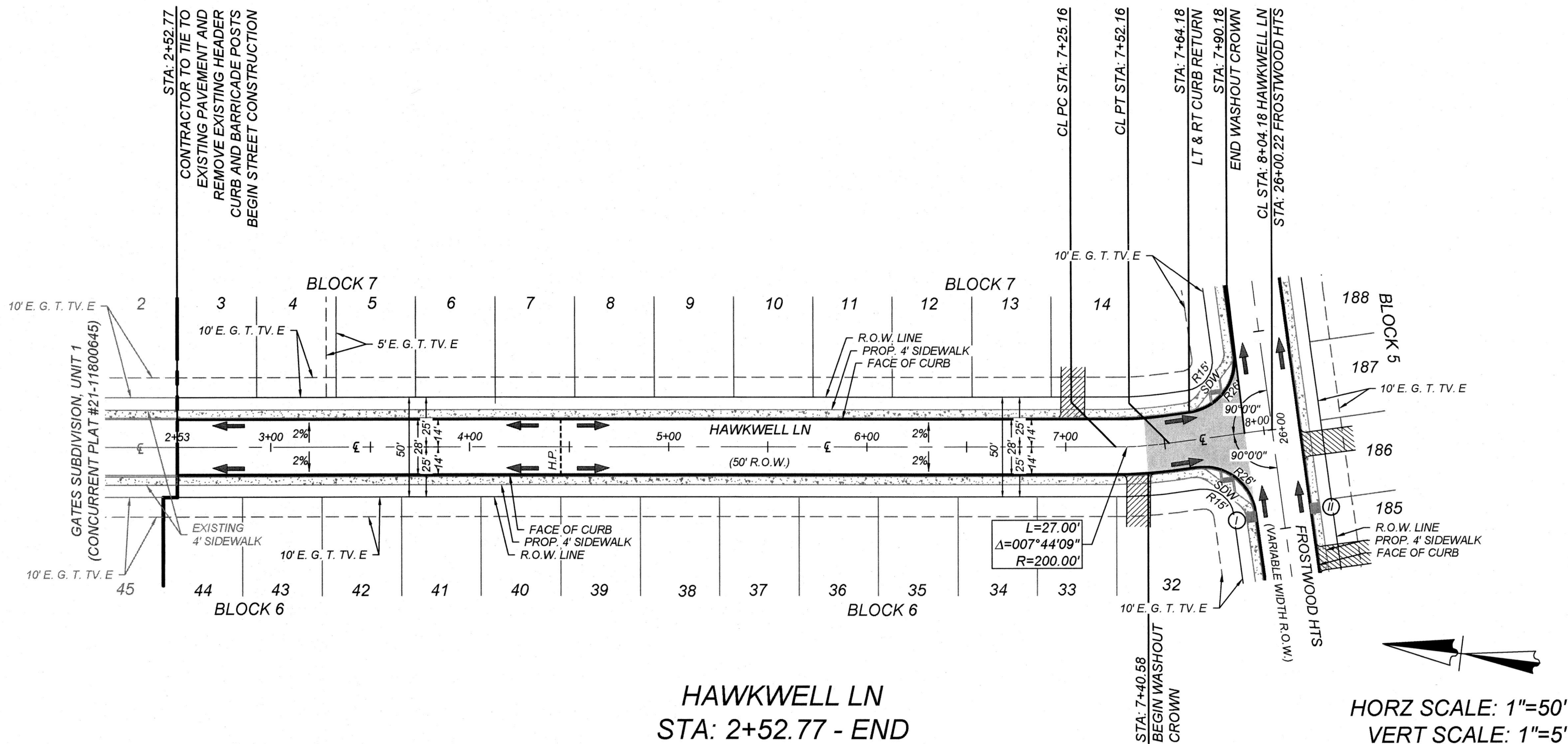
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

LEGEND

- R.O.W. = RIGHT OF WAY  
G.E.T.T.V.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT  
→ = FLOW ARROW  
= WASHOUT CROWN  
⊙ = WHEELCHAIR RAMP TYPE I SEE SHEET 5.6  
⊙ = WHEELCHAIR RAMP TYPE II SEE SHEET 5.6  
SDW = SINGLE DIRECTIONAL WHEELCHAIR RAMP  
DDW = DUAL DIRECTIONAL WHEELCHAIR RAMP  
= SIDEWALK TO BE CONSTRUCTED BY DEVELOPER  
= SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION  
= PROPOSED DRIVEWAY LOCATION  
H.P. = HIGH POINT  
L.P. = LOW POINT  
= PROPOSED TOP OF CURB ELEVATION





# TRENCH EXCAVATION SAFETY PROTECTION

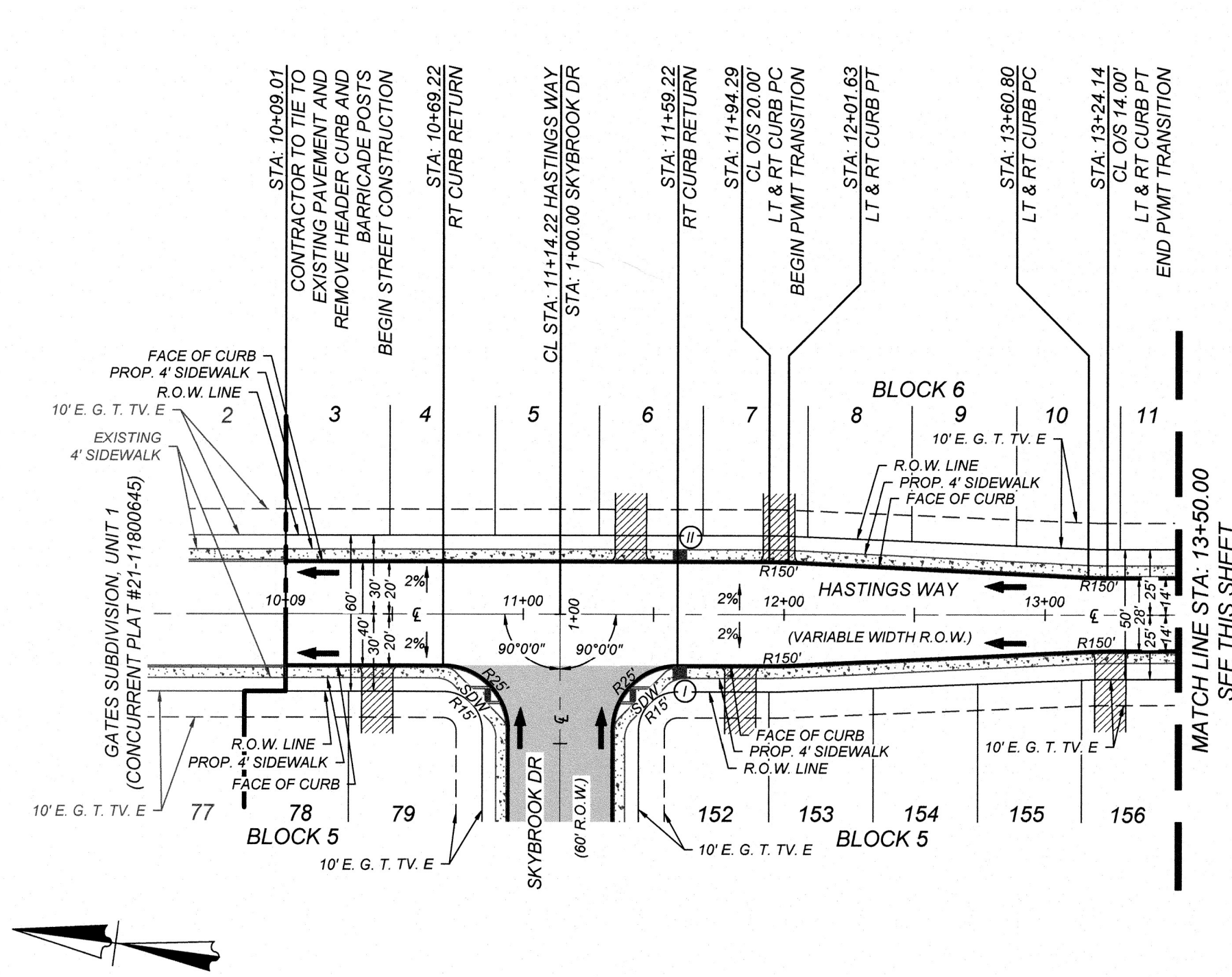
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGNER/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

# CAUTION!!

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-GO-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

# BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

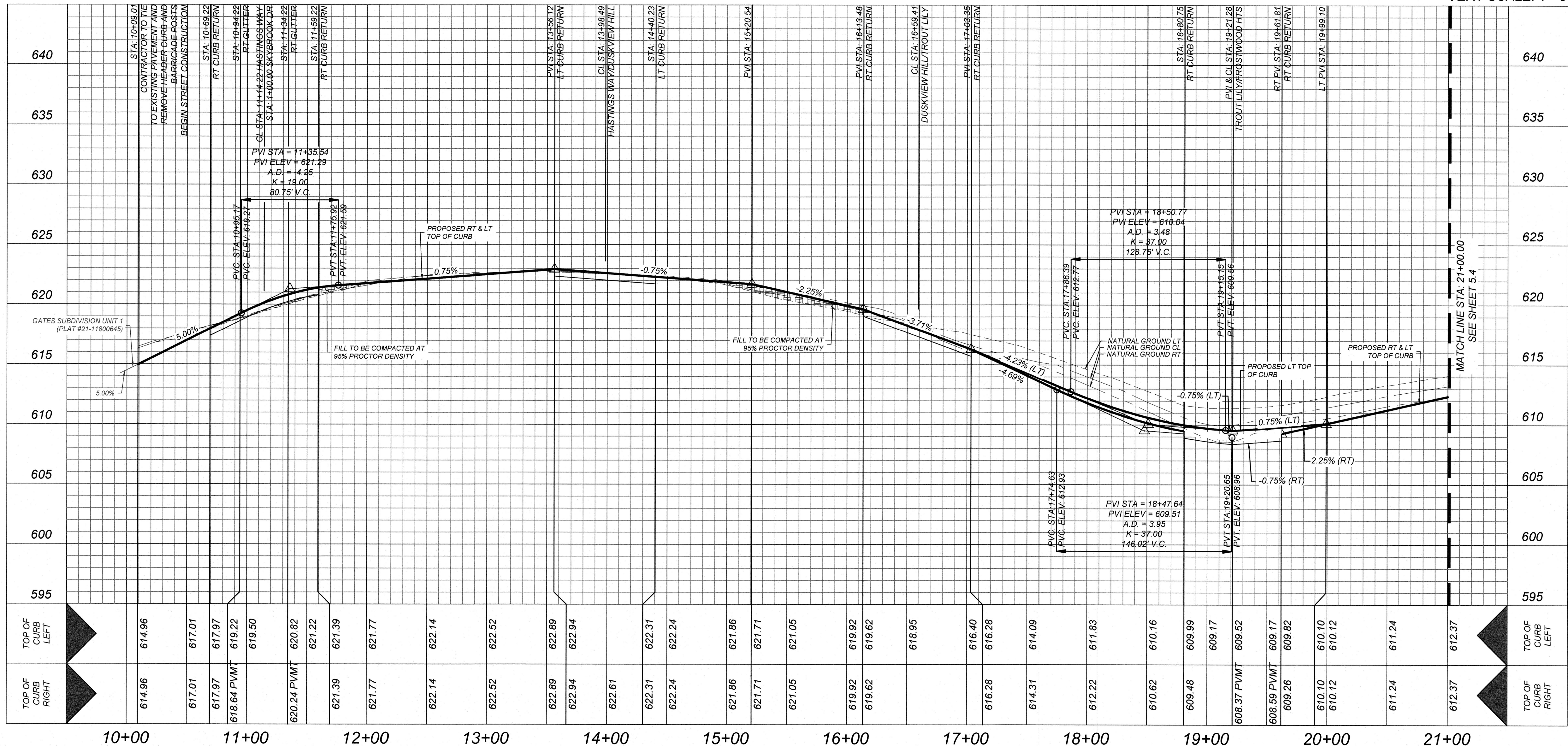
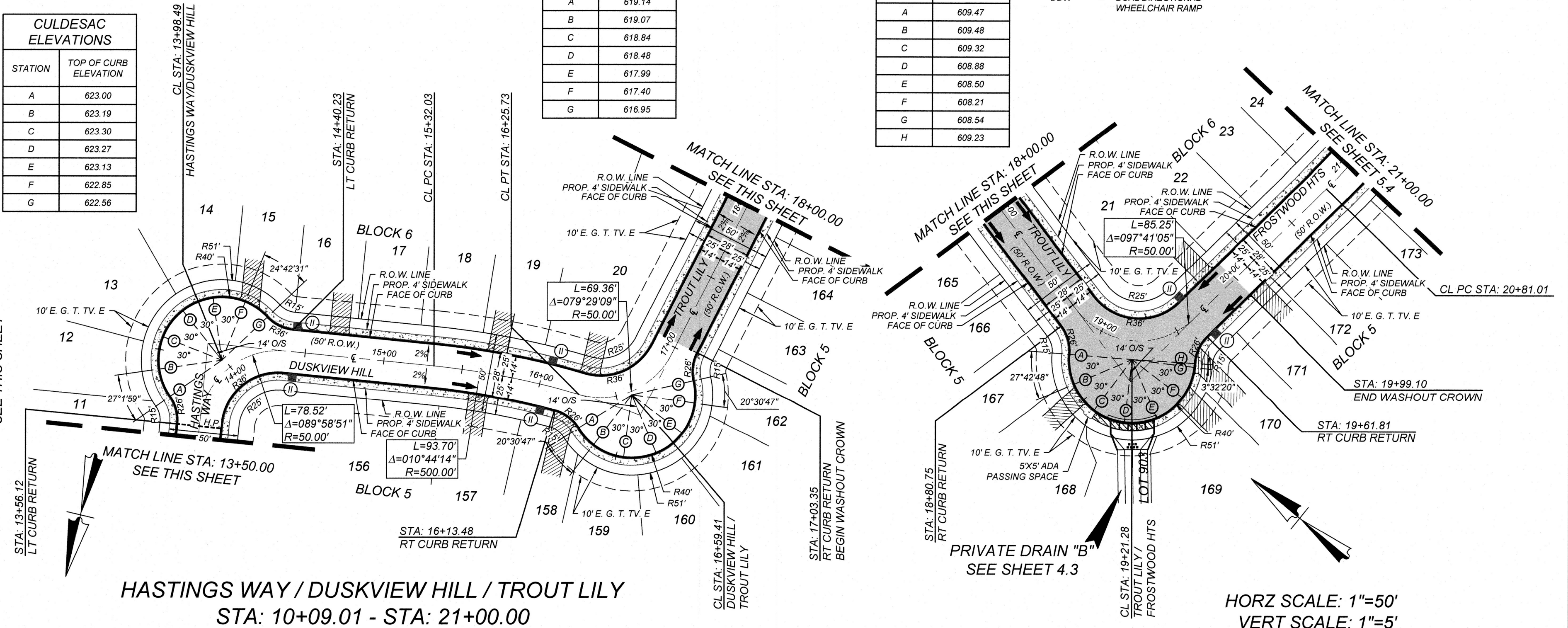


| STATION | TOP OF CURB ELEVATION |
|---------|-----------------------|
| A       | 623.00                |
| B       | 623.19                |
| C       | 623.30                |
| D       | 623.27                |
| E       | 623.13                |
| F       | 622.85                |
| G       | 622.56                |

| STATION | TOP OF CURB ELEVATION |
|---------|-----------------------|
| A       | 619.14                |
| B       | 619.07                |
| C       | 618.84                |
| D       | 618.48                |
| E       | 617.99                |
| F       | 617.40                |
| G       | 616.95                |

| STATION | TOP OF CURB ELEVATION |
|---------|-----------------------|
| A       | 609.47                |
| B       | 609.48                |
| C       | 609.32                |
| D       | 608.88                |
| E       | 608.50                |
| F       | 608.21                |
| G       | 608.54                |
| H       | 609.23                |

- LEGEND**
- R.O.W. = RIGHT OF WAY
  - G.E.T.V.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT
  - = FLOW ARROW
  - = WASHOUT CROWN
  - ① = WHEELCHAIR RAMP TYPE I SEE SHEET 5.6
  - ② = WHEELCHAIR RAMP TYPE II SEE SHEET 5.6
  - SDW = SINGLE DIRECTIONAL WHEELCHAIR RAMP
  - DDW = DUAL DIRECTIONAL WHEELCHAIR RAMP
  - ===== = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
  - ===== = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
  - ===== = PROPOSED DRIVEWAY LOCATION
  - H.P. = HIGH POINT
  - L.P. = LOW POINT
  - ===== = PROPOSED TOP OF CURB ELEVATION



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
HASTINGS WAY, DUSKVIEW HILL & TROUT LILY PLAN & PROFILE

PLAT NO. 22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

5.3

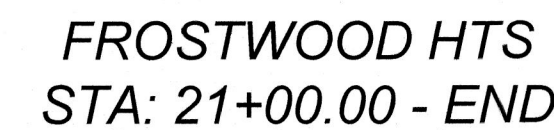


CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR THE PROTECTION OF ALL INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS. AS A CONDITION FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-GO-DESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

A BEXAR COUNTY PERMIT MUST BE  
OBTAINED BEFORE WORKING IN  
BEXAR COUNTY R.O.W.

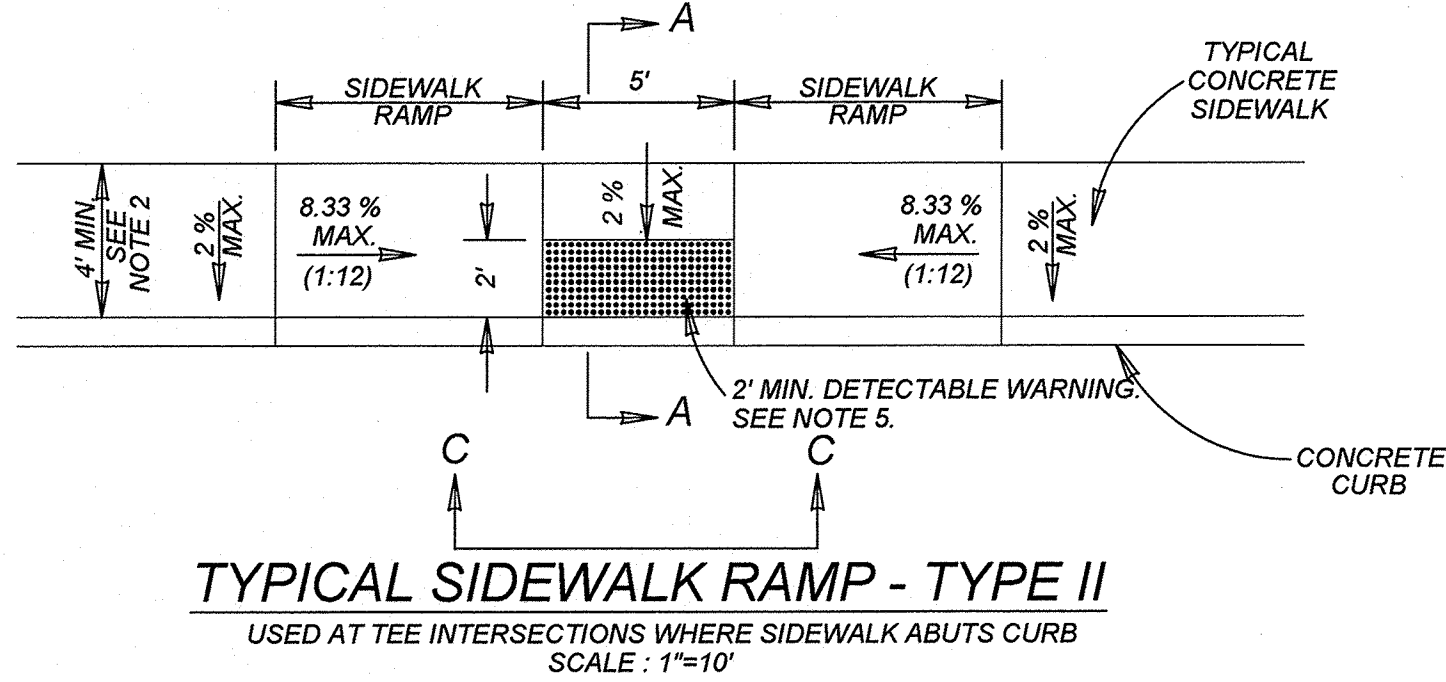
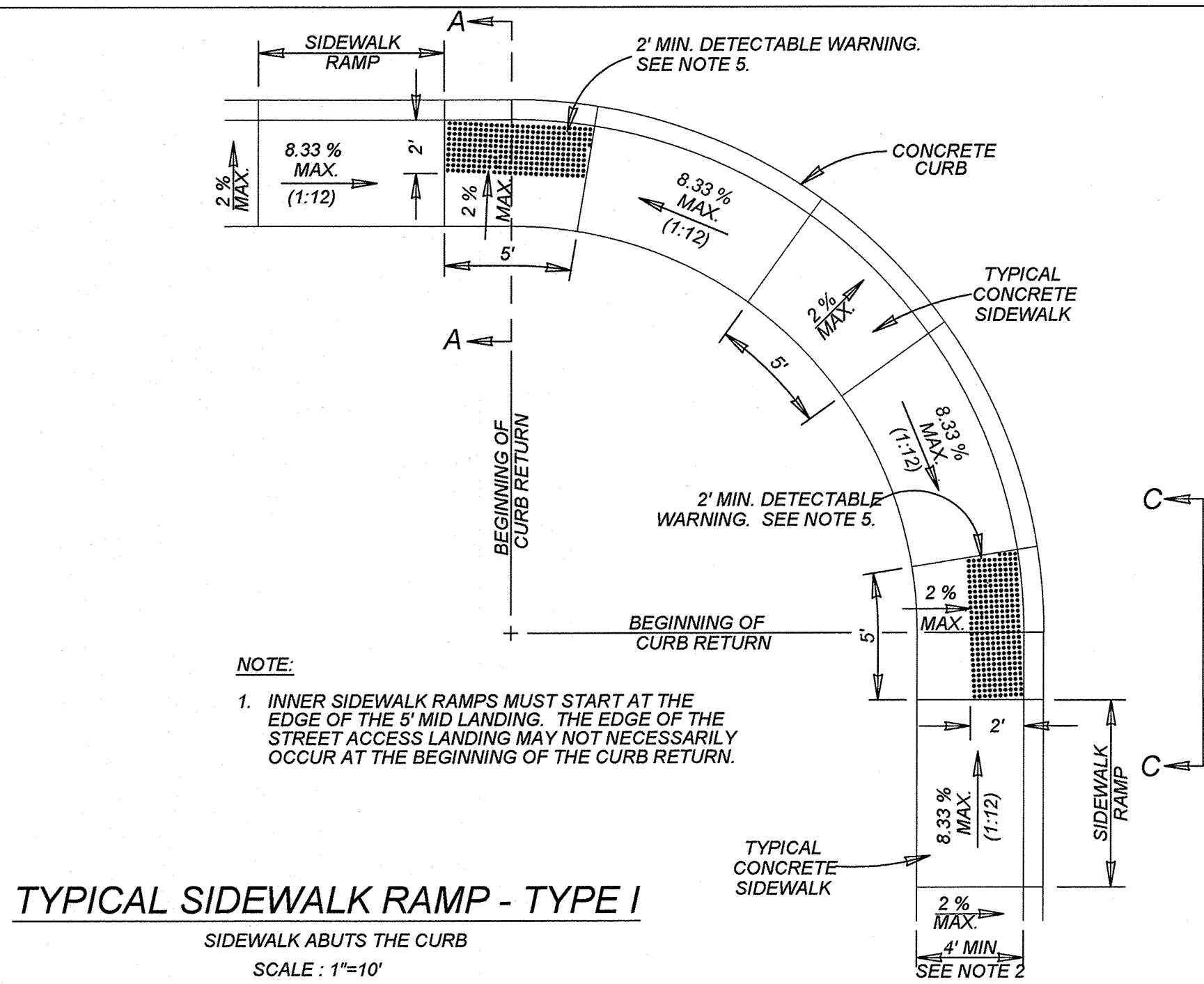
|                                                                                     |   |                                           |                                                                                     |                                                                                     |                                         |                                                         |
|-------------------------------------------------------------------------------------|---|-------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------|
| R.O.W                                                                               | = | RIGHT OF WAY                              |  | =                                                                                   | SIDEWALK TO BE CONSTRUCTED BY DEVELOPER |                                                         |
| G.E.T.V.E.                                                                          | = | GAS, ELECTRIC, TELEPHONE & CABLE BASEMENT |  |                                                                                     |                                         |                                                         |
|  |   | =                                         | FLOW ARROW                                                                          |  | =                                       | SIDEWALK TO BE BUILT AT THE TIME OF FUTURE CONSTRUCTION |
|  |   | =                                         | WASHOUT CROWN                                                                       |                                                                                     |                                         |                                                         |
|  |   | =                                         | WHEELCHAIR RAMP TYPE I<br>SEE SHEET 5.6                                             |  | =                                       | PROPOSED DRIVEWAY LOCATION                              |
|  |   | =                                         | WHEELCHAIR RAMP TYPE II<br>SEE SHEET 5.6                                            | H.P.                                                                                | =                                       | HIGH POINT                                              |
|                                                                                     |   |                                           |                                                                                     | L.P.                                                                                | =                                       | LOW POINT                                               |
| SDW                                                                                 | = | SINGLE DIRECTIONAL WHEELCHAIR RAMP        |  |                                                                                     | =                                       | PROPOSED TOP OF CURB ELEVATION                          |
| DDW                                                                                 | = | DUAL DIRECTIONAL WHEELCHAIR RAMP          |  |                                                                                     |                                         |                                                         |





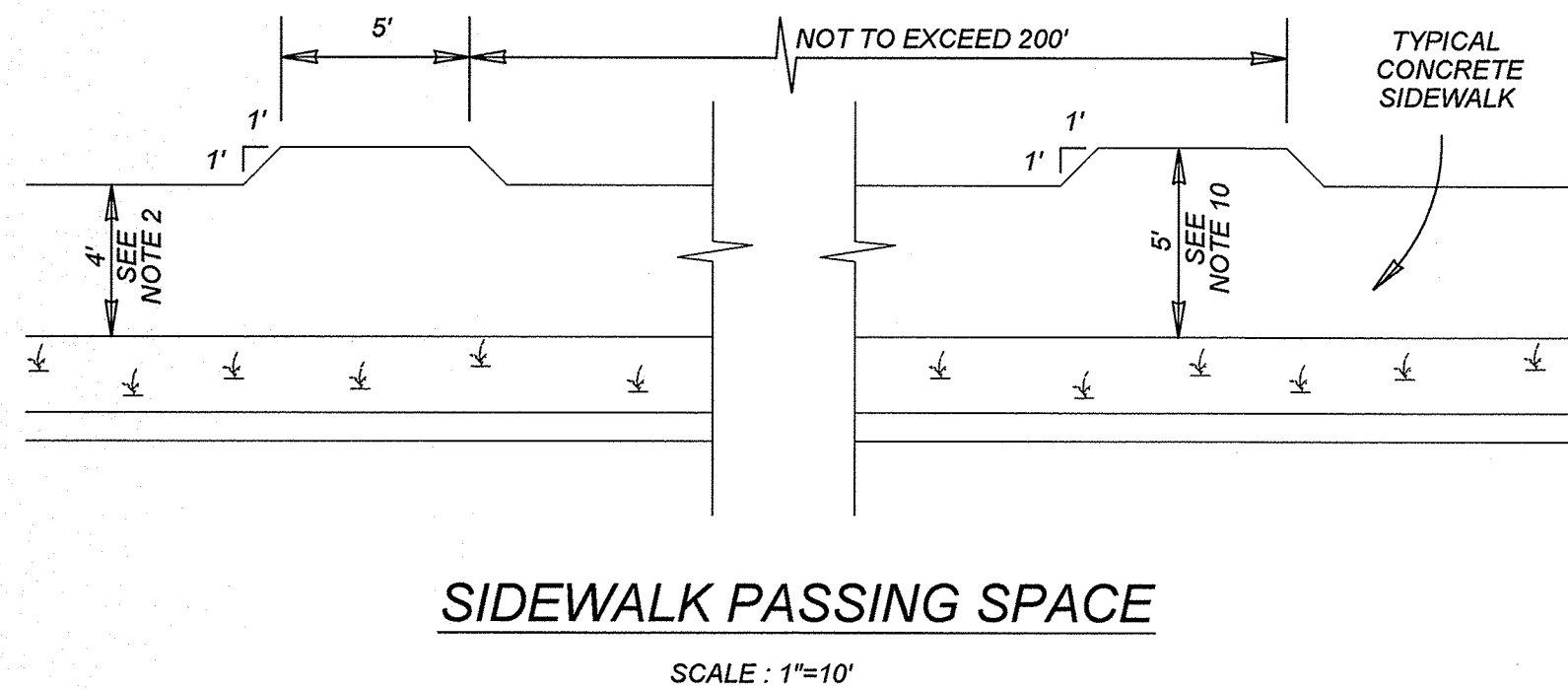
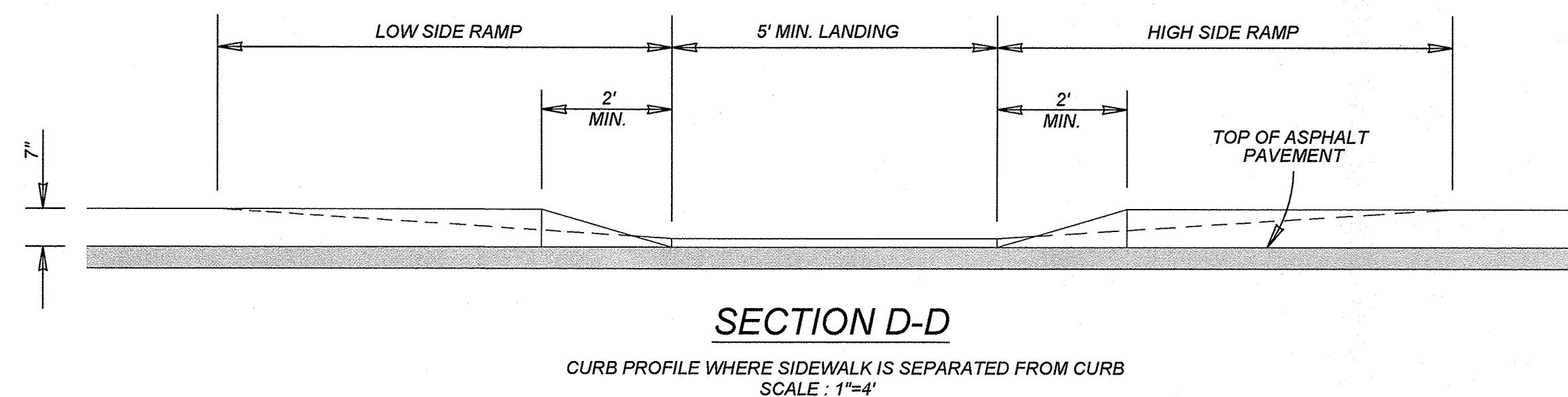
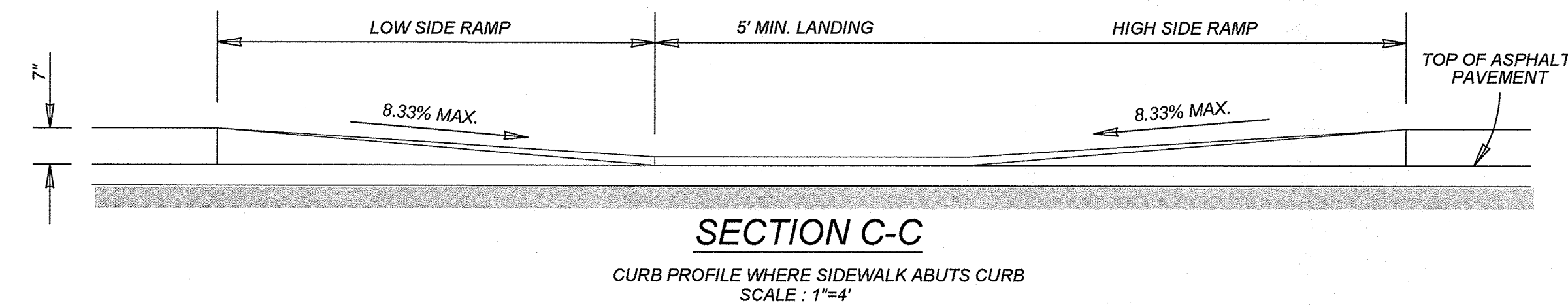
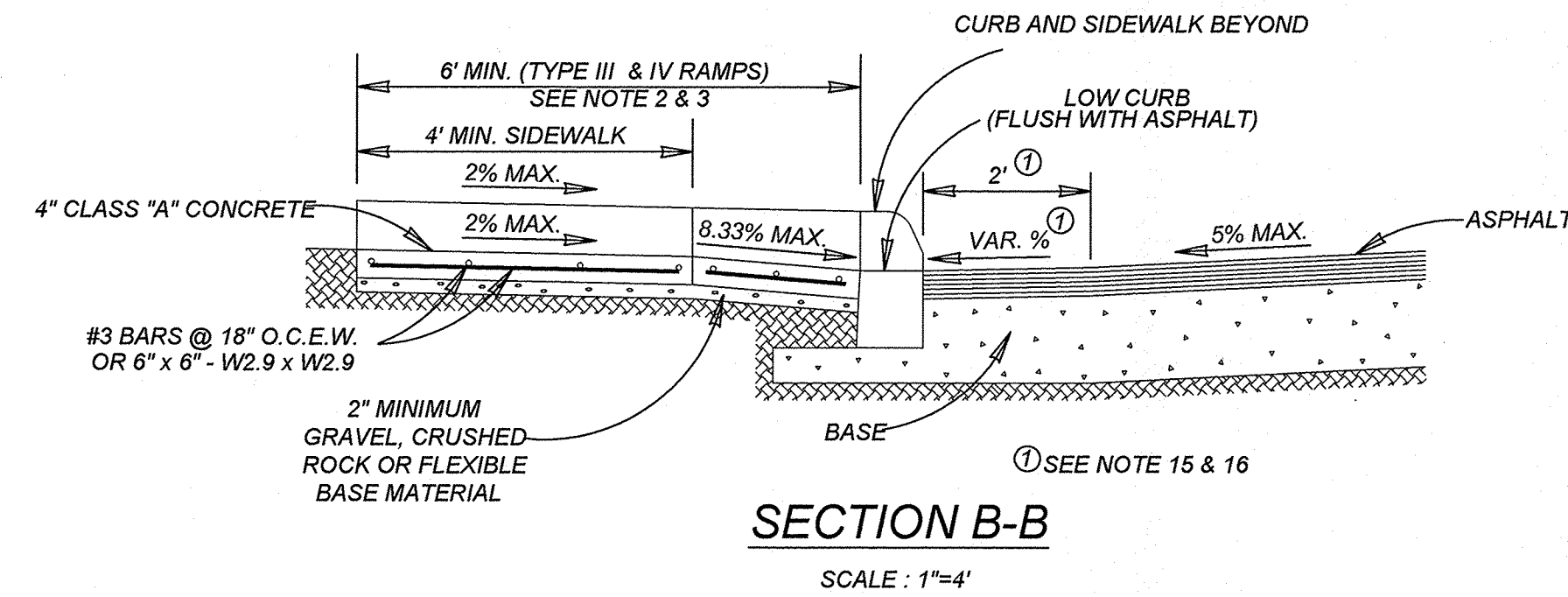
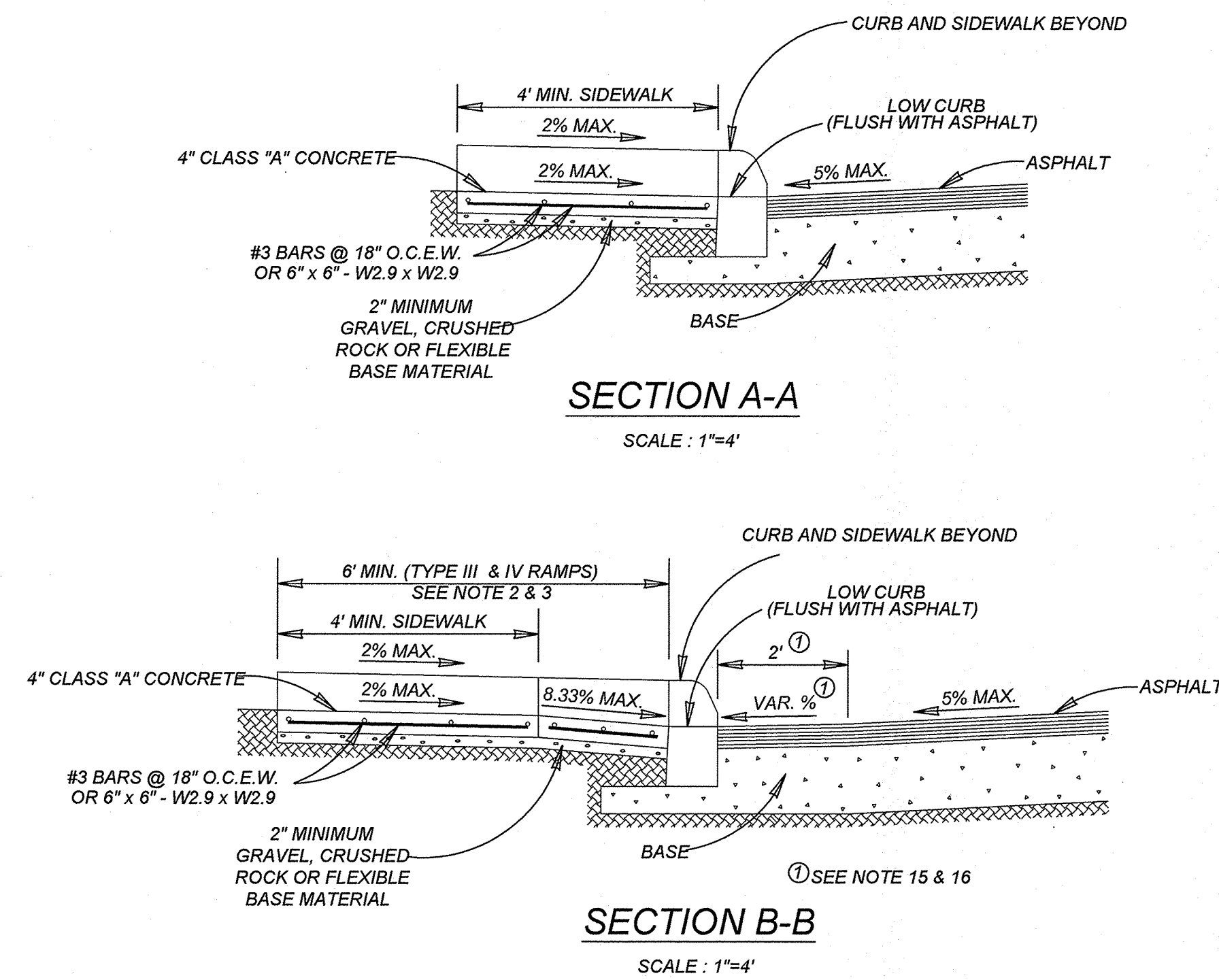
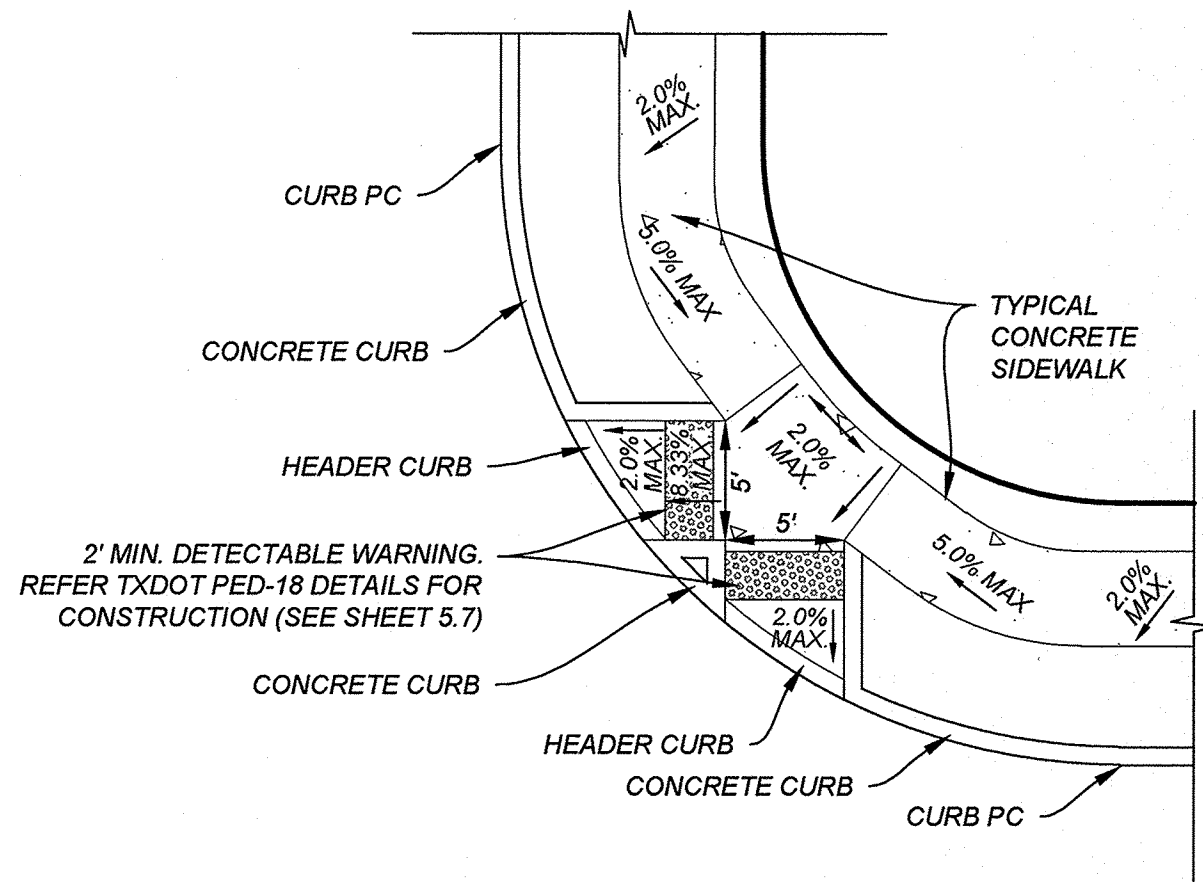
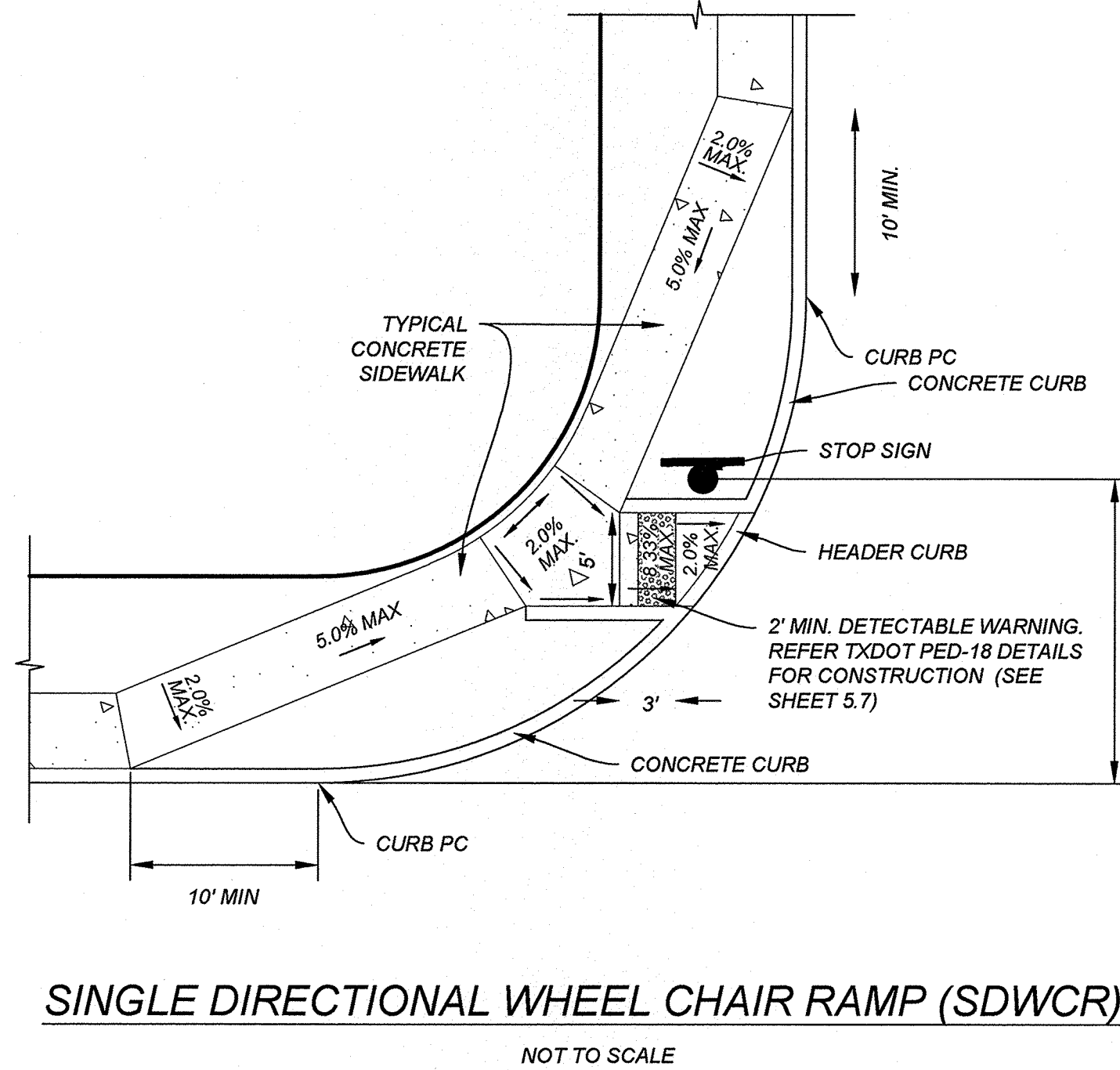
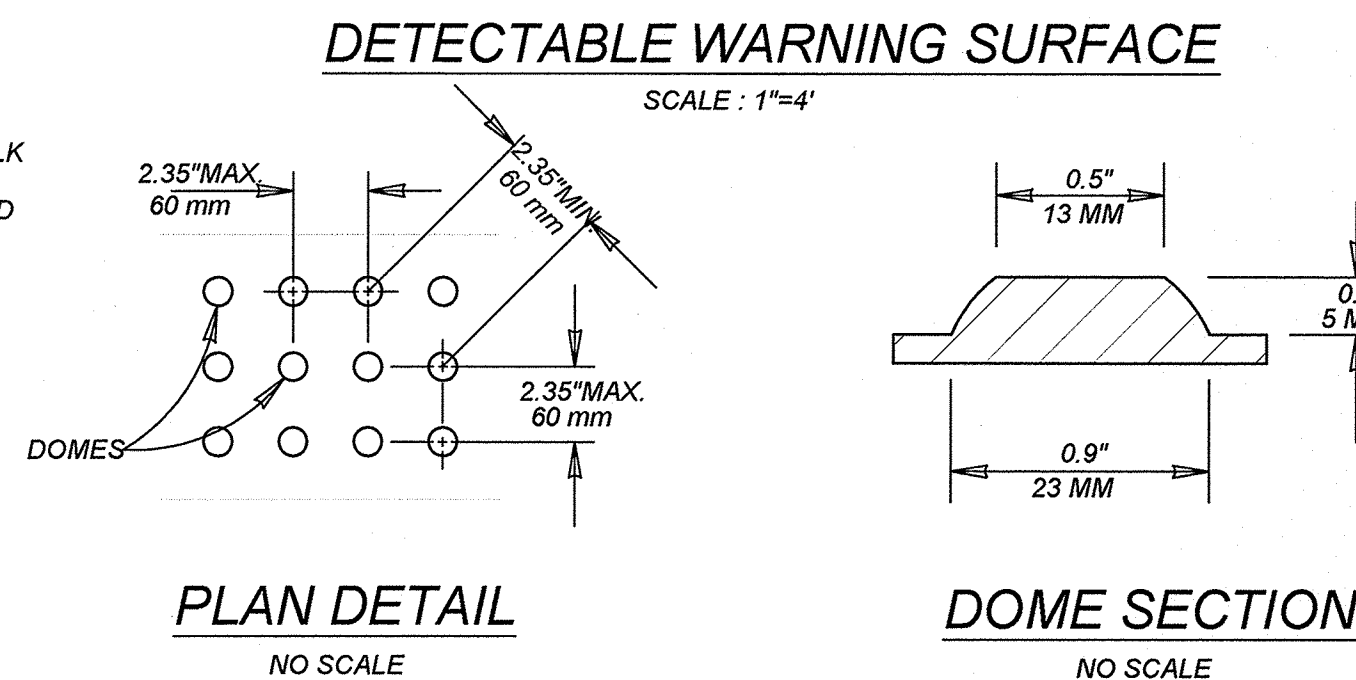
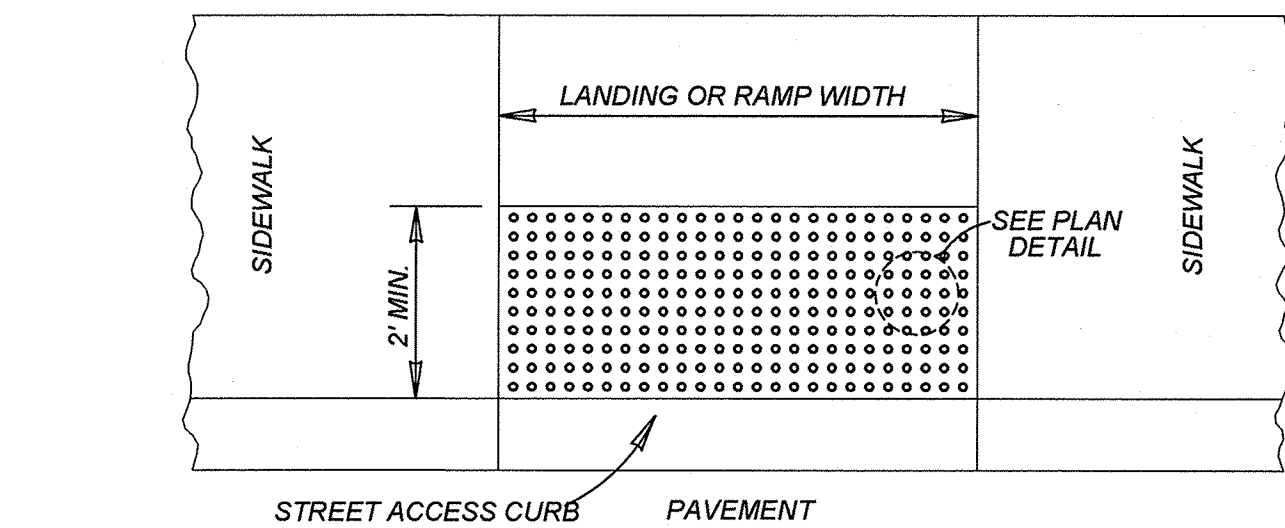






### GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP IN THE DIRECTION OF PEDESTRIAN TRAVEL AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-05, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS '500 - CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER' AND / OR '502 - CONCRETE SIDEWALKS'. RAMP SURFACE SHALL BE BRUSH.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" - W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33% / 3 = 2.77%). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.

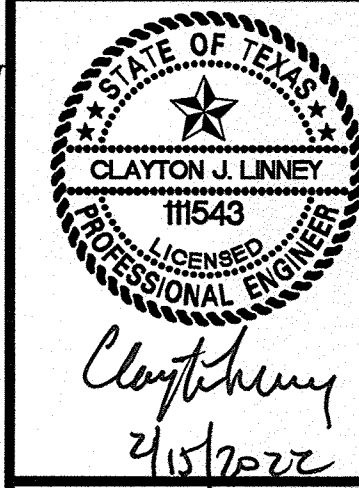


NOTE:  
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

| GUTTER SLOPE | SIDEWALK RAMP LENGTH (1:12) |           |
|--------------|-----------------------------|-----------|
|              | LOW SIDE                    | HIGH SIDE |
| 1%           | 5'-6"                       | 7'-2"     |
| 2%           | 5'-0"                       | 8'-4"     |
| 3%           | 4'-6"                       | 10'-0"    |
| 4%           | 4'-2"                       | 12'-6"    |
| 5%           | 3'-10"                      | 16'-8"    |

|                                                     |  |  |  |
|-----------------------------------------------------|--|--|--|
| MAY 2009                                            |  |  |  |
| CITY OF SAN ANTONIO                                 |  |  |  |
| CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT |  |  |  |
| WHEELCHAIR RAMP STANDARDS                           |  |  |  |
| PLAT NO. 22-11800017                                |  |  |  |
| JOB NO. 205-43-05                                   |  |  |  |
| DATE: NOVEMBER 2021                                 |  |  |  |
| DRAWN/OM CHECKED/CL                                 |  |  |  |
| SHEET NUMBER:                                       |  |  |  |
| 5.6                                                 |  |  |  |

GATES SUBDIVISION UNIT 2  
SAN ANTONIO, TX  
WHEELCHAIR RAMP DETAILS

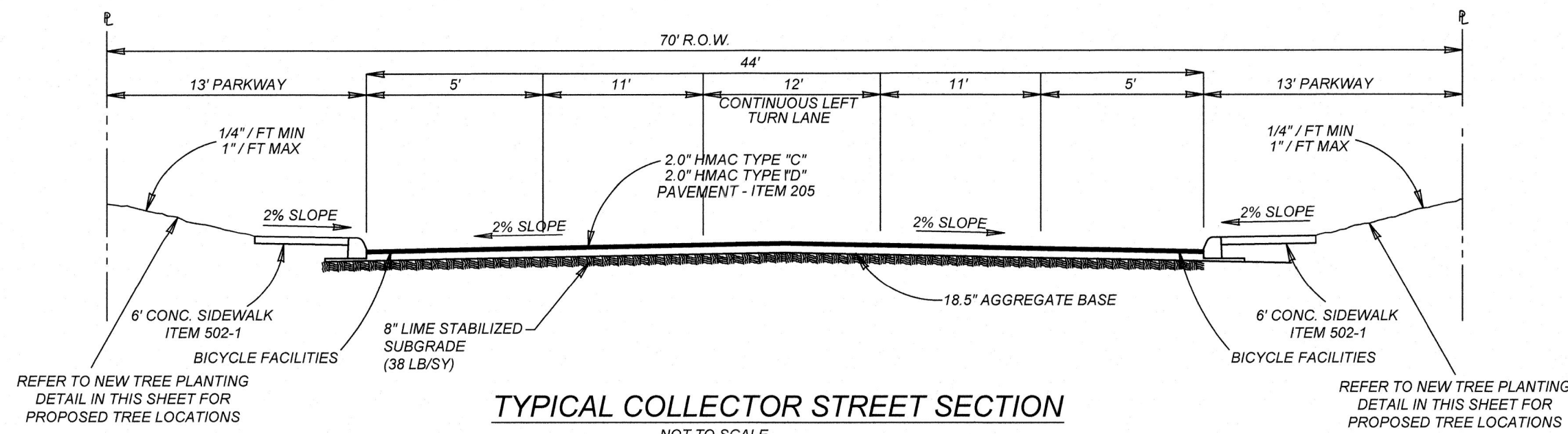








Date: May 31, 2023, 10:45am User: ID: ecorona  
File: P:\2025\43\05 Design\Civil\STREET\STD12054305.dwg

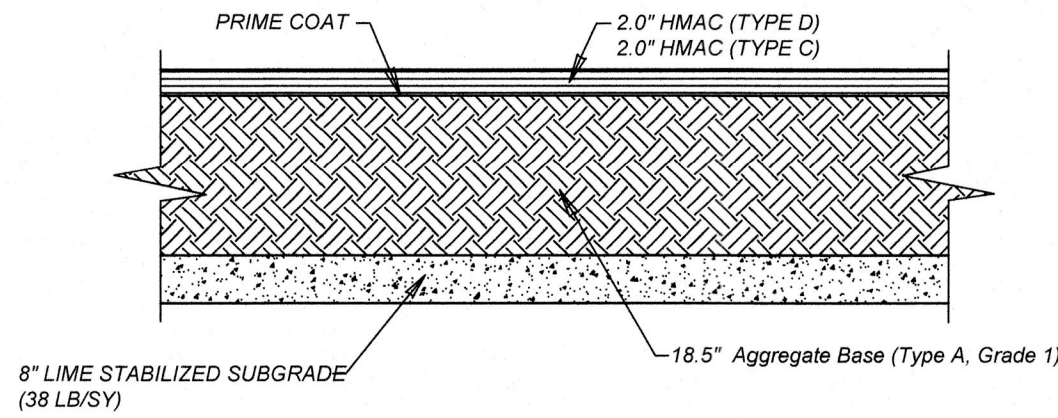


**TYPICAL COLLECTOR STREET SECTION**  
NOT TO SCALE

USE COLLECTOR STREET SECTION FOR STREETS BELOW:

FIELDSTONE WAY: STA. 20+05.17 - 26+65.23

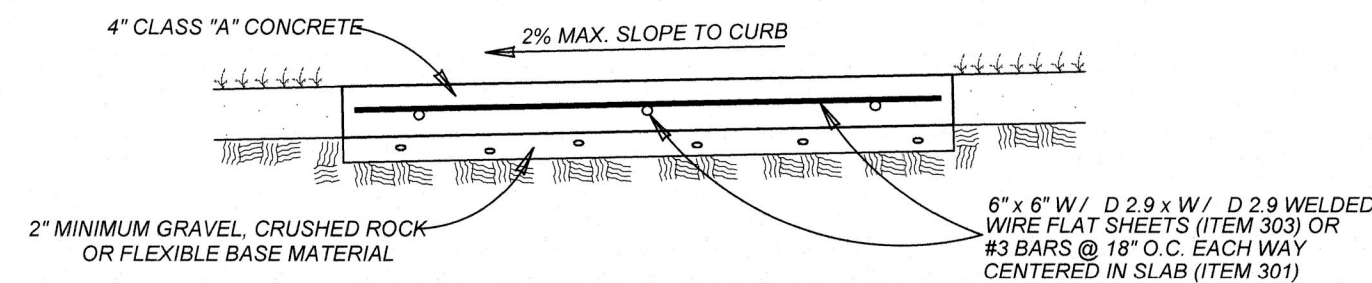
**Pavement Section**  
2.0" HMA Type "D"  
2.0" HMA Type "C"  
18.5" Aggregate Base (Type A, Grade 1)  
8.0" Lime Stabilized Subgrade(38 LB/SY)  
Total: 30.5"  
Structural No: 4.99  
CBR: 2.5



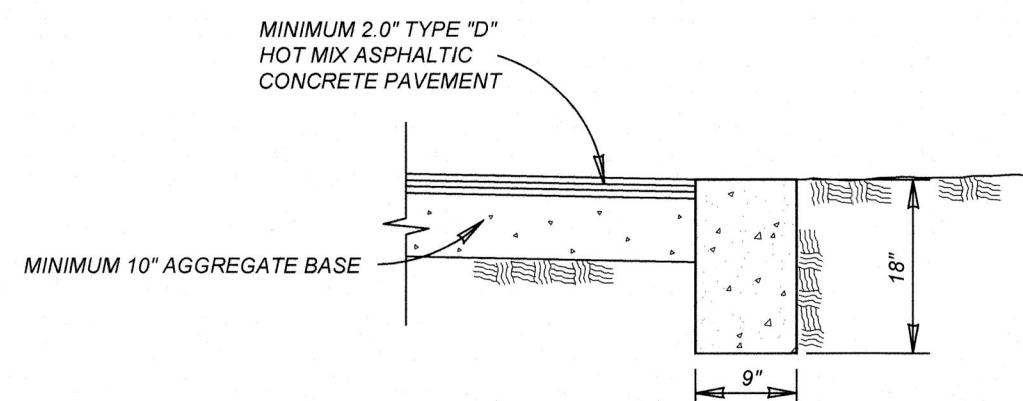
**ASPHALT PAVEMENT DETAIL**  
NOT-TO-SCALE

**DETAIL FOR ALL COLLECTORS**

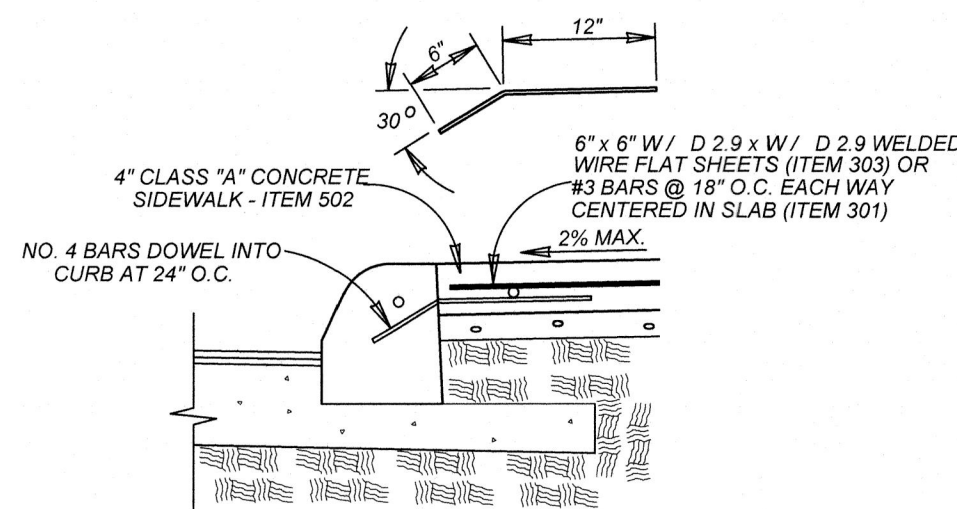
- NOTES:
- PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, LLC. PROJECT NO. S211512 DATED DECEMBER 18, 2021.
  - REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
  - CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.



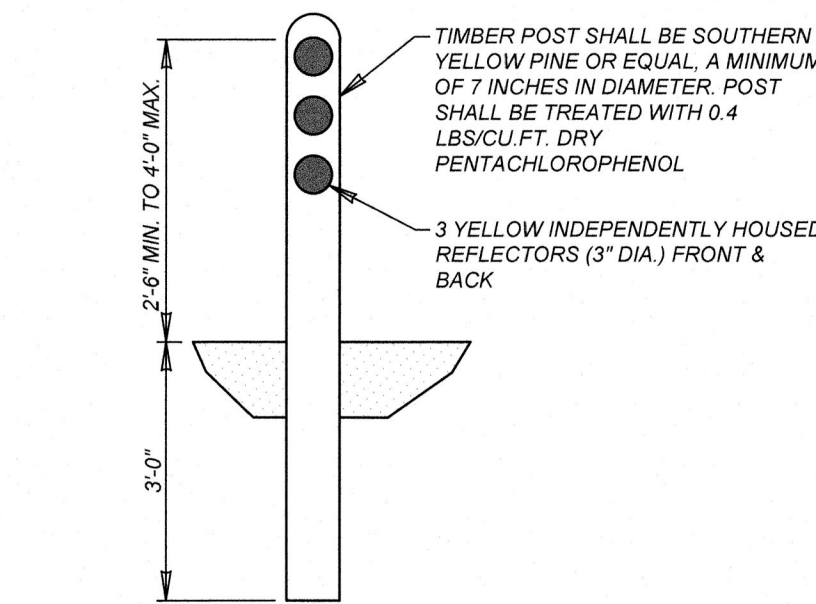
**CONCRETE SIDEWALK SECTION**  
ITEM 502  
NOT TO SCALE



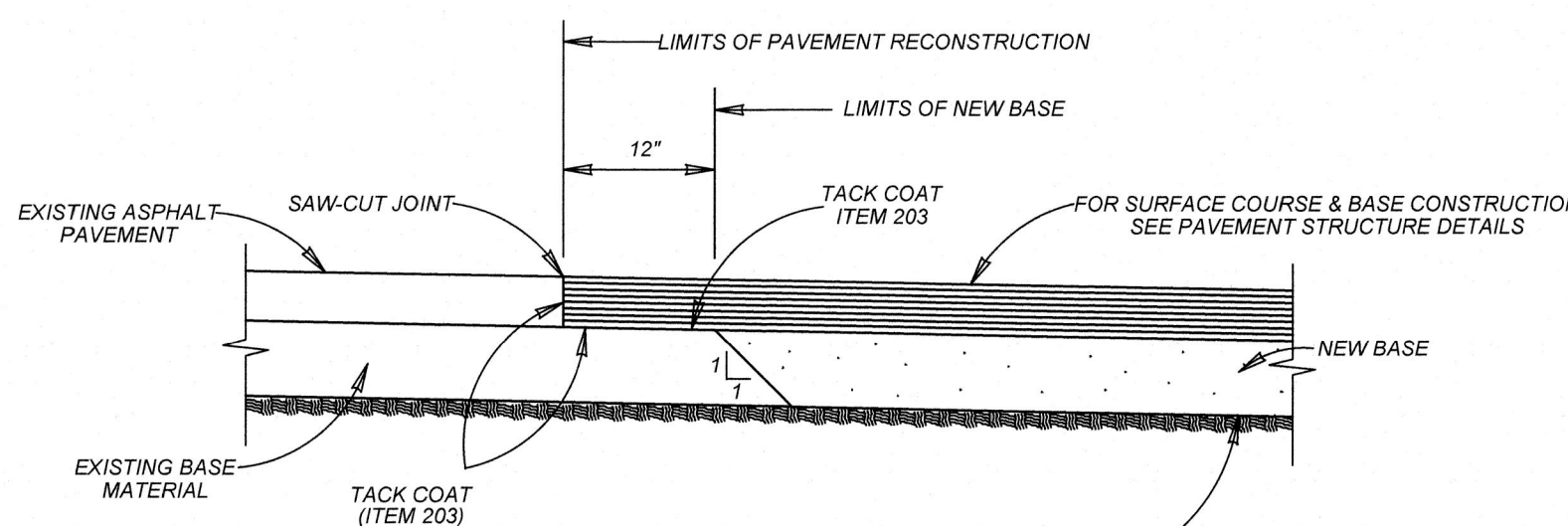
**HEADER CURB**  
ITEM 500 ON SAND OR GRAVEL  
NOT TO SCALE



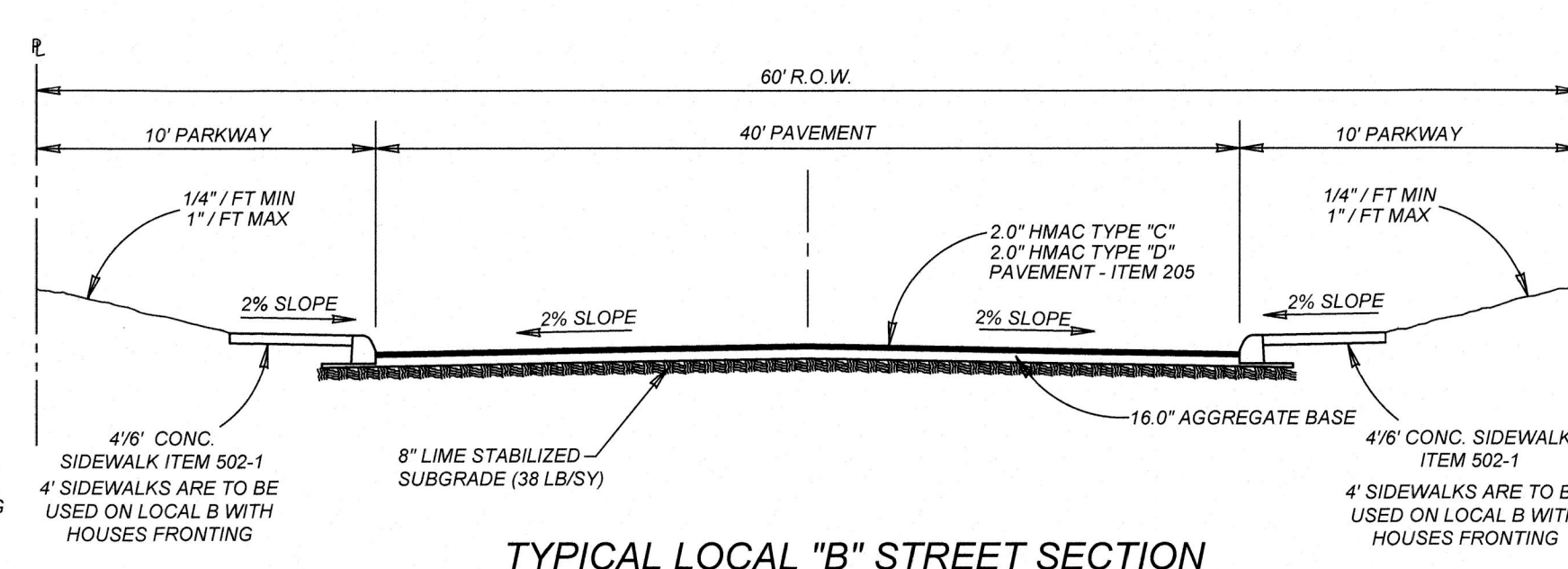
**CONCRETE SIDEWALK ABUTTING CURB SECTION**  
ITEM 502  
NOT TO SCALE



**TIMBER GUARD POST DETAIL**  
NOT-TO-SCALE



**PAVEMENT JUNCTION DETAILS**  
NOT TO SCALE

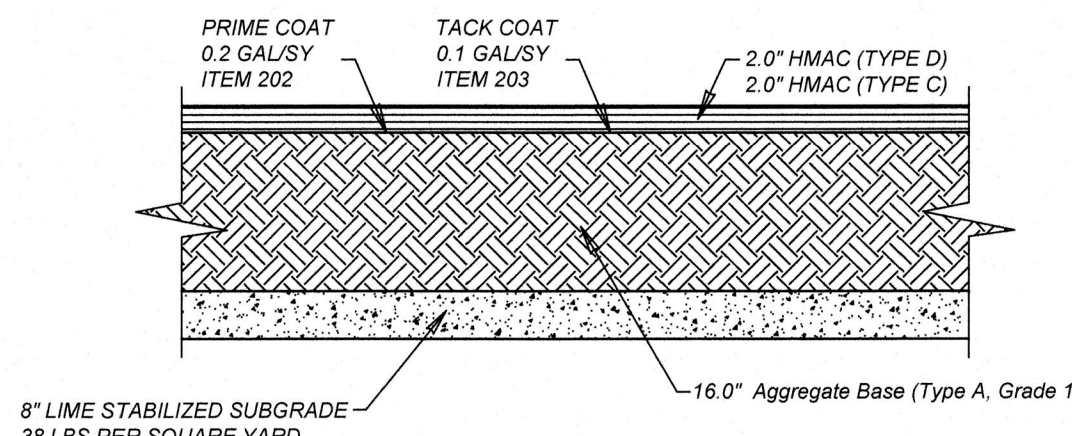


**TYPICAL LOCAL "B" STREET SECTION**  
NOT TO SCALE

USE LOCAL "B" STREET SECTION FOR STREETS:

FIELDSTONE WAY: STA. 26+65.23 - END  
HASTINGS WAY: STA. 10+09.01 - 13+24.14  
SKYBROOK DR: STA. 1+00.00 - END  
FROSTWOOD HTS: 27+12.54 - END

**Pavement Section**  
2.0" HMA Type "D"  
2.0" HMA Type "C"  
16.0" Aggregate Base (Type B, Grade 2)  
8.0" Lime Stabilized Subgrade(38 LB/SY)  
Total: 28"  
Structural No: 4.64  
CBR: 2.5



**ASPHALT PAVEMENT DETAIL**  
NOT-TO-SCALE

**DETAIL FOR ALL LOCAL TYPE B**

- NOTES:
- PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, LLC. PROJECT NO. S211512 DATED DECEMBER 18, 2021.
  - REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
  - CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.

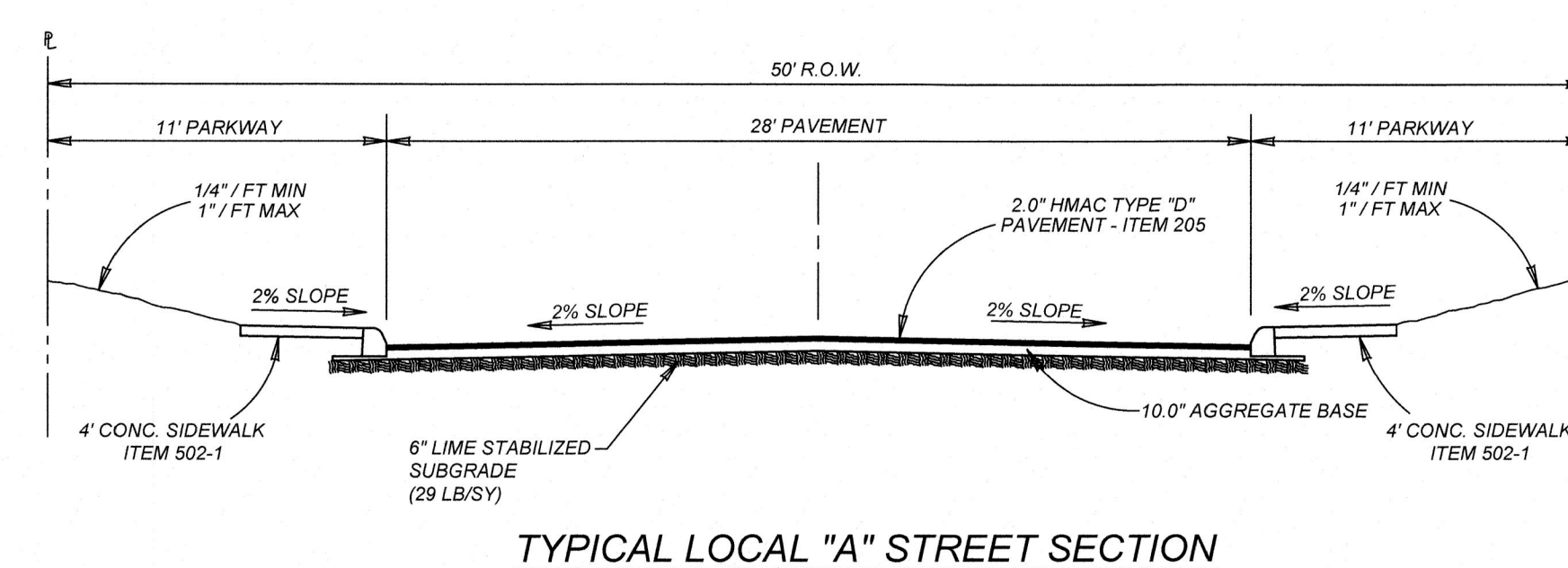
**GENERAL NOTES:**

- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.
- THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES AN UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 7-DAYS OF AT LEAST 160 PSI IN ACCORDANCE WITH ASTM D5105 STANDARD TEST METHODS FOR UNCONFINED COMPRESSIVE STRENGTH OF COMPACTED SOIL-LIME MIXTURES (PROCEDURE B) (IN ADDITION, CURING SHOULD OCCUR FOR 7 DAYS AT 40° AND SPECIMENS SHOULD BE SUBJECT TO 24-HR CAPILLARY SOAK PRIOR TO TESTING.
- FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:
  - AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
  - AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 1/2 INCH SIEVE FROM THE SAMPLE):

| MINIMUM PASSING 1 1/2" SIEVE            | 100 |
|-----------------------------------------|-----|
| MINIMUM PASSING 3/4" SIEVE <td>85</td>  | 85  |
| MINIMUM PASSING NO. 4 SIEVE <td>60</td> | 60  |
  - SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD), IN THE LABORATORY. MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
  - COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED)
  - CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
  - VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN ± 1.0 INCH.

**NOTES:**

- ANY FILL USED TO RAISE THE SUBGRADE:
  - SHOULD NOT CONTAIN ANY DELETERIOUS MATERIAL.
  - SHOULD HAVE A CBR VALUE OF 2.5 OR GREATER
  - SHOULD HAVE THE "LIME PERCENTAGE/APPLICATION RATE" RE-EVALUATED AND TESTED PRIOR TO INSTALLATION
  - PI SHOULD BE A MAXIMUM OF 50

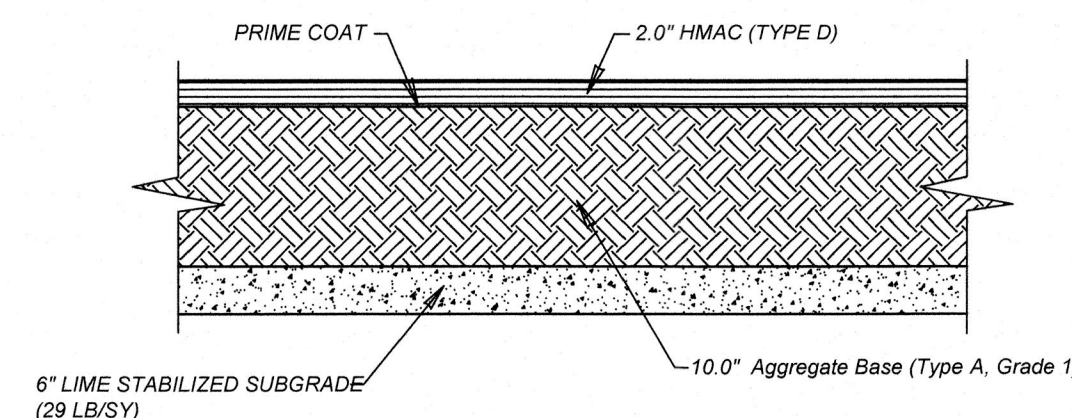


**TYPICAL LOCAL "A" STREET SECTION**  
NOT TO SCALE

USE LOCAL "A" STREET SECTION FOR STREETS BELOW:

KESTIS LN: STA. 2+19.69 - END  
HAWKSWELL LN: STA. 2+52.77 - END  
HASTINGS WAY/DUSKVIEW HILL/TROUT LILY: FROSTWOOD HTS: STA. 13+24.14 - 27+12.54

**Pavement Section**  
2.0" HMA Type "D"  
10.0" Aggregate Base (Type A, Grade 1)  
6.0" Lime Stabilized Subgrade (29 LB/SY)  
Total: 18.0"  
Structural No: 2.76  
CBR: 2.5



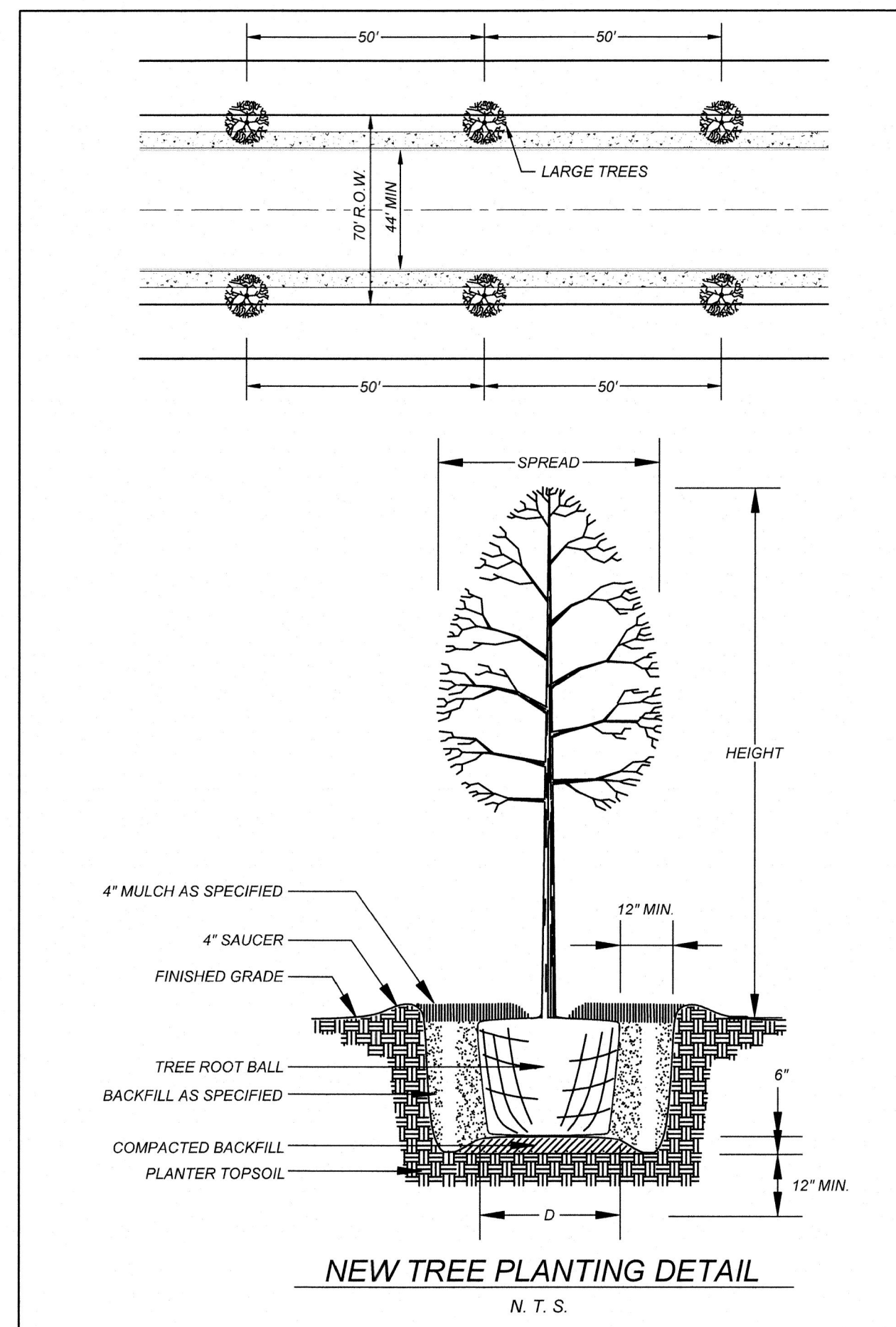
**ASPHALT PAVEMENT DETAIL**  
NOT-TO-SCALE

**DETAIL FOR ALL LOCAL TYPE A**

- NOTES:
- PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, LLC. PROJECT NO. S211512 DATED DECEMBER 18, 2021.
  - REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.
  - CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.

**STREETSCAPE TREE PLANTING NOTES**

- LARGE TREES (PER UDC) TO BE PLANTED EVERY 50 FEET OR CLUSTERS ALONG FIELDSTONE WAY R.O.W. PER "NEW TREE PLANTING DETAIL" ON THIS SHEET.
- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFIRM WITH THE STREETSCAPE PLANTING STANDARDS.
- DEVELOPER TO PROVIDE MAINTENANCE ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
- ALL LANDSCAPE SHALL COMPLY WITH THE CLEAR VISION AREA AS DEFINED BY THE LATEST VERSION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."
- TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC. IF OVERHEAD ELECTRIC IS REQUIRED BY CPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREE, PER THE UDC.



**NEW TREE PLANTING DETAIL**  
N. T. S.

**GATES SUBDIVISION UNIT 2**  
SAN ANTONIO, TX  
**TYPICAL STREET DETAILS**

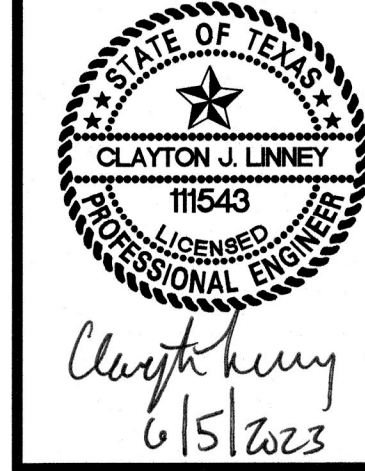
PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

**5.8**

**K&W**  
**ENGINEERS + SURVEYING**  
19421 Presidio Parkway, Suite 200, San Antonio, TX 78231  
(210) 351-1111  
TXBPE Firm # 9513 • TBPLS Firm # 1012330

ISSUE DATE

REVISIONS





**BEXAR COUNTY R.O.W. NOTE**  
A BEXAR COUNTY PERMIT MUST BE  
OBTAINED BEFORE WORKING IN THE  
BEXAR COUNTY RIGHT OF WAY.



ISSUE DATE

## REVISIONS



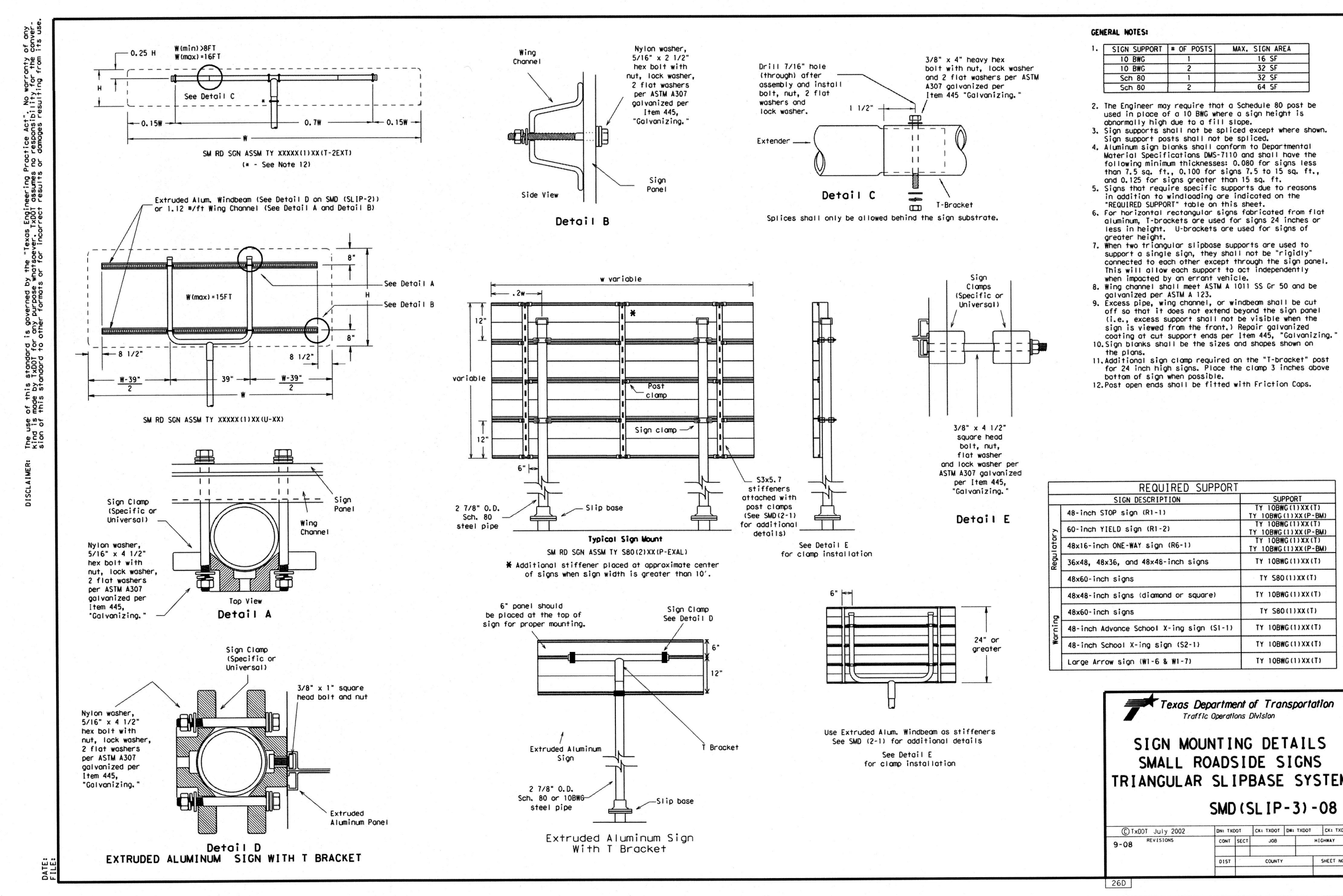
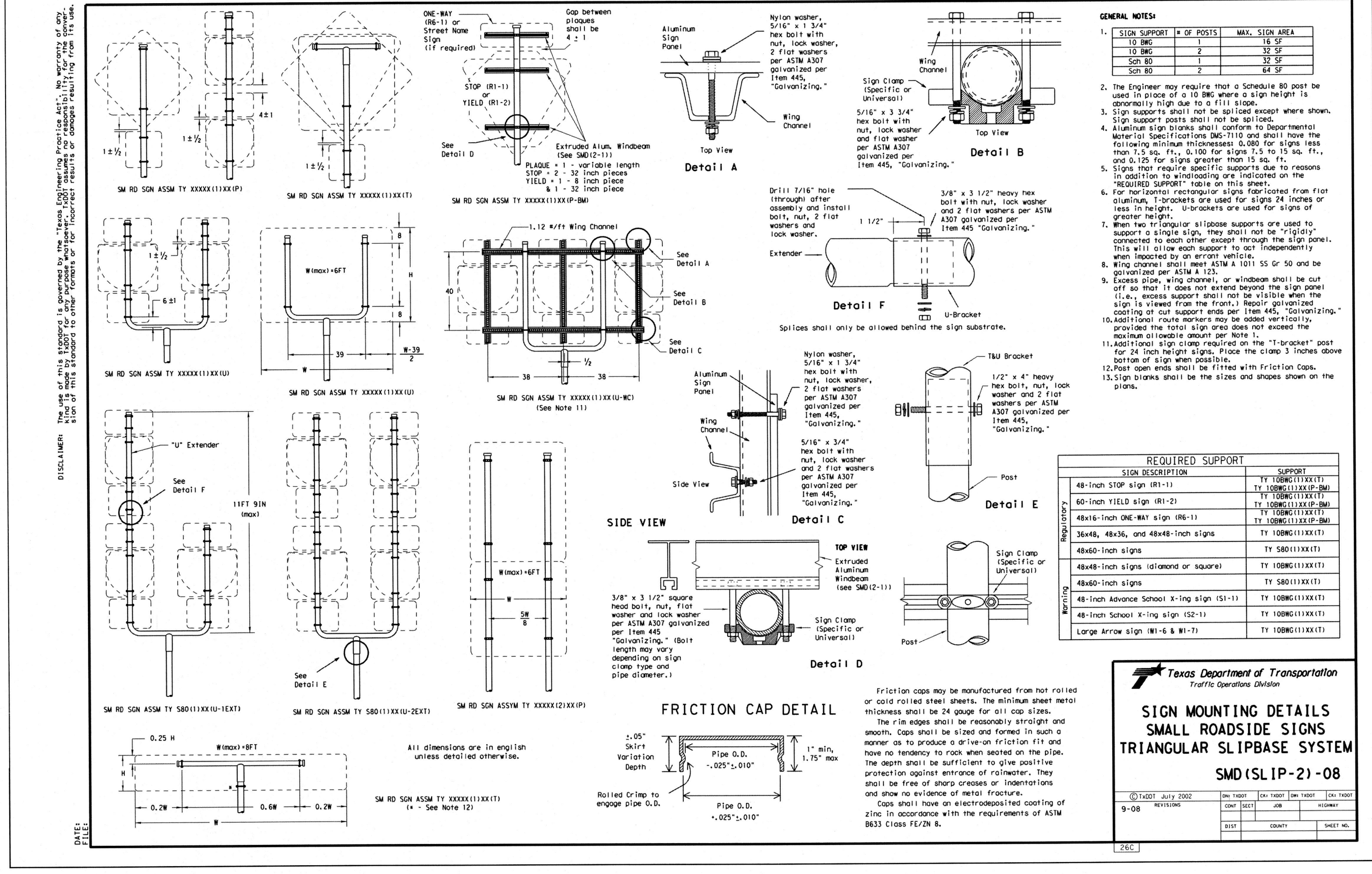
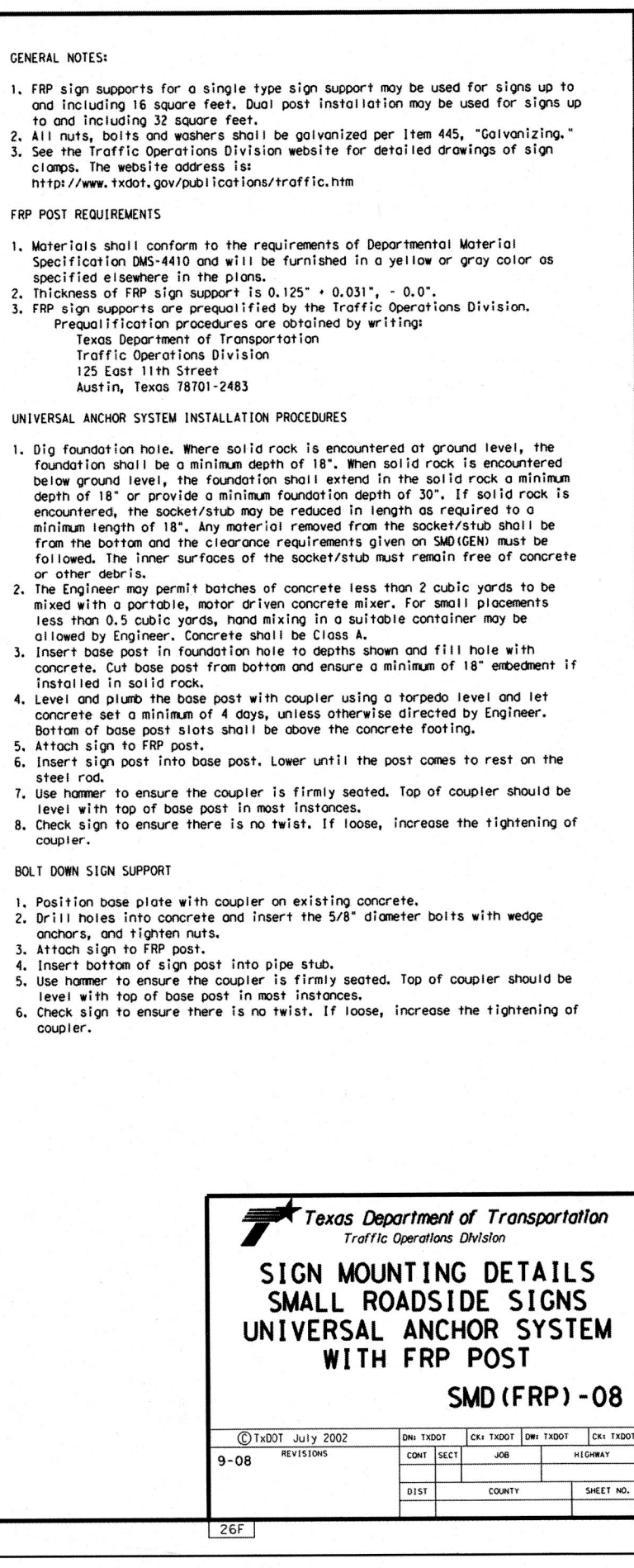
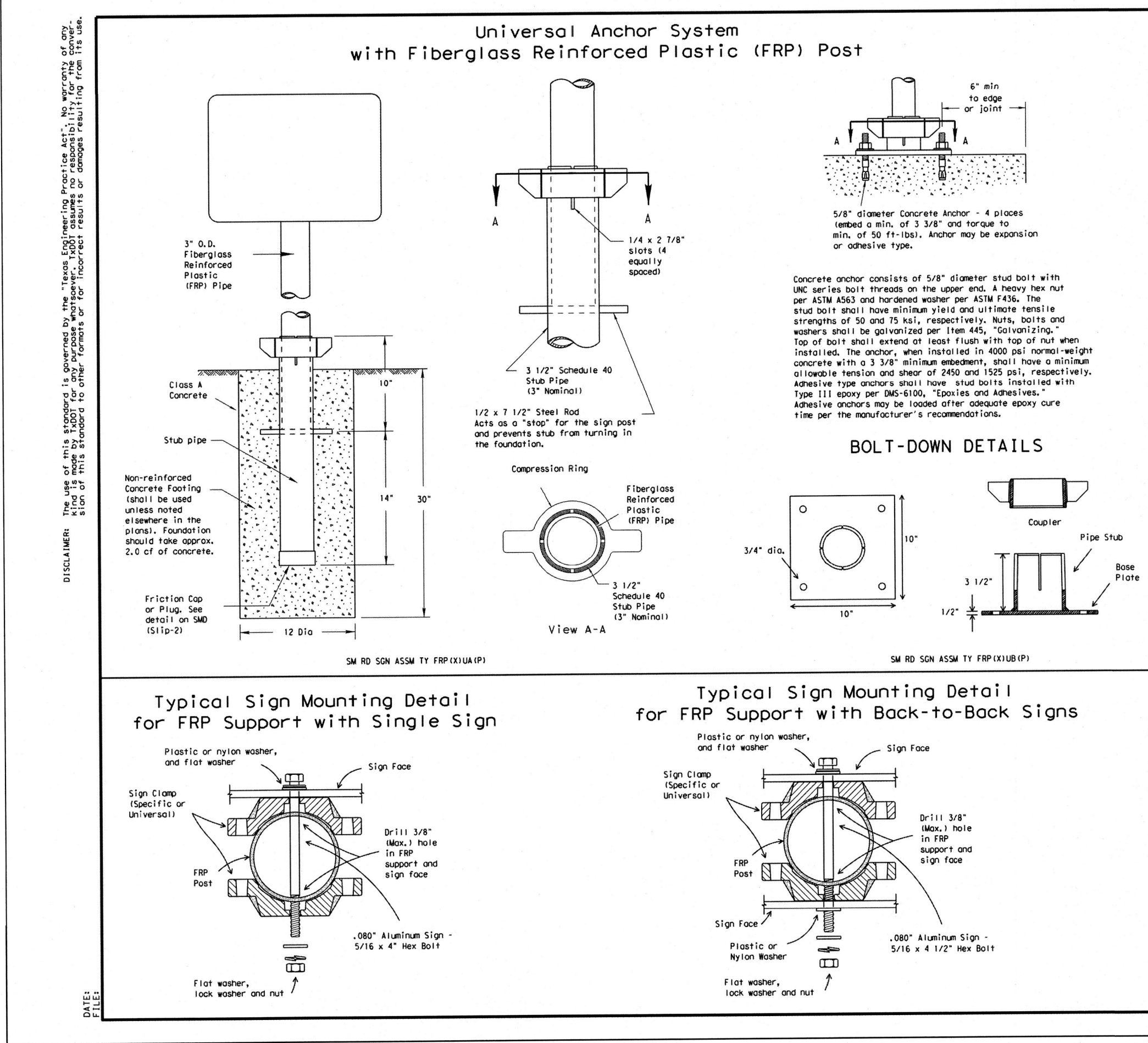
**GATES SUBDIVISION UNIT 2**  
BEXAR COUNTY, TX

**TRAFFIC SIGNAGE & PEDESTRIAN ACCESSIBILITY PLAN**

|                                       |                    |
|---------------------------------------|--------------------|
| <b>PLAT NO.</b><br><b>22-11800017</b> |                    |
| <b>JOB NO.:</b> 205-43-05             |                    |
| <b>DATE:</b> NOVEMBER 2021            |                    |
| <b>DRAWN:</b> OM                      | <b>CHECKED:</b> CL |
| <b>SHEET NUMBER:</b>                  |                    |

## 5.9







[illegible]

**Wedge Anchor Steel System**

**Universal Anchor System with Thin-Walled Tubing Post**

**General Notes:**

- The Wedge Anchor System and the Universal Anchor System with the wall tubing post may be used to support up to 10 square feet of sign area.
- The tubular socket, wedge and prefabricated T-bracket shall be permanently tested to ensure manufacturer's Method, design, and location of markings are subject to the approval of the "TODOT Traffic Standards Engineer."
- Concrete for posts: (1) 8MW T-tubing, clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The tubular sockets shall be prequalified as follows:  
Impressure test per ACI 308R-66 and producer list item.  
Material used as post with the system shall conform to the following specifications:  
(1) 8MW T-tubing (2.375 outside diameter (TW))  
(2) 60K thermal steel resistance  
Seamless or electric-resistance welded steel tubing shall meet the following:  
• 60ksi yield strength  
• 60ksi tensile strength  
• 100ksi PSI minimum yield strength  
• 70,000 PSI minimum tensile strength  
• 95% elongation in 2"  
Wall thickness (uncoated) shall be within the range of .083 to .094"  
Outside diameter (uncoated) shall be within the range of 2.375 to 2.50"  
Galvanneal per ASTM A153 or ASTM A563 G20. For prepackaged wall tubing (ASTM A563), second tube outside diameter weld seam by drilling with two wire per ASTM B663.
- Sign boards shall be flat steel and shaped along the flange.
- Additional sign clamp required on the "C-shaped Post" for ATYP sign. Place clamp at least 3" above bottom of hole when possible.
- Sign supports shall not be soldered except where shown. Signs and supports shall not be spliced.
- See the Traffic Operations Division website for detailed drawing of sign clamps and Wedge Anchor System components. The website address is: <http://www.txdot.gov/trafficops/signs.htm>

**WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE**

- Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" to provide a minimum foundation depth of 30". If solid rock is encountered, the socket/wedge may be reduced in length as required to a minimum length of 18". Any material removed from the socket/wedge must be replaced. The inner surfaces of the socket/wedge must remain free of concrete or other debris.
- The Engineer may permit placement of concrete less than 2 inches thick to be placed with a portable, remote driven concrete pump. For small placements less than 0.5 cubic yards, the mixing is a suitable substitute may be utilized by Engineer. Place concrete into hole and let it approximately four hours before the concrete sets.
- Insert tubular socket into concrete until top of socket is approximately 1/4" above concrete surface.
- Flatten the socket. Allow a minimum 4 days for concrete to cure, unless otherwise directed by Engineer.
- Attach the sign to the sign post.
- Insert the sign post into socket and align sign hole with roadway.
- Close the wedge into the socket to secure post. This will compress approximately 3 inches of the wedge opening.

**UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE**

- Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" to provide a minimum foundation depth of 30". If solid rock is encountered, the socket/wedge may be reduced in length as required to a minimum length of 18". Any material removed from the socket/wedge must be replaced. The inner surfaces of the socket/wedge must remain free of concrete or other debris.
- Insert base post in hole to depths shown and backfill hole with concrete.
- Level and place the base post using a tripod level and set the concrete adequately time to set. The bottom of the slot provided in the stub pipe shall remain smooth top of the concrete foundation.
- Attach the sign to the sign post.
- Install plastic insert around bottom of post.
- Insert sign post into base post. Lower until the post comes to rest on steel rod.
- Load compression ring by using a "T-bar" tool. The compression ring will be approximately level with top of slab post when optimally installed.
- Check sign post to insure it is unable to turn 1° force, increase the tightness of the compression ring.

**NOTE**

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

**Texas Department of Transportation**  
Traffic Operations Division

**SIGN MOUNTING DETAILS**  
**SMALL ROADSIDE SIGNS**  
**WEDGE & UNIVERSAL ANCHOR**  
**WITH THIN WALL TUBING POST**  
**SMD(TWT)-08**

| DATE: 07/20/07 July 2002 |          | Rev. | Description | By  | Check | Date     | Appr.    |
|--------------------------|----------|------|-------------|-----|-------|----------|----------|
| 1                        | 08/01/07 | 1    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 2                        | 08/01/07 | 2    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 3                        | 08/01/07 | 3    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 4                        | 08/01/07 | 4    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 5                        | 08/01/07 | 5    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 6                        | 08/01/07 | 6    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 7                        | 08/01/07 | 7    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 8                        | 08/01/07 | 8    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 9                        | 08/01/07 | 9    | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 10                       | 08/01/07 | 10   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 11                       | 08/01/07 | 11   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 12                       | 08/01/07 | 12   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 13                       | 08/01/07 | 13   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 14                       | 08/01/07 | 14   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 15                       | 08/01/07 | 15   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 16                       | 08/01/07 | 16   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 17                       | 08/01/07 | 17   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 18                       | 08/01/07 | 18   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 19                       | 08/01/07 | 19   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 20                       | 08/01/07 | 20   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 21                       | 08/01/07 | 21   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 22                       | 08/01/07 | 22   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 23                       | 08/01/07 | 23   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 24                       | 08/01/07 | 24   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 25                       | 08/01/07 | 25   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 26                       | 08/01/07 | 26   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 27                       | 08/01/07 | 27   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 28                       | 08/01/07 | 28   | Revised     | JOB | REV   | 08/01/07 | 08/01/07 |
| 29                       | 08/01/07 | 29   | Revised     | JOB | REV   | 08/      |          |

**DISCLAIMER:**

None of this drawing is intended to be used as a standard or specification for any particular product or material. The use of this drawing is intended to provide a general guide only. The user of this drawing is responsible for obtaining all necessary permits and approvals from the appropriate authorities. The user of this drawing is also responsible for ensuring that all materials and workmanship meet the requirements of the applicable codes and standards.

## TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS

**NOTE**

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. [https://www.txdot.gov/business/producer\\_list.htm](https://www.txdot.gov/business/producer_list.htm)

The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

**GENERAL NOTES:**

- Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Structures Engineer.
- Material used as post with this system shall conform to the following specifications:
  - 10 BNC tubing (2.875" outside diameter)
  - 0.134" nominal wall thickness
  - Seamless or electric-resistance welded steel tubing or pipe
  - Steel shall be A500S or 55 per ASTM A1001 or ASTM A1008
  - Other steels may be used if they meet the following:
    - 55,000 PSI minimum yield strength
    - 70,000 PSI minimum tensile strength
    - 200 minimum elongation in 2"
  - Wall thickness undamaged shall be within the range of 0.122" to 0.138"
  - Outside diameter undamaged shall be within the range of 2.857" to 2.895"
  - Galvanization per ASTM A123 or ASTM A653 (2016). For pre-painted steel tubing (ASTM A653), recast tube outside diameter weld seam by metalizing with zinc wire per ASTM B803.
  - Schedule 40 Pipe (2.875" outside diameter)
  - 0.274" nominal wall thickness
  - Steel tubing per ASTM A500 C
  - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
    - 48,000 PSI minimum yield strength
    - 62,000 PSI minimum tensile strength
    - 216 minimum elongation in 2"
  - Wall thickness undamaged shall be within the range of 0.248" to 0.304"
  - Outside diameter undamaged shall be within the range of 2.857" to 2.895"
  - Galvanization per ASTM A123
- See the Texas Department of Transportation website for detailed drawings of sign supports and Texas Universal Triangular Slipbase System components. The website address is <https://www.txdot.gov/contractors/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD (SLIP-2) for clearances based on sign types.

**ASSEMBLY PROCEDURE**

**Foundation**

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit barbed or concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 2 cubic yards, hand mixing in a suitable container may be allowed by the Engineer. Contractor shall be responsible for the uniform distribution of the slip base into the concrete. Rotate the stub and back the material pushing it down into the concrete to ensure good contact between the stub and the concrete. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Place the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The Triangular Slipbase system is multi-directional and is designed to release when struck from any direction.

**Support**

- Set support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the roadway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the roadway. The cut shall be stub and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD (SLIP-2) for clearances based on sign types.

### CONCRETE ANCHOR

Concrete anchor consists of 5/8" diameter stud bolt with 1/2" series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per IEEE 455, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-4100, "Isolates and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with 5 1/2" minimum embedment, shall have a minimum tensile strength and shear of 3900 and 3100 psi, respectively.

**DISCLAIMER:**

None of this drawing is intended to be used as a standard or specification for any particular product or material. The use of this drawing is intended to provide a general guide only. The user of this drawing is responsible for obtaining all necessary permits and approvals from the appropriate authorities. The user of this drawing is also responsible for ensuring that all materials and workmanship meet the requirements of the applicable codes and standards.

SMD (SLIP-1) - 08

| 07-001 July 2002 |         | Rev  | Date | By   | Check | Date | By   |
|------------------|---------|------|------|------|-------|------|------|
| 9-08             | REVISED |      |      |      |       |      |      |
| 0001             | 0001    | 0001 | 0001 | 0001 | 0001  | 0001 | 0001 |

268

**\*\*Capital = 6"**  
Lower case = 4 1/2"

BLUE BACKGROUND  
WHITE LETTERS, NUMBERS & ARROWS  
1/2" WHITE BORDER  
MAINTAIN 1" FROM EDGE OF SIGN

**9" GROUND MOUNT STREET NAME SIGNS**

**\*\*Capital = 6"**  
Lower case = 4 1/2"

BLUE BACKGROUND  
WHITE LETTERS, NUMBERS & ARROWS  
1/2" WHITE BORDER  
MAINTAIN 1" FROM EDGE OF SIGN

**9" GROUND MOUNT STREET NAME SIGNS  
WITH STREET DESIGNATION**

**\*\*Capital = 8"**  
Lower case = 6"

BLUE BACKGROUND  
WHITE LETTERS, NUMBERS & ARROWS  
1/2" WHITE BORDER  
MAINTAIN 1" FROM EDGE OF SIGN

**18" OVERHEAD STREET NAME SIGNS**

|                     | 18" OVERHEAD SIGN                                                             | 9" GROUND MOUNT SIGNS                                                        |
|---------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| HEIGHT              | 18" (381 mm)                                                                  | 9" (228 mm)                                                                  |
| LENGTH              | 48" (1200 mm) MIN.<br>72" (1800 mm) MAX.<br>7' (2000 mm) INCREMENTS OF LENGTH | 24" (600 mm) MIN.<br>48" (1200 mm) MAX.<br>6' (1800 mm) INCREMENTS OF LENGTH |
| THICKNESS           | 0.125" (3 mm)                                                                 |                                                                              |
| SUBSTRATE           | ALUMINUM ALLOY, 5052-H39 (ASTM B-209)<br>GOLD CHROMATE FINISH                 |                                                                              |
| SIGN FACE MATERIALS | BLUE FILM *<br>OVER DIAMOND GRADE<br>- ASTM Type XI<br>Non-Fluorescent        | BLUE FILM *<br>OVER HIGH INTENSITY<br>PRISMATIC- ASTM Type IV                |
| LEGENDS AND SYMBOLS | SERIES D, B OR C<br>IF NAME OTHERWISE EXCEEDS<br>MAXIMUM SIGN LENGTH          |                                                                              |
| COLOR               | WHITE LEGEND ON BLUE BACKGROUND                                               |                                                                              |
| LETTER TRACKING     | 17% (USJAL)<br>10% (MNL)                                                      | 10%                                                                          |

\* ACRYLIC ELECTRONIC CUTTABLE FILM

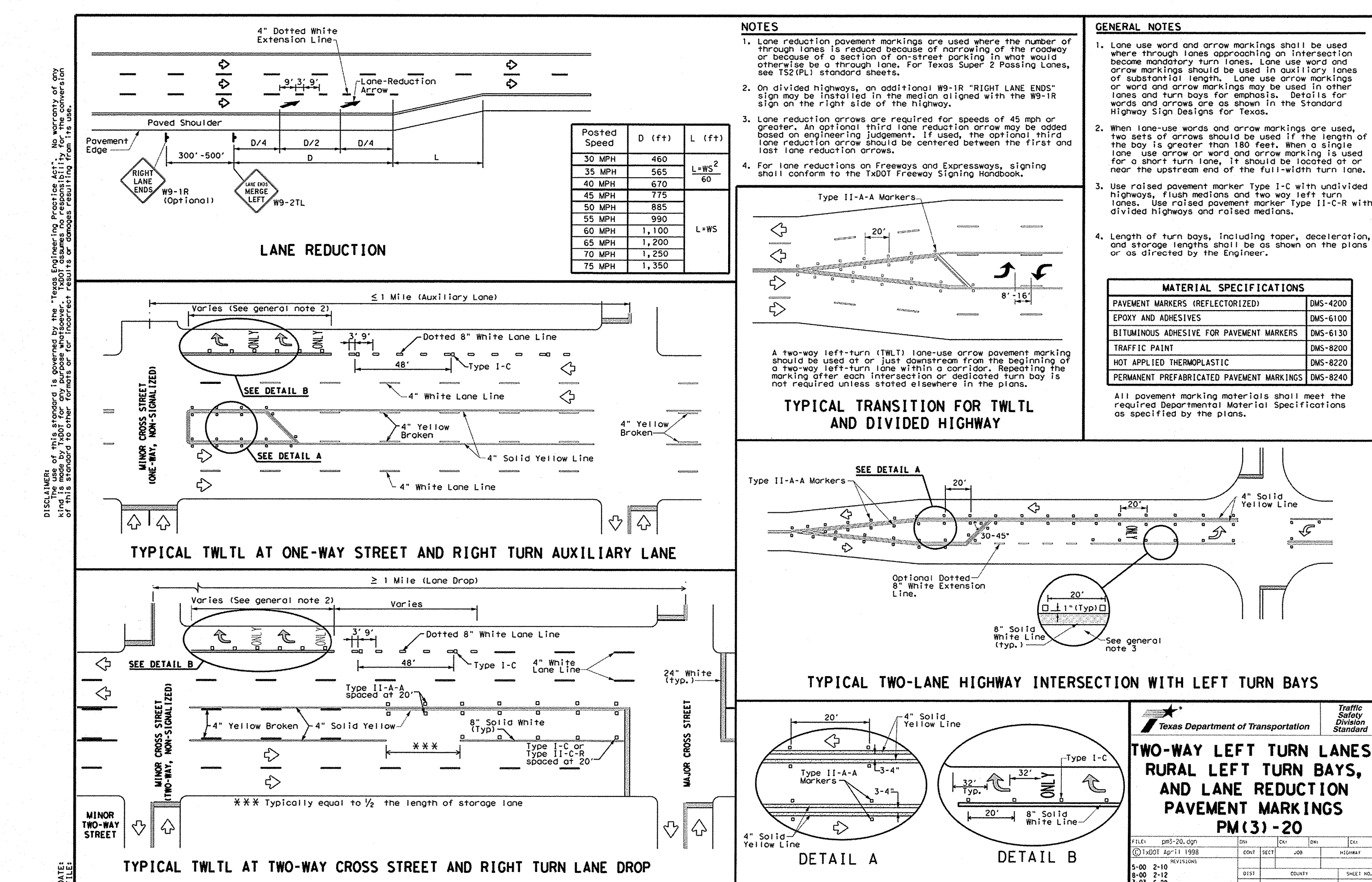
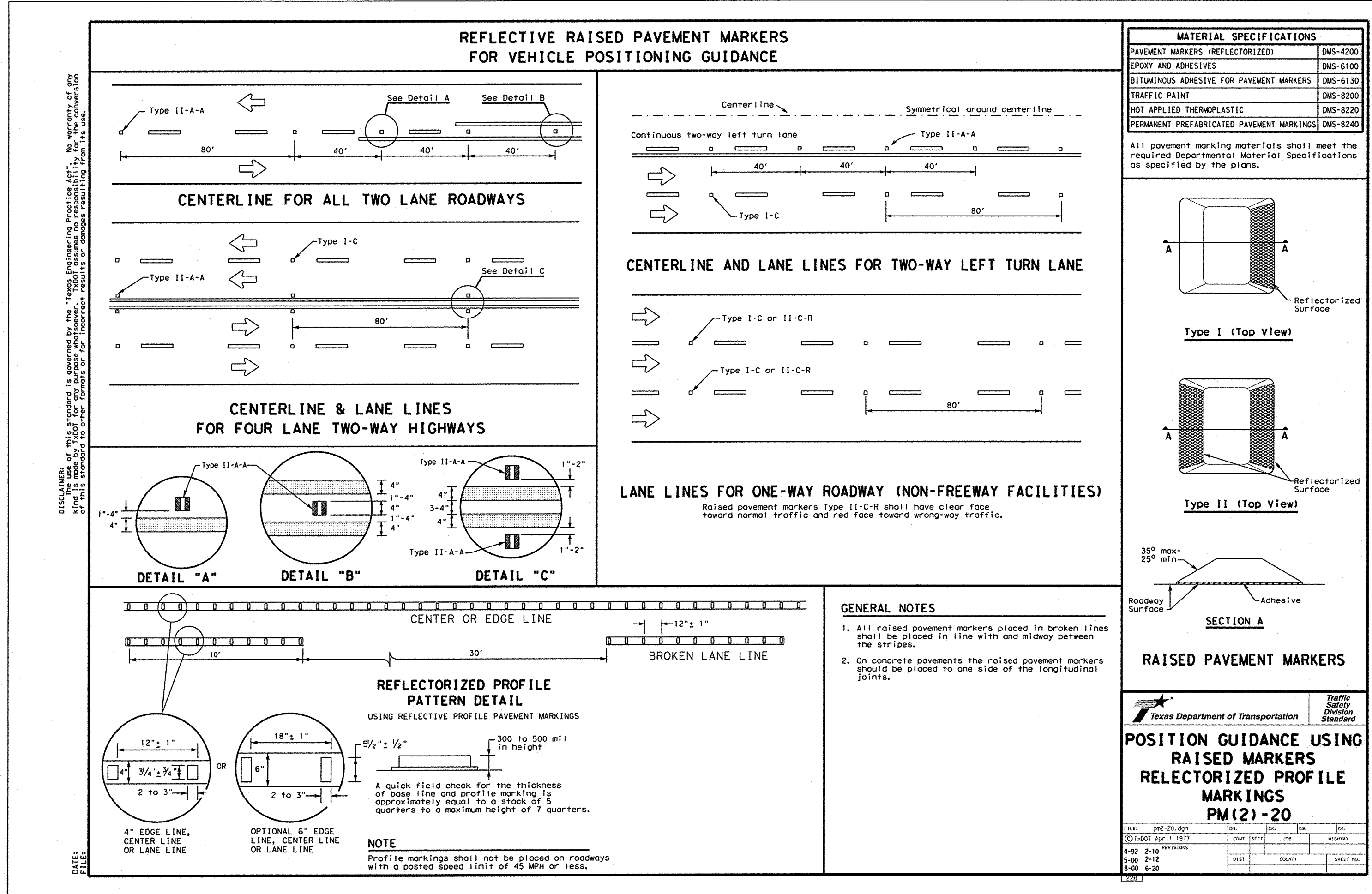
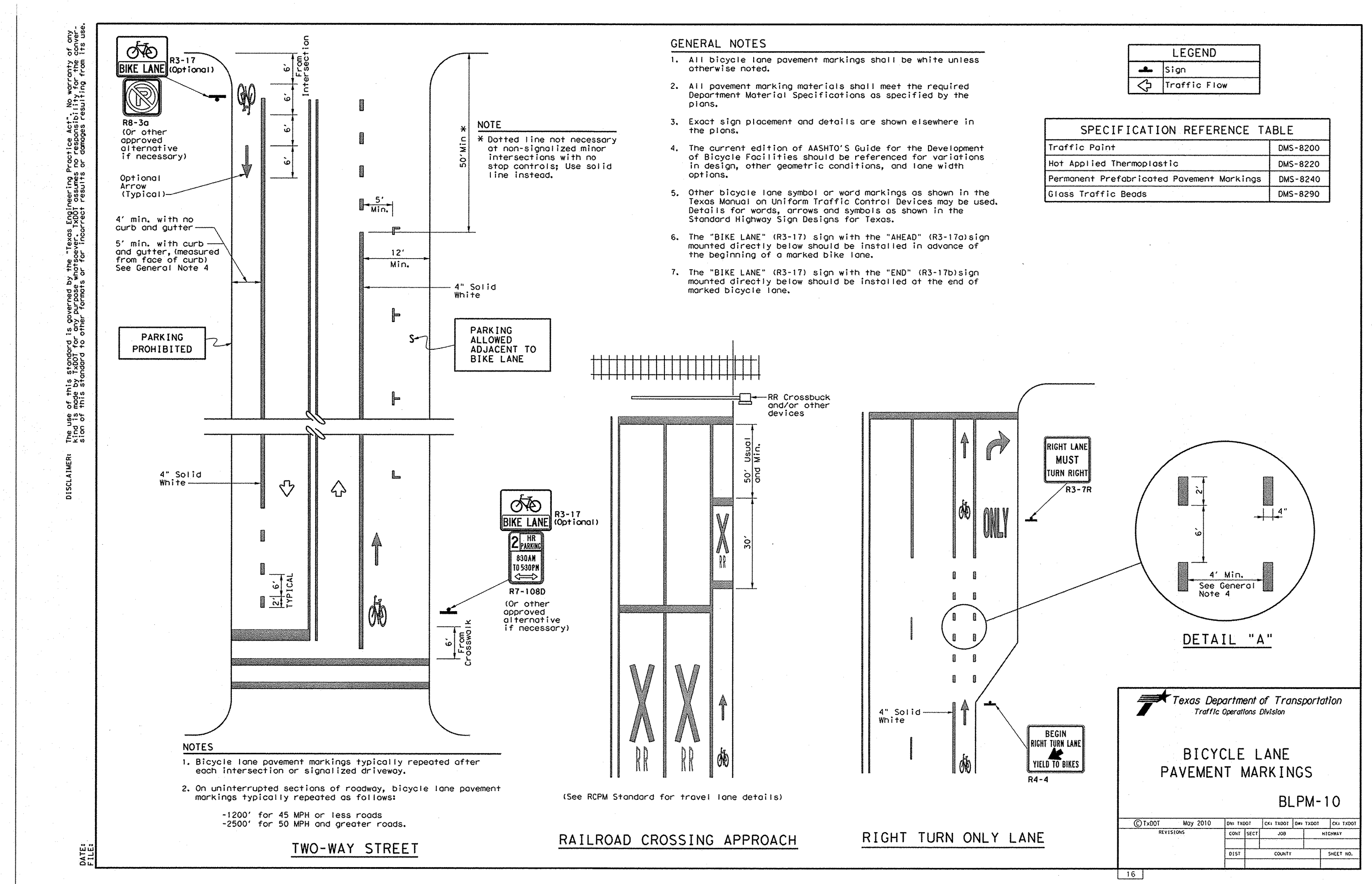
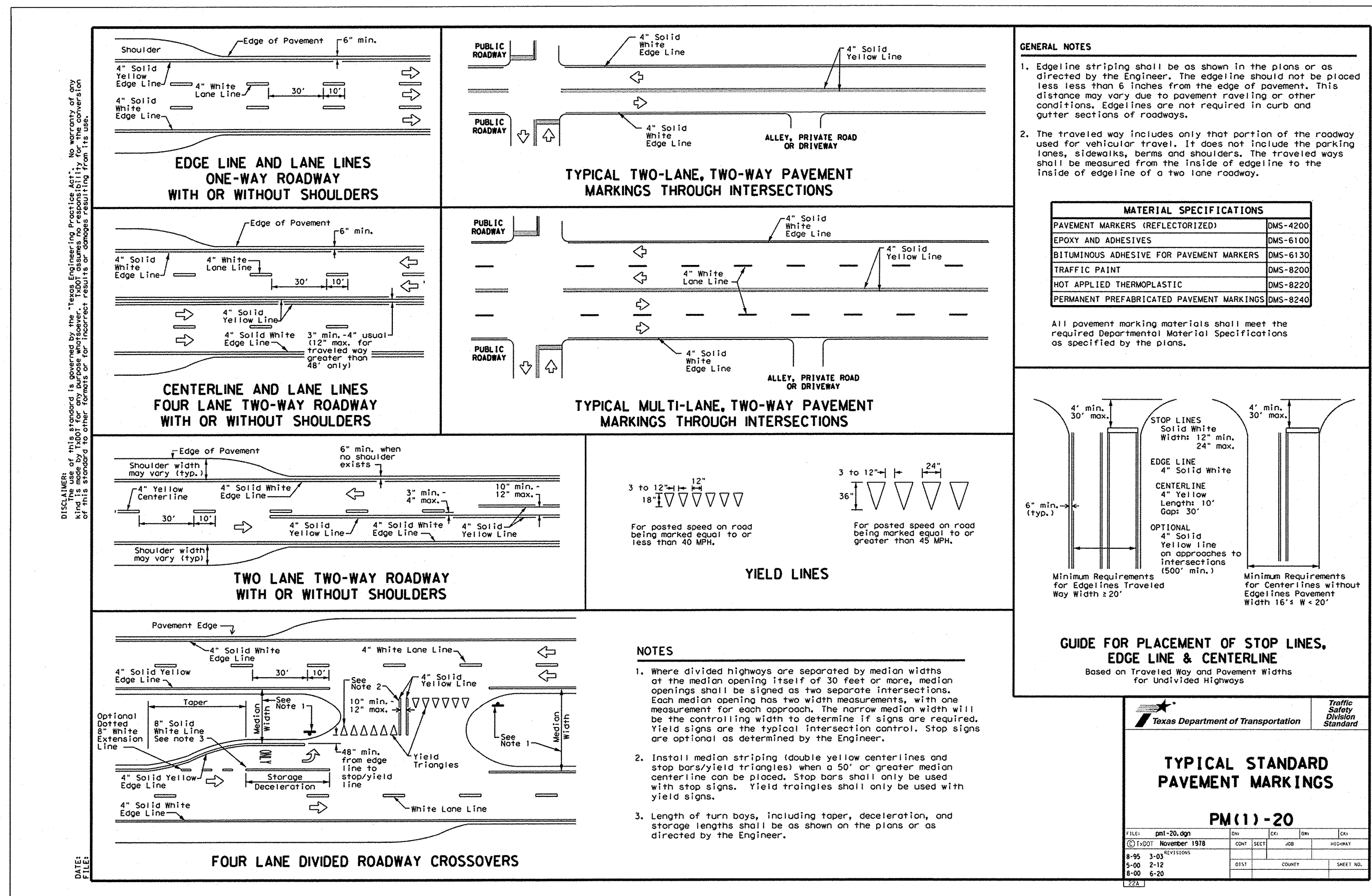
**SPAN WIRE INSTALLATION**  
**MST ARM INSTALLATION**

SIGN FACE MATERIALS  
SHALL CONFORM TO:

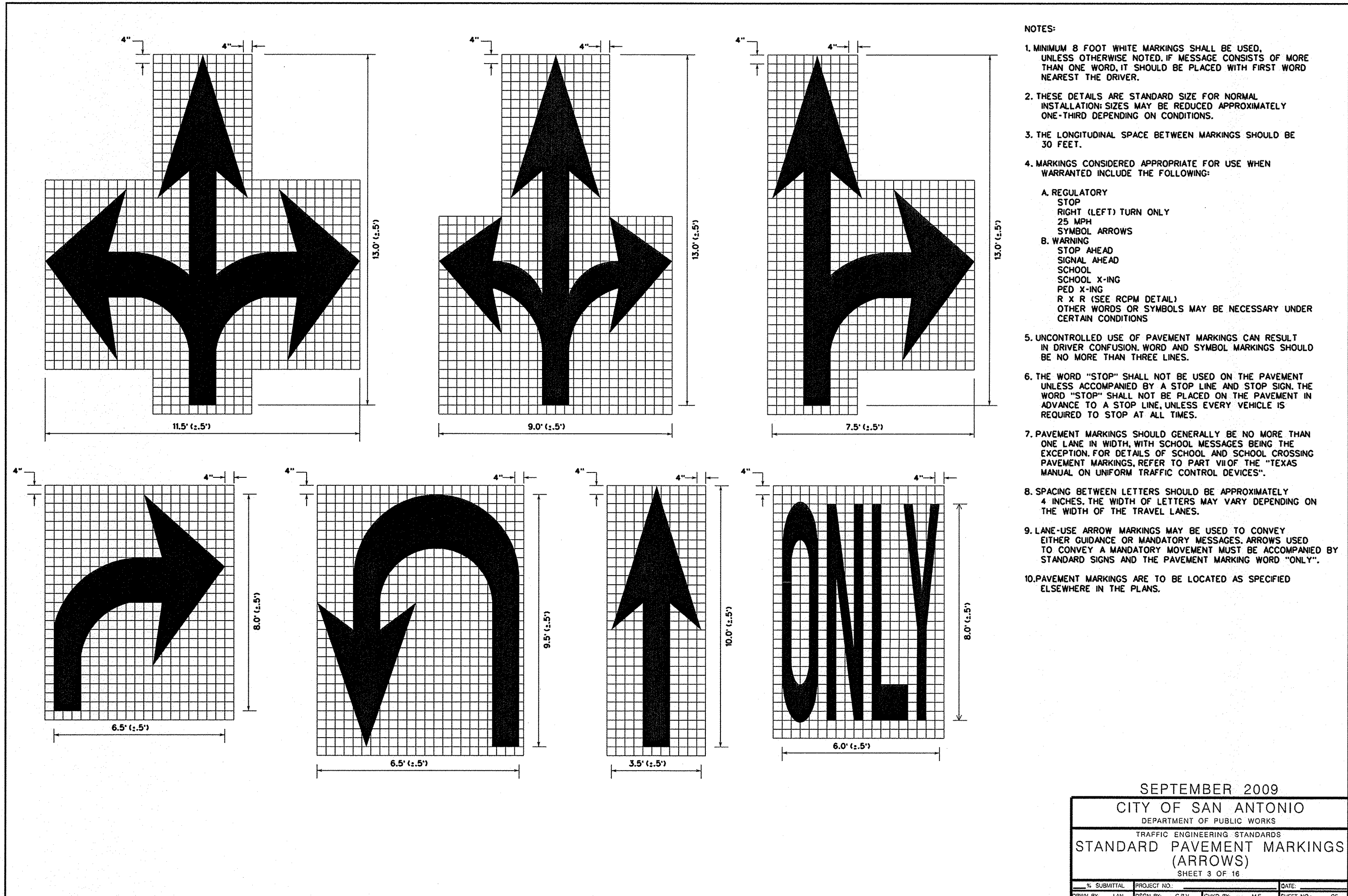
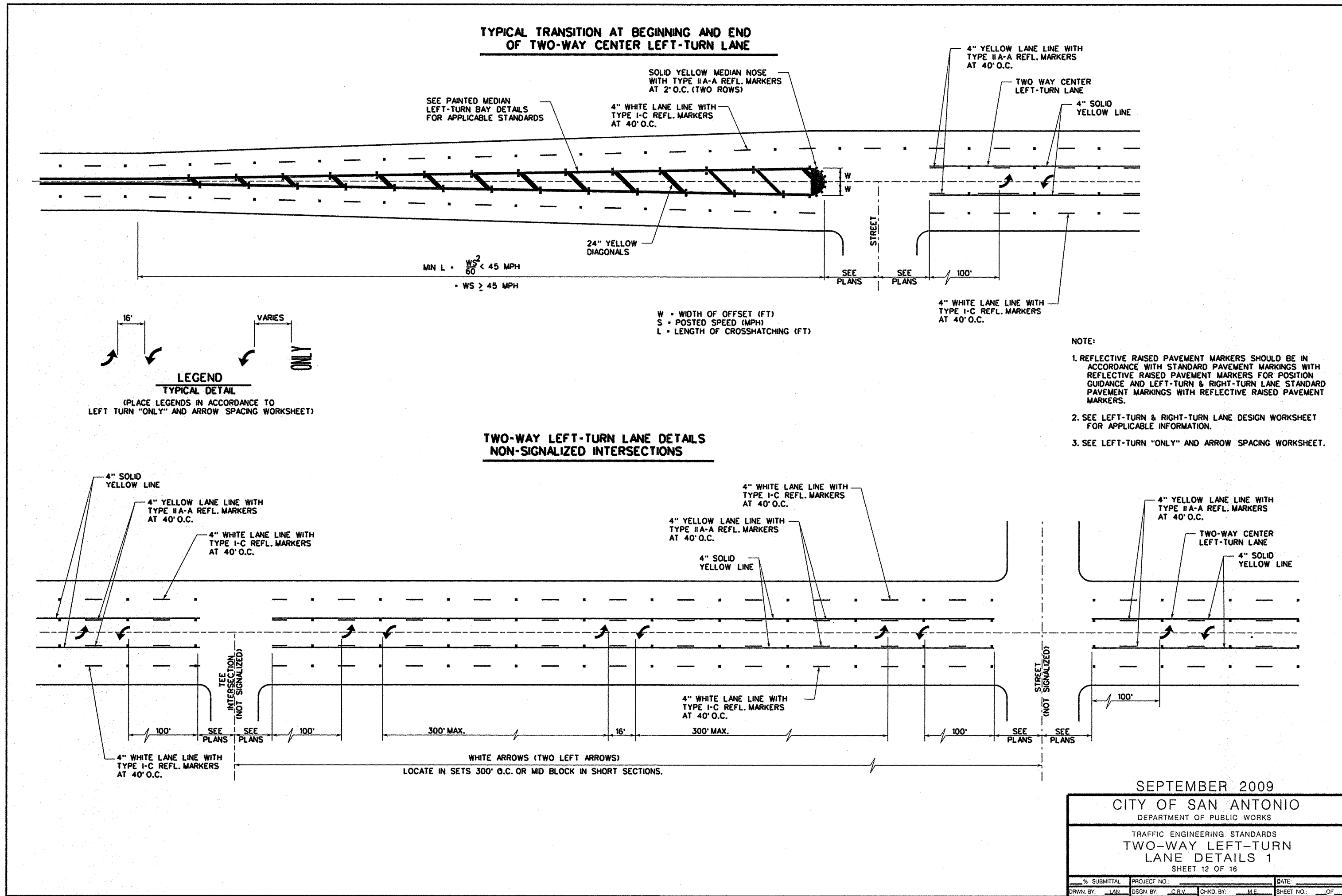
- STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL, HIGHWAY PROJECTS - PP-03 U.S. CUSTOMARY UNITS SECTION 718
- GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-3-300C
- ASTM D 4956 - 05e1

STATE OF TEXAS  
MAY FRANCES TENIENTE  
REGISTERED PROFESSIONAL ENGINEER  
76902  
A-8-11









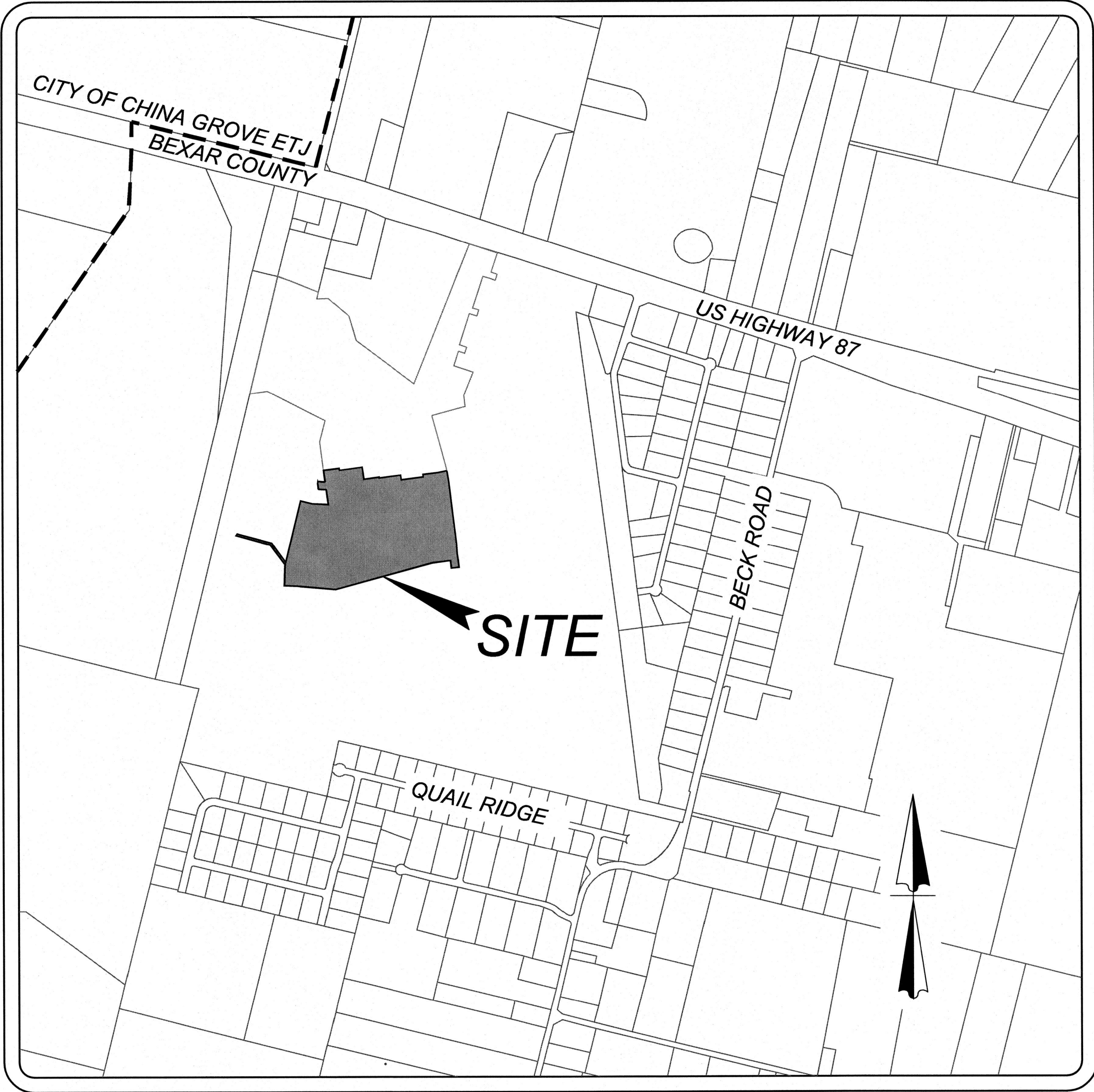


GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
SANITARY SEWER IMPROVEMENTS

- GENERAL SEWER NOTES (REVISED JULY 2017)
1. All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:
- A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Waste Water System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.
  - B. Current TxDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
  - C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
  - D. Current City of San Antonio "Standard Specifications for Public Works Construction".
  - E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
2. The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction Inspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.
3. The Contractor shall obtain the SAWS Standard Details from the SAWS website, [http://www.saws.org/business\\_center/specs](http://www.saws.org/business_center/specs). Unless otherwise noted within the design plans.
4. The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.
5. Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.
6. The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:
- SAWS Utility Locates: <http://www.saws.org/Service/Locates>  
COSA Drainage (210) 207-0724 or (210) 207-6026  
COSA Traffic Signal Operations (210) 206-8480  
COSA Traffic Signal Damages (210) 207-3951  
Texas State Wide One Call Locator 1-800-545-8005 or 811
7. The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.
8. All work in Texas Department of Transportation (TxDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.
9. The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
10. The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
11. Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to [constructreq@saws.org](mailto:constructreq@saws.org). Weekend Work: Contractors are required to notify the SAWS Construction Department 48 hours in advance to request weekend work. Request should be sent to [constructreq@saws.org](mailto:constructreq@saws.org). Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
12. Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS Inspector and/or the test administrator, per each 12-inch loose lift per 400 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.
13. A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

Sewer Notes:

1. The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:
- A. Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210) 233-2014. Provide the address of the spill and an estimated volume or flow.
  - B. Attempt to eliminate the source of the SSO.
  - C. Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.
  - D. Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.
  - E. Clean the affected sewer mains and remove any debris.
  - F. Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at SAWS direction) within 24 hours.
- Should the Contractor fail to address an SSO immediately and to SAWS satisfaction, they will be responsible for all cost incurred by SAWS, including any fines from EPA, TCEQ and/or any other Federal, State or Local Agencies.
- No separate measurement or payment shall be made for this work. All work shall be done according to guidelines set by TCEQ and SAWS.
2. If bypass pumping is required, the Contractor shall perform such work in accordance with SAWS Standard Specification for Water and Sanitary Sewer Construction, Item No. 864, "Bypass Pumping".
3. Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the SAWS Construction Inspection Division at (210) 233-2973 at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor sequence the work accordingly.
4. Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(Ee)(d)(B). Contractor shall center a 20' joint of 160 psi pressure rated PVC at the proposed water crossing.
5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY. It shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project's improvements. (NSP).
6. Spills, Overflows, or Discharges of Wastewater: All Spills, overflows, or discharges of wastewater, recycled water, petroleum products, or chemicals must be reported immediately to the SAWS Inspector assigned to the Counter Permit or General Construction Permit (GCP). This requirement applies to every spill, overflow, or discharge regardless of size.
7. Manhole and all pipe testing (including the TV inspection) must be performed and passed prior to Final Field Acceptance by SAWS Construction Inspection Division, as per SAWS Specifications For Water and Sanitary Sewer Construction.
8. All PVC pipe over 14 feet of cover shall be extra strength with minimum pipe stiffness of 115 psi.



LOCATION MAP  
NOT-TO-SCALE

OWNER INFORMATION  
MEH HOLDING COMPANY LTD  
5210 THOUSAND OAKS, SUITE 1318  
SAN ANTONIO, TX 78233

DEVELOPER'S NAME: MEH HOLDING COMPANY LTD  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD, BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE#: FAX#: TOTAL ACREAGE: 22.29 AC.  
SAWS BLOCK MAP#: 216562, 216560, 214560 TOTAL EDU'S: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. ~ 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547

SHEET LIST TABLE

| Sheet Title                                | Sheet Number |
|--------------------------------------------|--------------|
| SANITARY SEWER COVER SHEET                 | 6.0          |
| OVERALL SANITARY SEWER PLAN (SHEET 1 OF 2) | 6.1          |
| OVERALL SANITARY SEWER PLAN (SHEET 2 OF 2) | 6.2          |
| LINE "A" PLAN & PROFILE                    | 6.3          |
| LINE "B" PLAN & PROFILE                    | 6.4          |
| LINE "C", "D", & "E" PLAN & PROFILE        | 6.5          |
| LINE "F" & "G" PLAN & PROFILE              | 6.6          |

| SHEET REVISION LOG |           |              |             |
|--------------------|-----------|--------------|-------------|
| DATE               | SHEET NO. | REVISION NO. | DESCRIPTION |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |



**KFW**  
ENGINEERS + SURVEYING  
has joined Colliers Engineering & Design  
3421 Paeanos Pkwy., Suite 200, San Antonio, TX 78231  
Phone # (210) 979-8444 • Fax # (210) 979-8441  
TBPE Firm # 9513 • TBPLS Firm # 10122300

PLAT NO. 22-11800017

SHEET 6.0



**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

**DRY UTILITY CONDUIT NOTE:**  
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

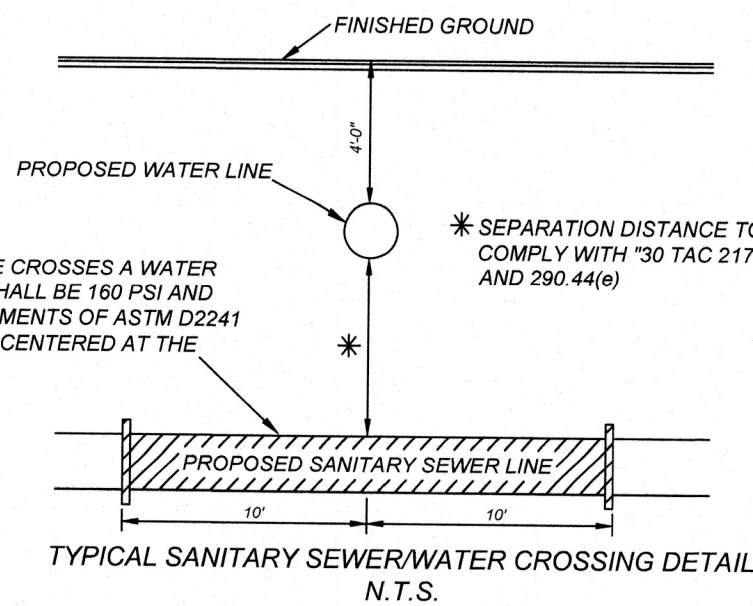
**REFERENCE S.A.W.S. DETAILS**

DD-804-01 SANITARY SEWER PIPE LAID IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-848-01 GO, NO GO DEFLECTION TESTING MANDREL  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL

**CAUTION!!!** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

**OPEN SPACE NOTE:**  
LOT 903 IS DESIGNATED AS A PRIVATE DRAINAGE AND SANITARY SEWER EASEMENT. LOT 904 BLOCK 5 IS DESIGNATED AS OPEN SPACE. PRIVATE DRAINAGE AND SANITARY SEWER EASEMENT. LOT 902 BLOCK 6 IS DESIGNATED AS OPEN SPACE AND AS A COMMON AREA AND A DRAINAGE, SEWER, WATER, ELECTRIC, GAS TELEPHONE AND CABLE TV EASEMENT.

**MANHOLE NOTE:**  
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.



WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20" JOINT CENTERED AT THE WATER CROSSING.

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

STA: 6+00.88  
M.H. "A2"

STA: 3+90.13  
M.H. "A1"

STA: 10+36.07  
M.H. "A4"

STA: 13+16.86  
M.H. "A5"  
END LINE "A"

STA: 6+51.20  
M.H. "G1"  
END LINE "G"

STA: 7+54.56 LINE "A" =  
STA: 1+00.00 LINE "B"  
M.H. "A3"  
BEGIN LINE "B"

STA: 3+68.34  
M.H. "B1"

WATER CROSSING  
STA: 7+42.24  
REF. WATER CROSSING  
DETAIL THIS SHEET.

DRAIN "B" CROSSING  
STA: 7+26.76  
SEE SHEET 4.3

DRAIN "A"

**NOTE:**

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
- SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET --- SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.
- SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASMENT AND A WATER TIGHT RING AND COVER.

DEVELOPER'S NAME: MEH HOLDING COMPANY LTD  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD, BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE#: FAX#: TOTAL ACREAGE: 22.29 AC.  
SAWS BLOCK MAP#: 216862, 216860, 214560 TOTAL EDU/S: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. - 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547

**GATES SUBDIVISION UNIT 2**  
BEXAR COUNTY, TX  
**OVERALL SANITARY SEWER PLAN (SHEET 1 OF 2)**

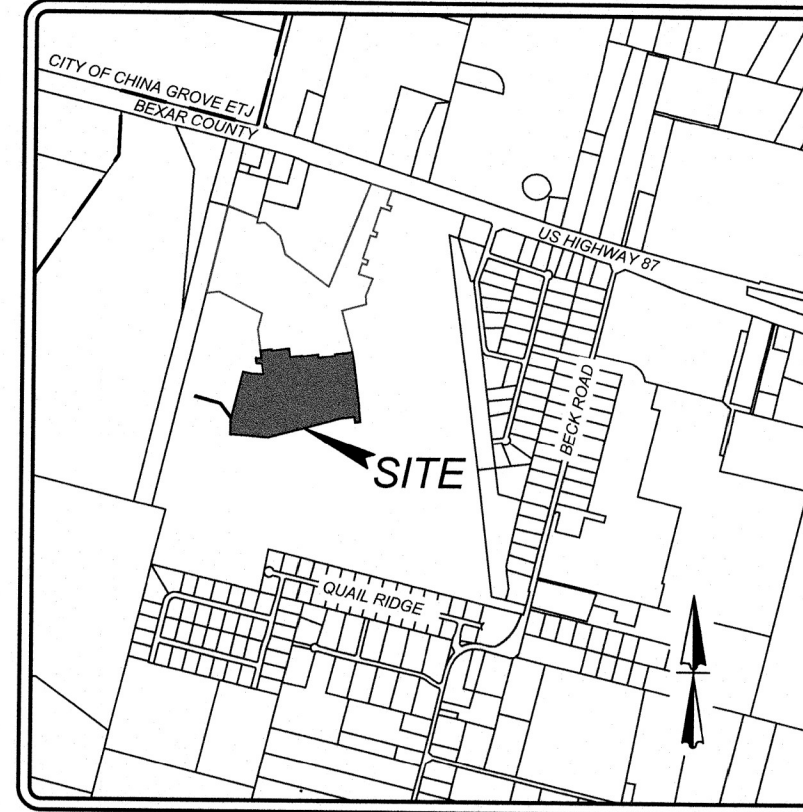
PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

6.1



ISSUE DATE  
REVISIONS

**K&W**  
**ENGINEERS + SURVEYING**  
3421 Penasco Pkwy, Suite 200, San Antonio, TX 78231  
Phone #: (210) 975-8444 • Fax #: (210) 975-8441  
TBE Firm #: 9513 • TBE License Firm #: 10122900



**LOCATION MAP**  
NOT-TO-SCALE

**LEGEND**

- |                                                        |                |
|--------------------------------------------------------|----------------|
| PROPOSED WATER MAIN                                    | W              |
| PROPOSED WATER SERVICE & METER BOX                     | W              |
| PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX     | W              |
| PROPOSED FIRE HYDRANT                                  | W              |
| PROPOSED WATER VALVE                                   | W              |
| PROPOSED SANITARY SEWER MAIN                           | SS             |
| PROPOSED SANITARY SEWER MANHOLE                        | SS             |
| PROPOSED SANITARY SEWER LATERAL                        | SS             |
| PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT | E, G, T, TV, E |
| EXISTING WATER MAIN                                    | E, W           |
| EXISTING FIRE HYDRANT                                  | W              |
| EXISTING WATER VALVE                                   | W              |
| EXISTING SANITARY SEWER MAIN                           | E, SS          |
| EXISTING SANITARY SEWER MANHOLE                        | SS             |
| EXISTING OVERHEAD ELECTRIC WIPOWER POLE                | OHE            |
| EXISTING GUY WIRE/OVERHEAD ELECTRIC                    | OHE            |



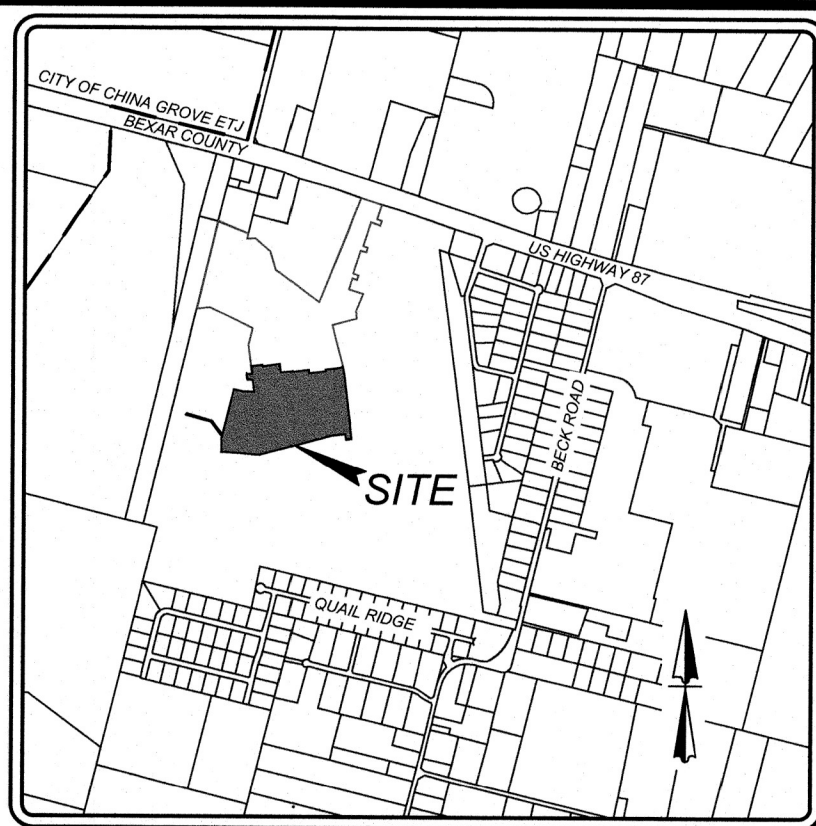
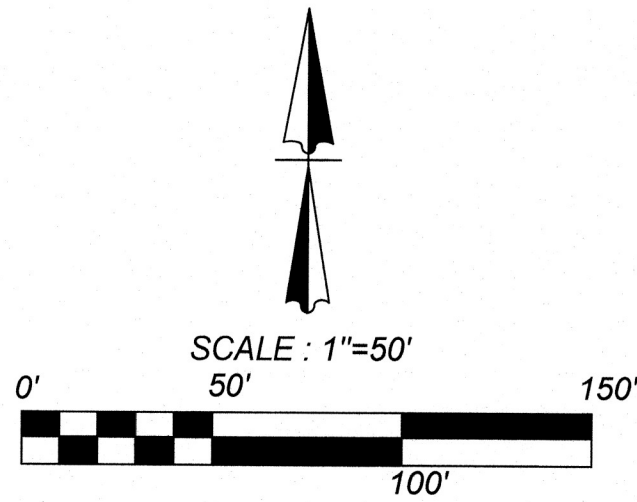
**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

**DRY UTILITY CONDUIT NOTE:**  
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.

**REFERENCE S.A.W.S. DETAILS**

DD-804-01 SANITARY SEWER PIPE Laid IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-848-01 GO, NO GO DEFLECTION TESTING MANDREL  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASUREMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASUREMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL



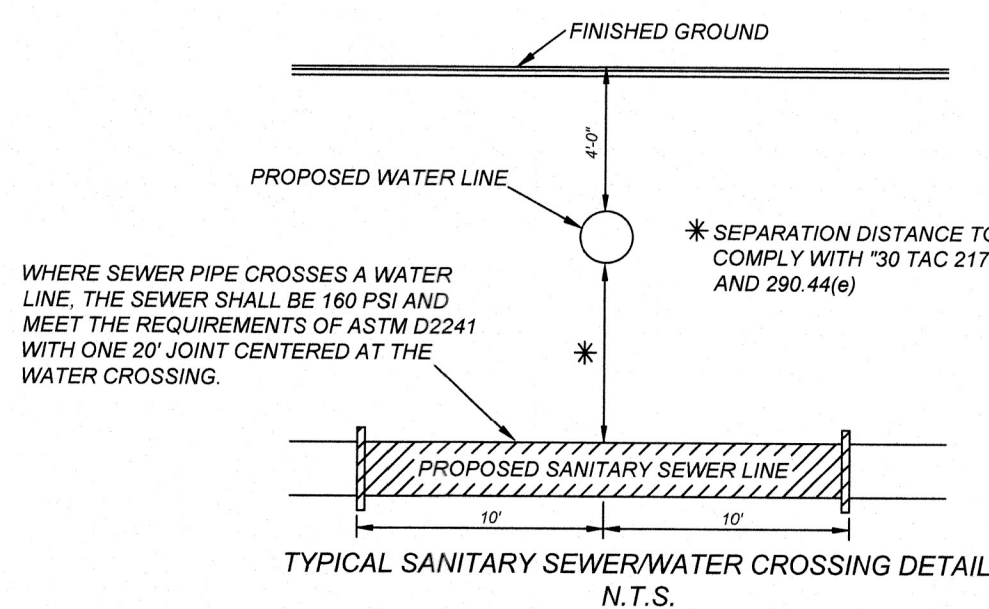
**LOCATION MAP  
NOT-TO-SCALE**

**LEGEND**

|                                                        |             |
|--------------------------------------------------------|-------------|
| PROPOSED WATER MAIN                                    | = W         |
| PROPOSED WATER SERVICE & METER BOX                     | =           |
| PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX     | =           |
| PROPOSED FIRE HYDRANT                                  | =           |
| PROPOSED WATER VALVE                                   | =           |
| PROPOSED SANITARY SEWER MAIN                           | = SS        |
| PROPOSED SANITARY SEWER MANHOLE                        | =           |
| PROPOSED SANITARY SEWER LATERAL                        | =           |
| PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT | = E.G.T.V.E |
| EXISTING WATER MAIN                                    | = E.W       |
| EXISTING FIRE HYDRANT                                  | =           |
| EXISTING WATER VALVE                                   | =           |
| EXISTING SANITARY SEWER MAIN                           | = E.SS      |
| EXISTING SANITARY SEWER MANHOLE                        | =           |
| EXISTING OVERHEAD ELECTRIC W/POWER POLE                | = OHE       |
| EXISTING GUY WIRE/OVERHEAD ELECTRIC                    | =           |

**NOTE:**

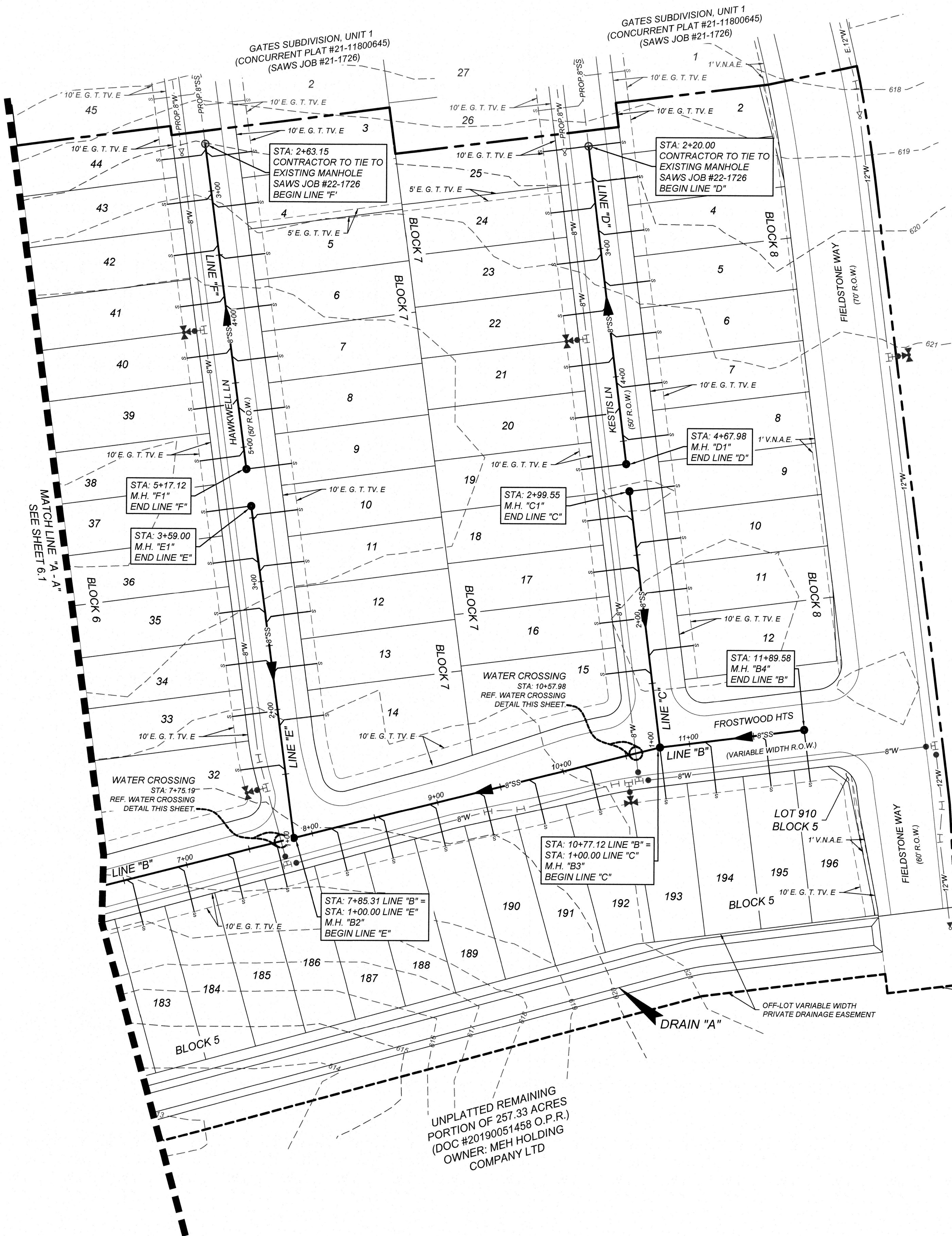
- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
- SEWER PIPE WHERE WATER LINE CROSSES SHALL MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET ---, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.
- SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASUREMENT AND A WATER TIGHT RING AND COVER.



WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.

**MANHOLE NOTE:**  
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

**CAUTION!!** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

**GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
OVERALL SANITARY SEWER PLAN (SHEET 2 OF 2)**

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:  
**6.2**





# TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGNER/TECHNICAL SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

## COMPACTION NOTE

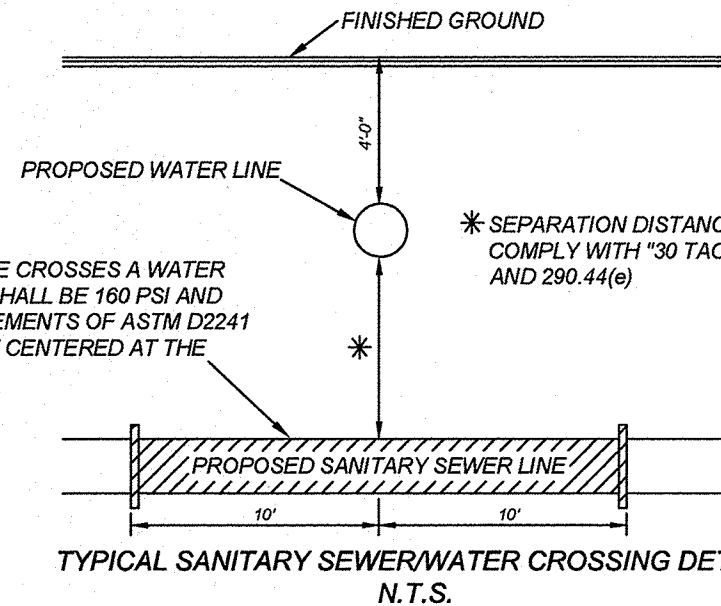
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

## NOTE:

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
- SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
- SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER.

## REFERENCE S.A.W.S. DETAILS

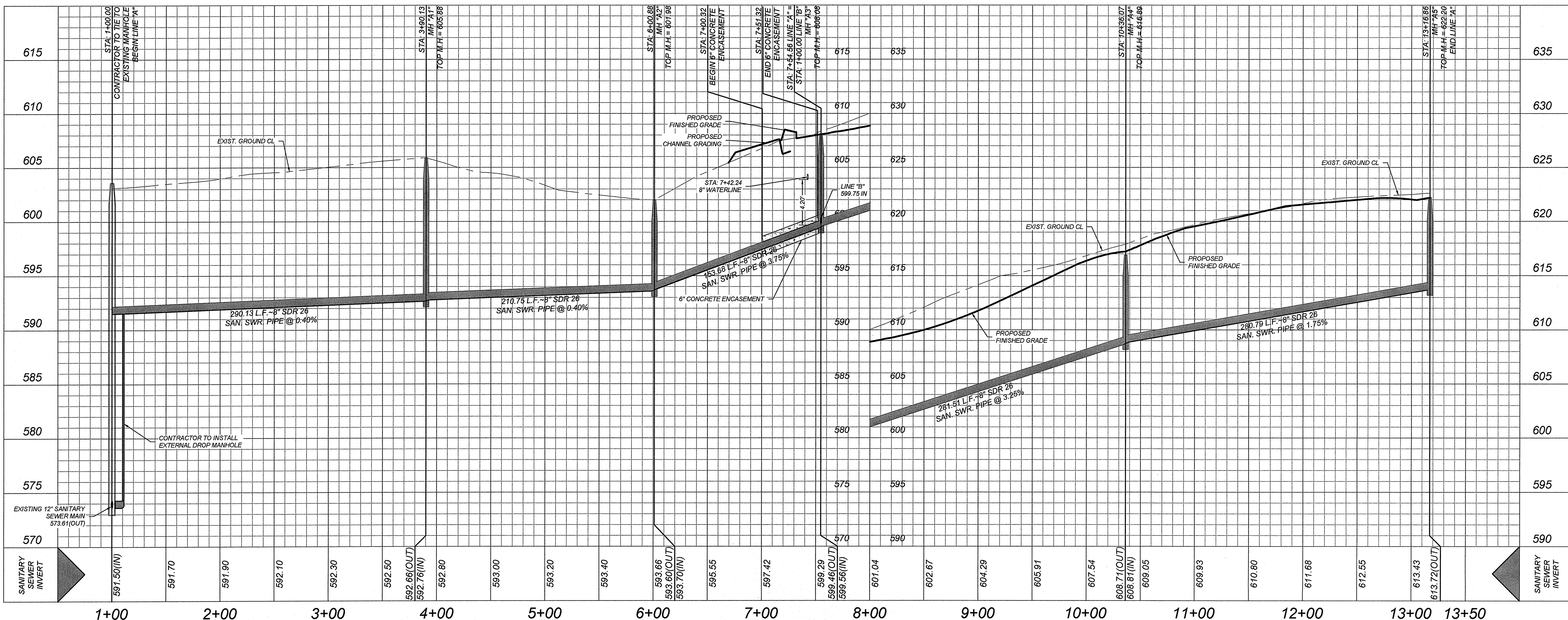
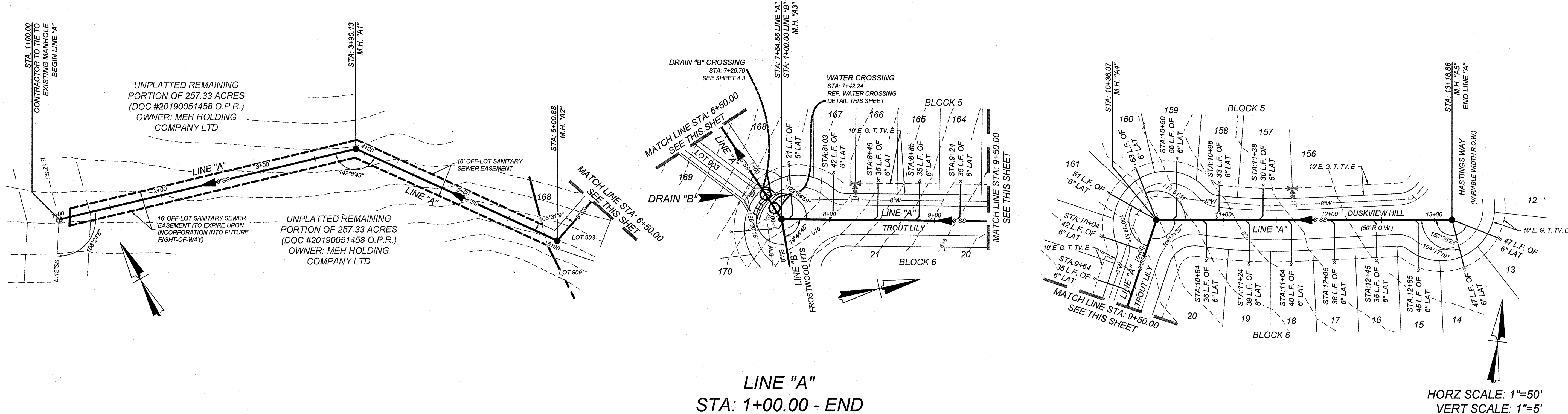
DD-804-01 SANITARY SEWER PIPE LAIN IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-948-01 GO, NO GO DEFLECTION TESTING MANDREL  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASEMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASEMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL



CAUTION: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

MANHOLE NOTE:  
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

DEVELOPER'S NAME: MEH HOLDING COMPANY LTD  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD, BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE: FAX: TOTAL ACRES: 22.29 AC.  
SAWS BLOCK MAP#: 218562, 218560, 214560 TOTAL EDU'S: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. - 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
LINE "A" PLAN & PROFILE

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

6.3



# TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

## COMPACTION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 100 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

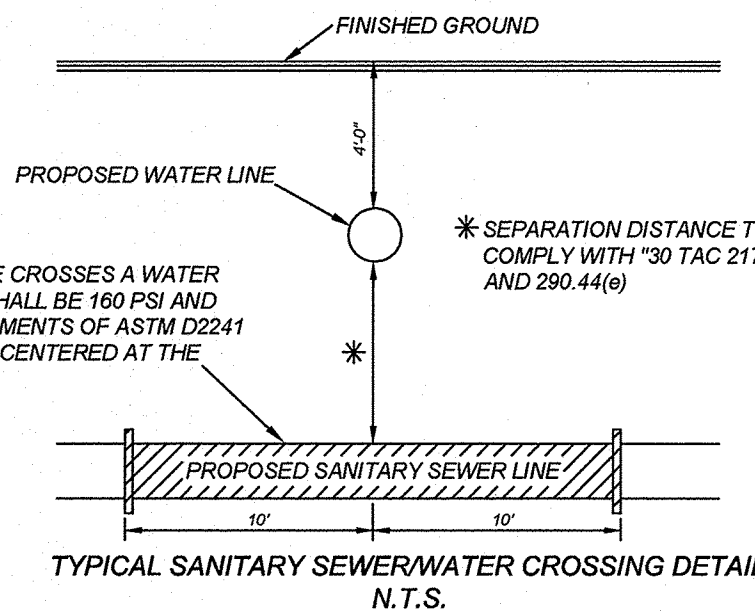
## NOTE:

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
- SEWER PIPE WHERE WATER LINE CROSSES SHALL MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
- SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASMENT AND A WATER TIGHT RING AND COVER.

## REFERENCE S.A.W.S. DETAILS

DD-804-01 SANITARY SEWER PIPE Laid IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-848-01 GO, NO GO DEFLECTION TESTING MANDREL  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL

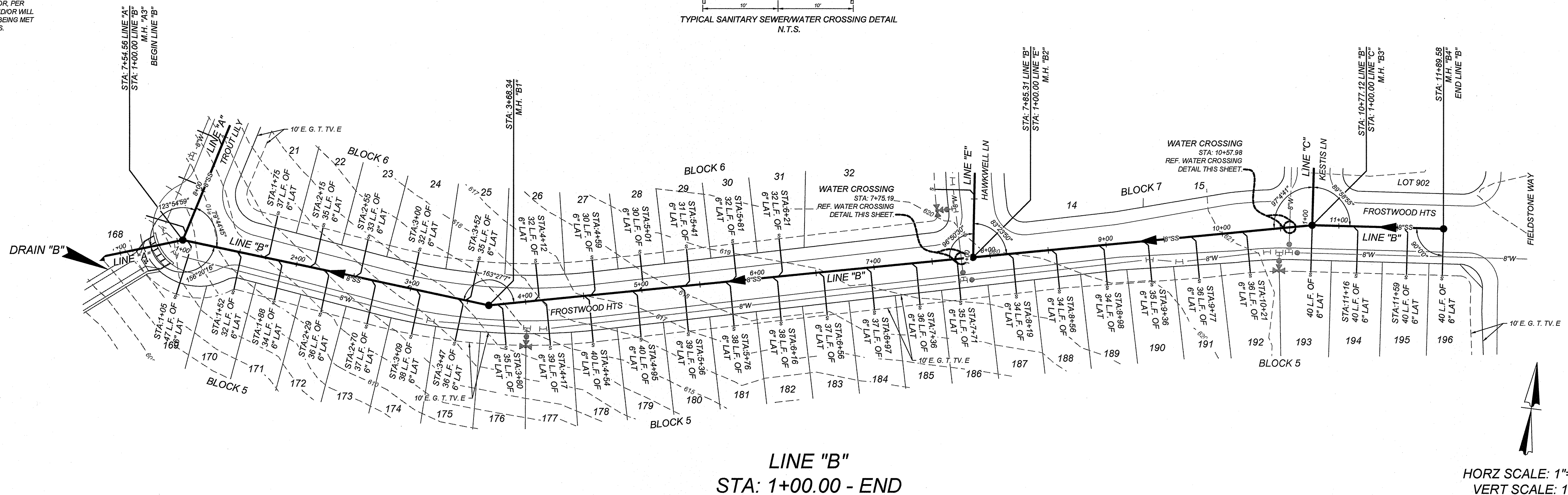
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.



CAUTION: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

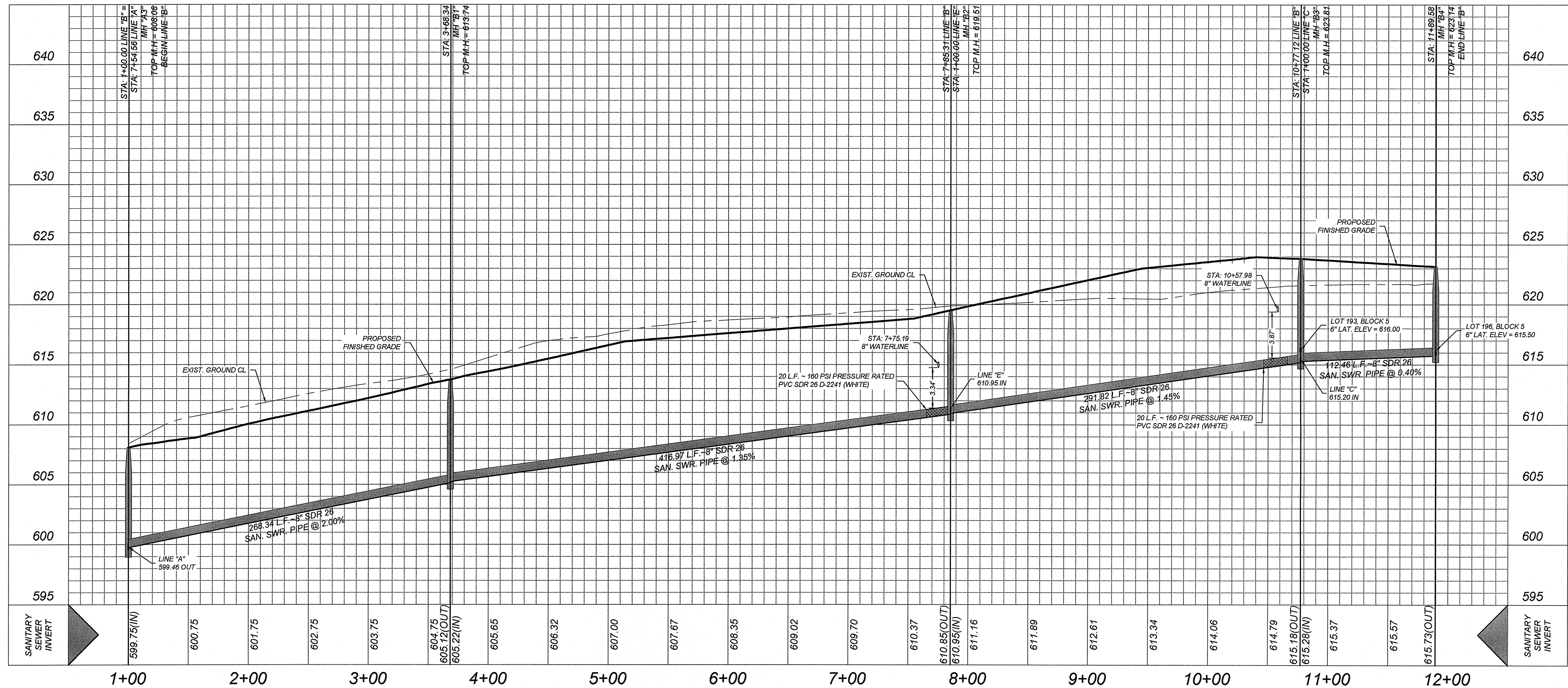
MANHOLE NOTE:  
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

DEVELOPER'S NAME: MEH HOLDING COMPANY LTD  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD. BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE: FAX: TOTAL ACREAGE: 22.29 AC.  
SAWS BLOCK MAP#: 216552, 216550, 214500 TOTAL EDUS: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. - 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547



LINE "B"  
STA: 1+00.00 - END

HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
LINE "B" PLAN & PROFILE

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

6.4



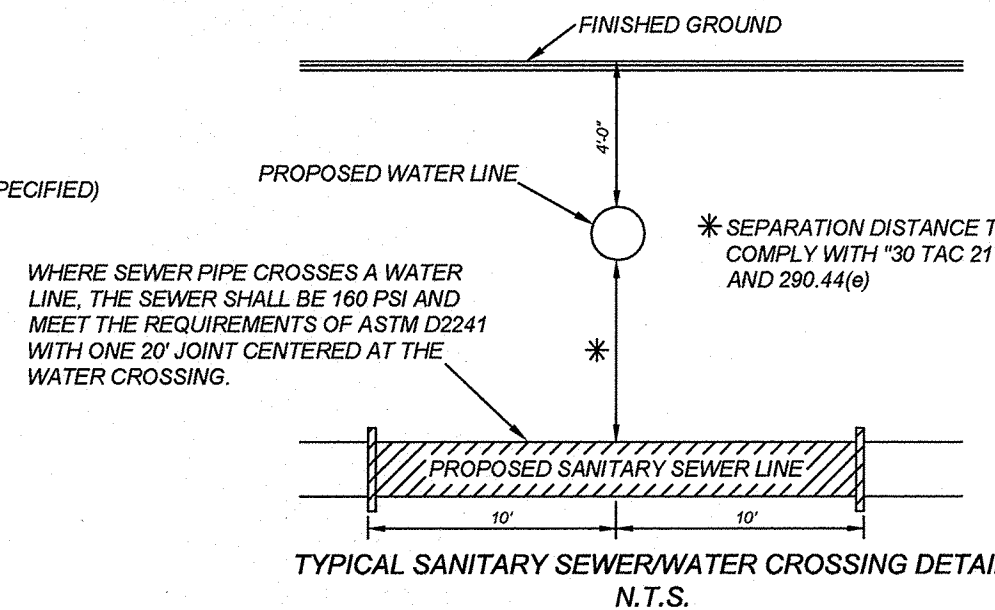
**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

- NOTE:
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
  2. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
  3. SEE THIS SHEET FOR BENCHMARK INFORMATION.
  4. PIPE TYPE DESIGNATIONS ARE SDR 26.
  5. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
  6. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASMENT AND A WATER TIGHT RING AND COVER.

**REFERENCE S.A.W.S. DETAILS**

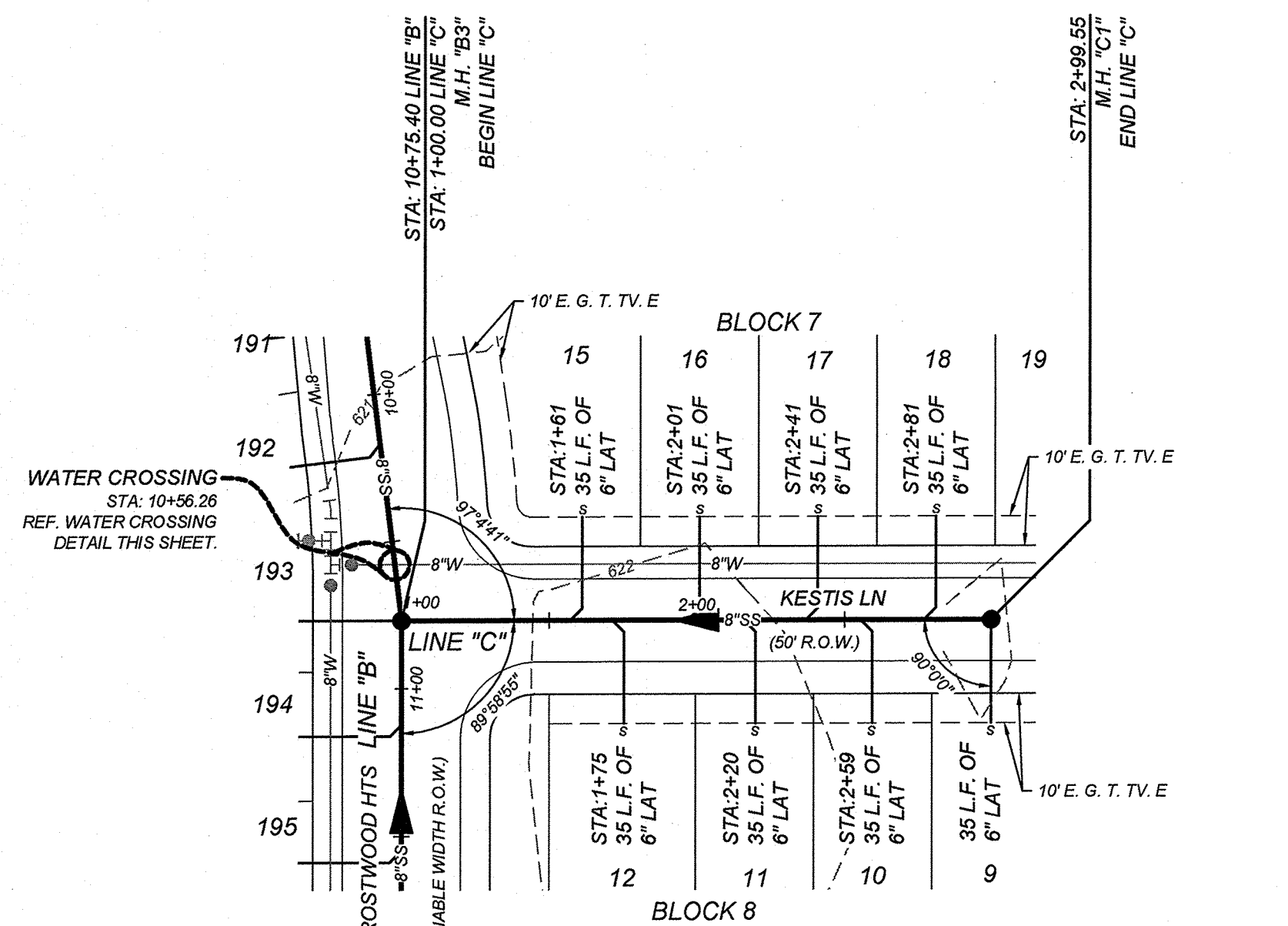
DD-804-01 SANITARY SEWER PIPE Laid IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-848-01 GO, NO GO DEFLECTION TESTING MANHOLE  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL



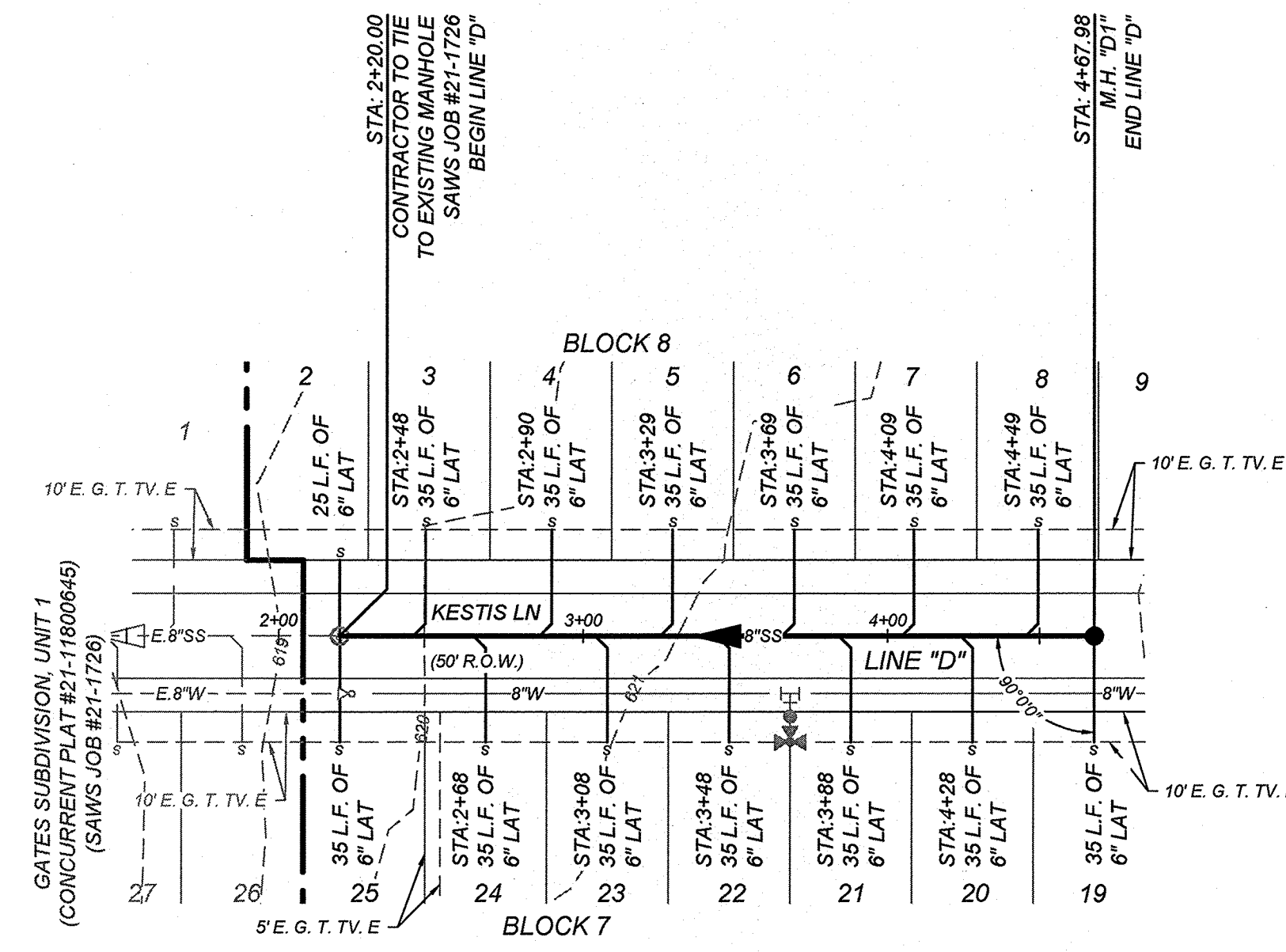
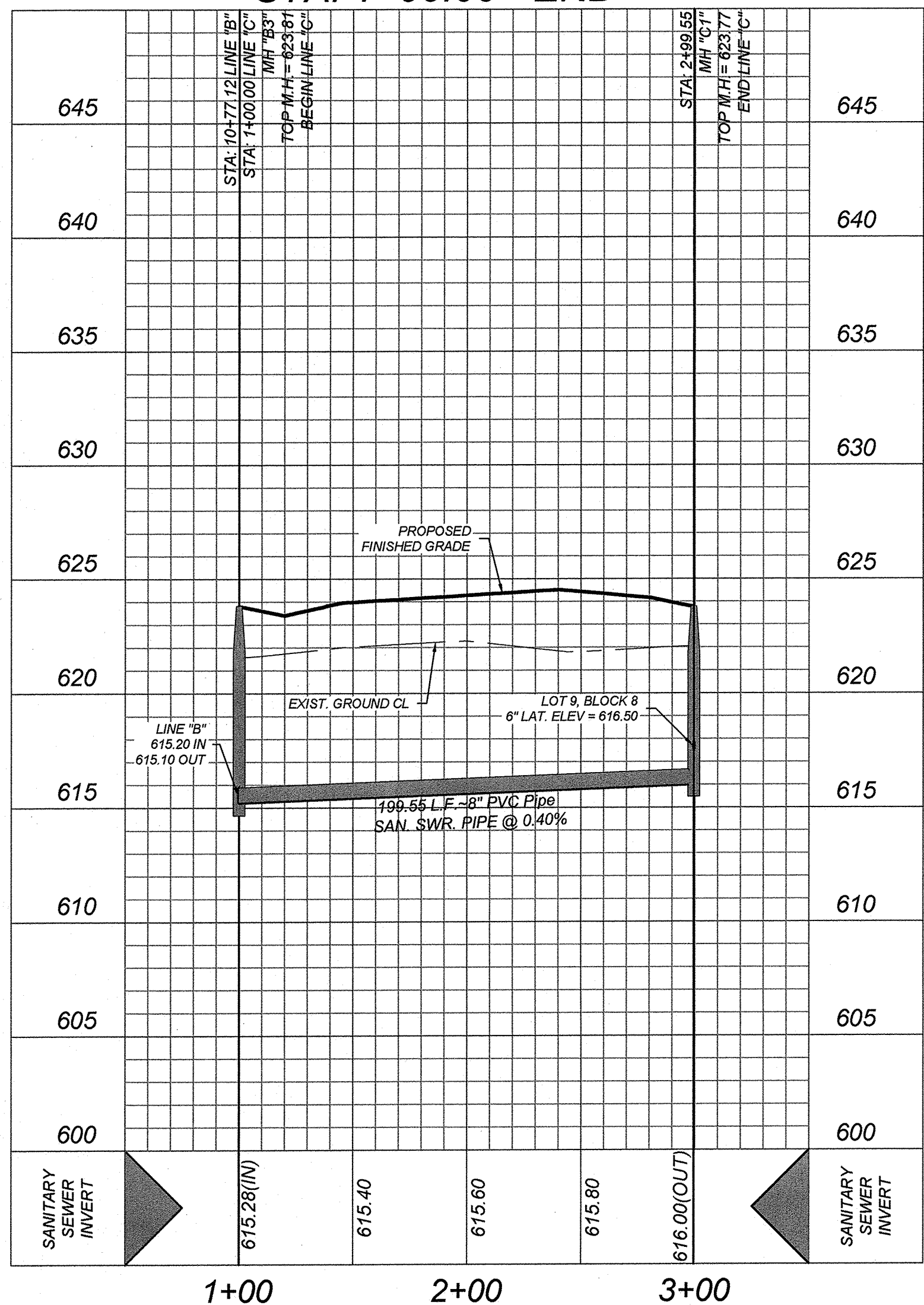
**CAUTION:** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

**MANHOLE NOTE:**  
ALL MANHOLES MUST BE WATER TIGHT, WITH WATER TIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

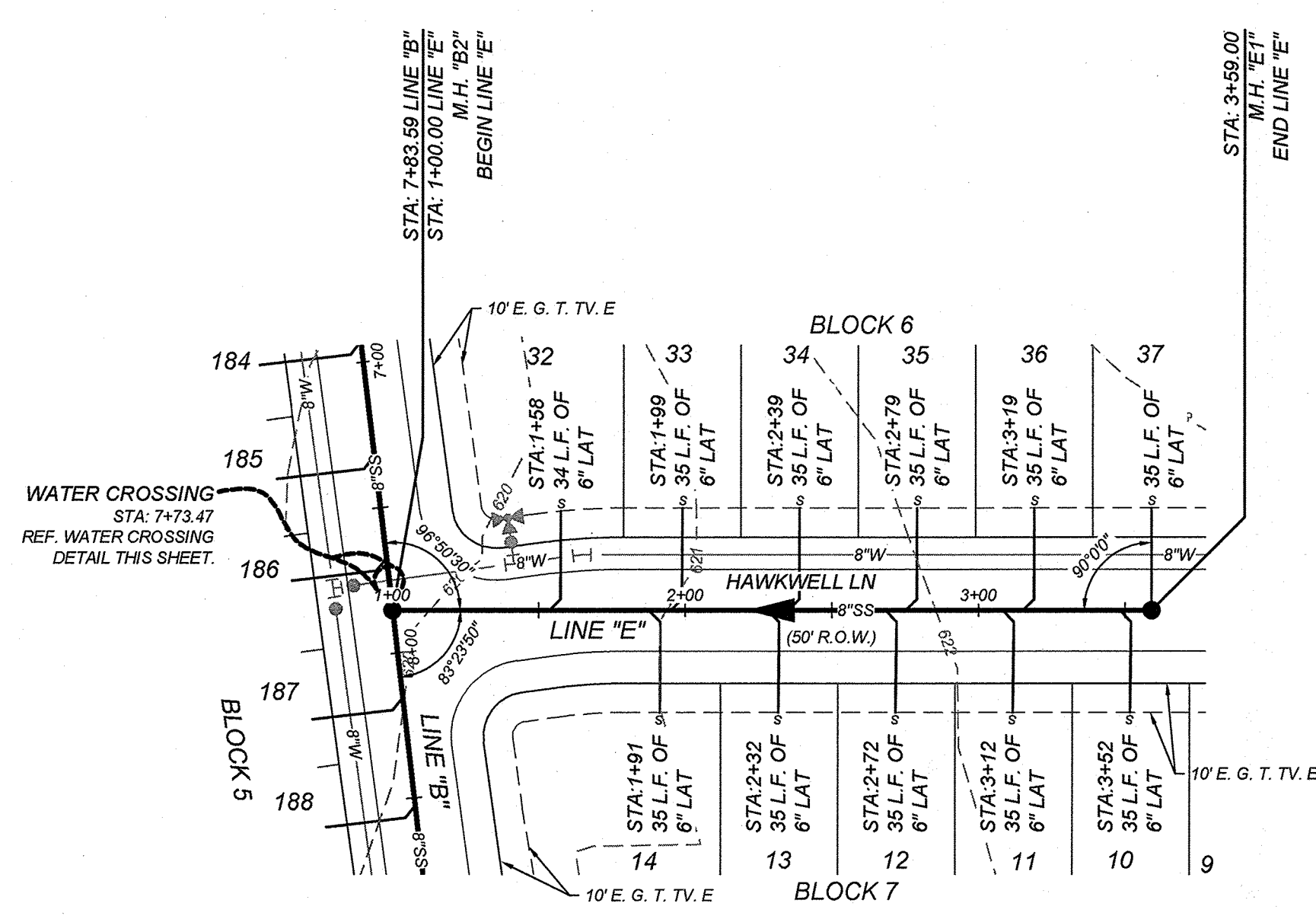
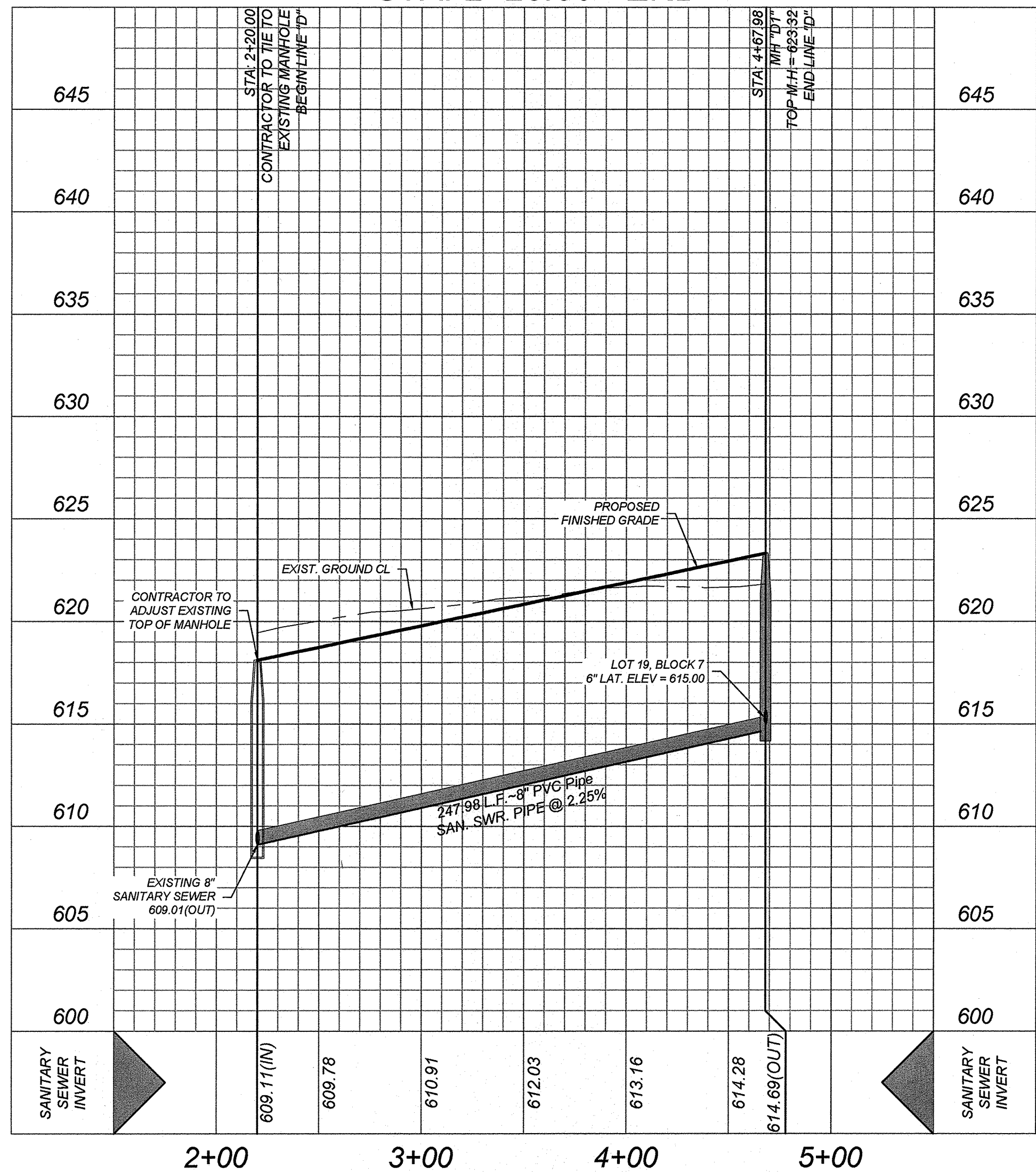
DEVELOPER'S NAME: MEH HOLDING COMPANY LTD  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD. BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE: FAX: TOTAL ACRES: 22.29 AC.  
SAWS BLOCK MAP#: 216562, 216560, 214580 TOTAL EDU'S: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. - 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547



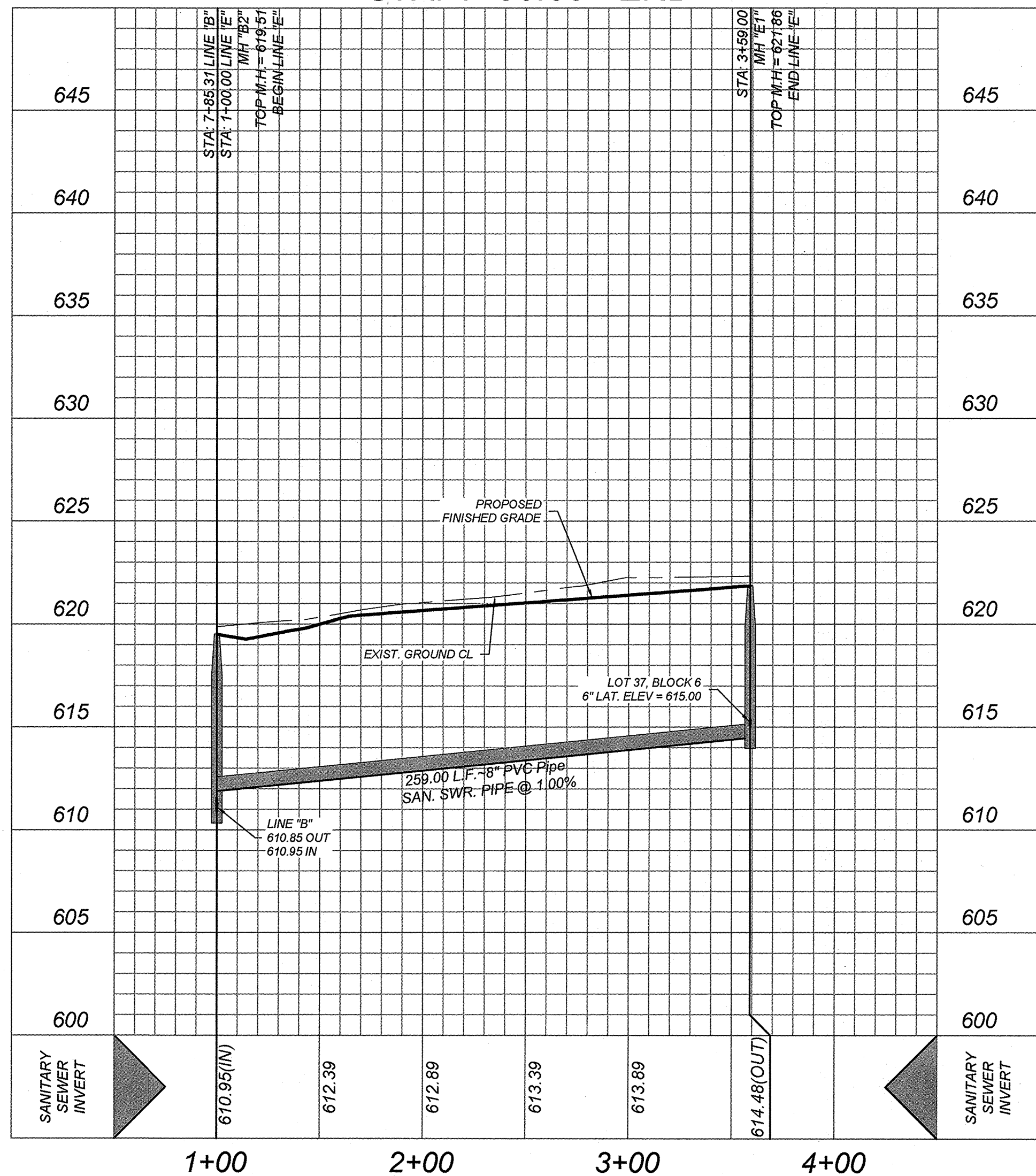
**LINE "C"**  
STA: 1+00.00 - END  
HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



**LINE "D"**  
STA: 2+20.00 - END  
HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



**LINE "E"**  
STA: 1+00.00 - END  
HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'





**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SURVEYING CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

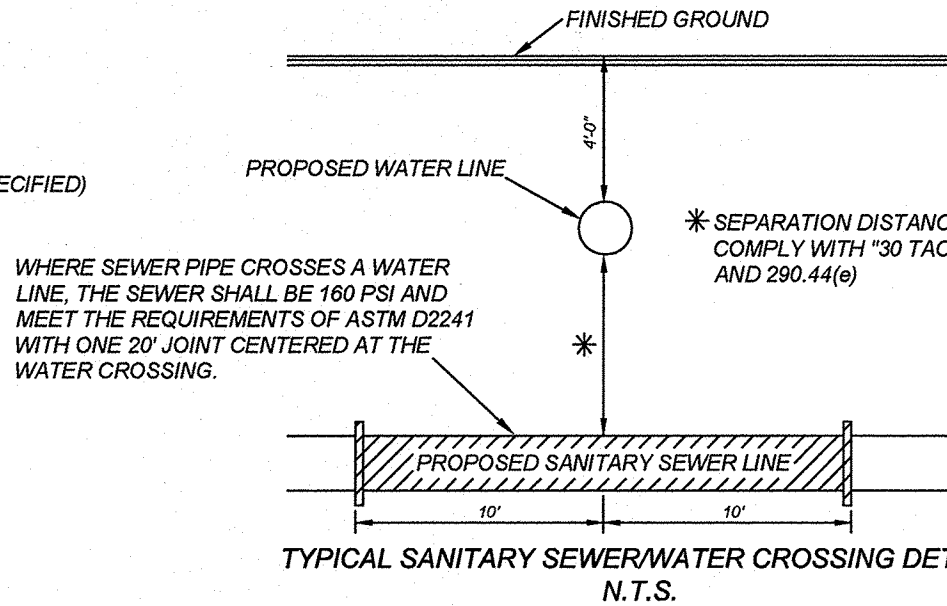
**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

NOTE:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.
2. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
3. SEE THIS SHEET FOR BENCHMARK INFORMATION.
4. PIPE TYPE DESIGNATIONS ARE SDR 26.
5. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
6. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER.

**REFERENCE S.A.W.S. DETAILS**

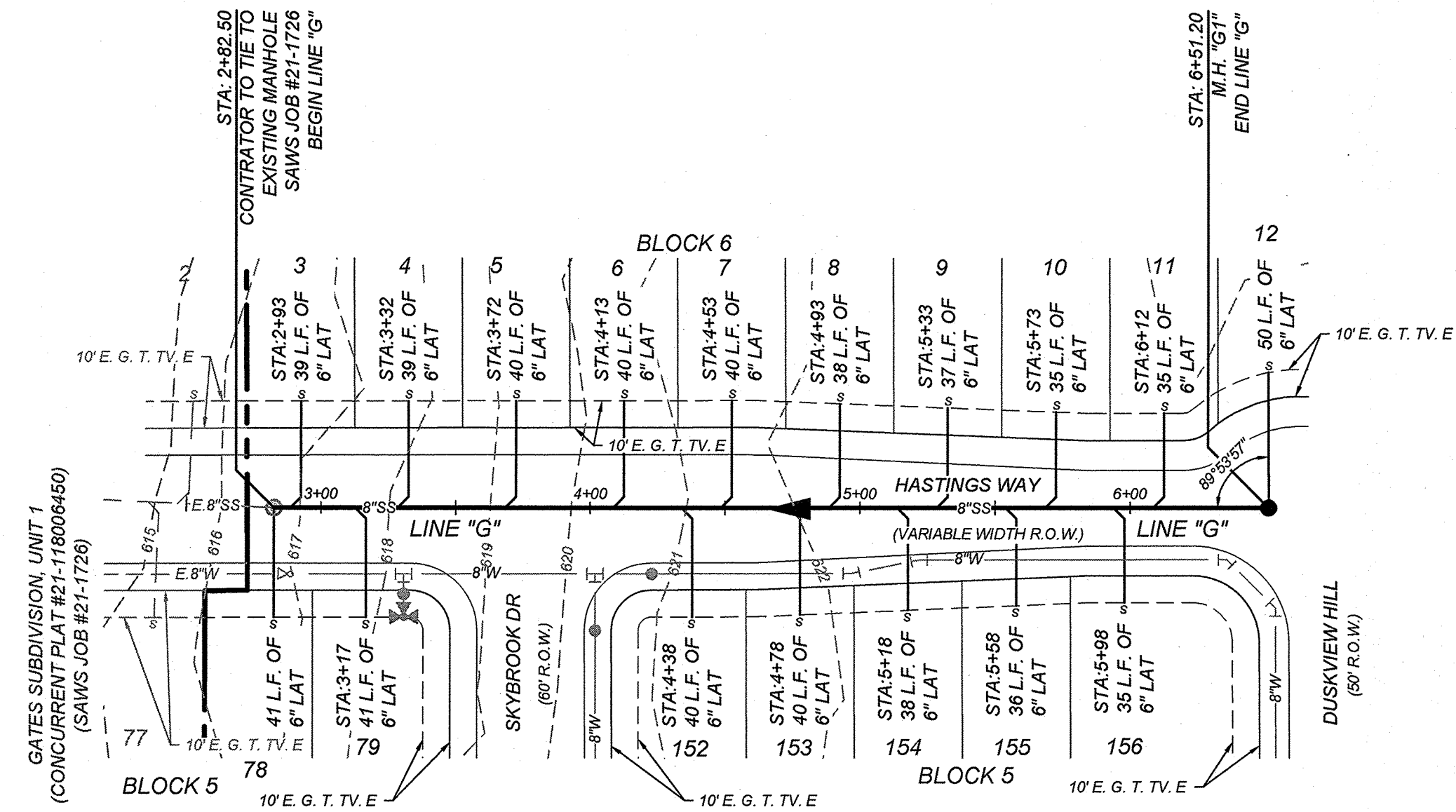
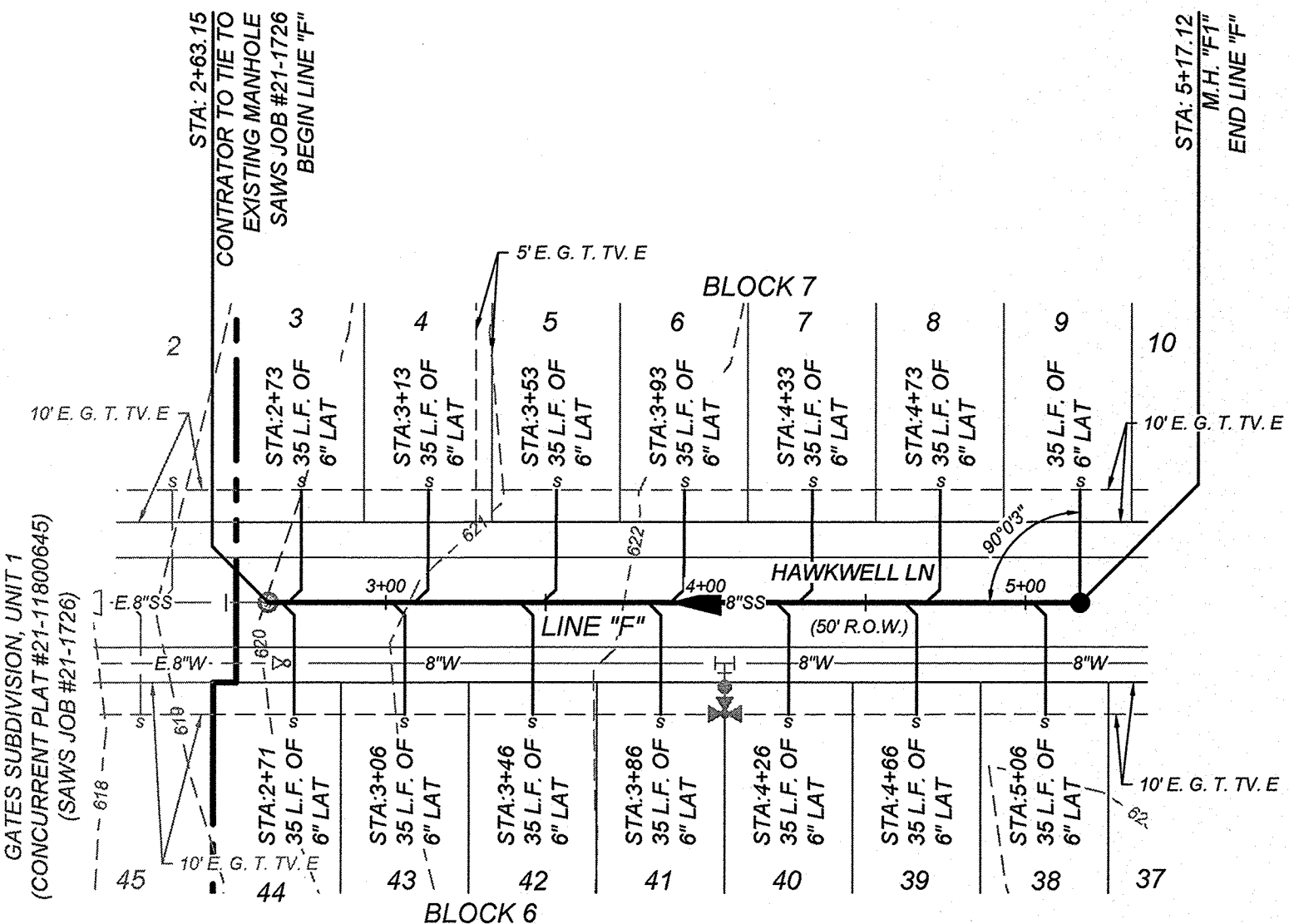
DD-804-01 SANITARY SEWER PIPE Laid IN TRENCH  
DD-804-02 TRENCH COMPACTION DETAIL  
DD-849-01 GO, NO GO DEFLECTION TESTING MANDREL  
DD-852-01 STANDARD PRECAST MANHOLE  
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)  
DD-852-03 MANHOLE RING ENCASEMENT DETAIL  
DD-854-ER2D HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)  
DD-858-01 TYPICAL CONCRETE ENCASEMENT DETAILS  
DD-858-02 TYPICAL CONCRETE DETAILS  
DD-860-01 TYPICAL VERTICAL STACK DETAILS  
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE  
DD-852-08 DROP MANHOLE DETAIL  
DD-852-07 MANHOLE RING AND COVER DETAIL



**CAUTION:** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-JUST-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

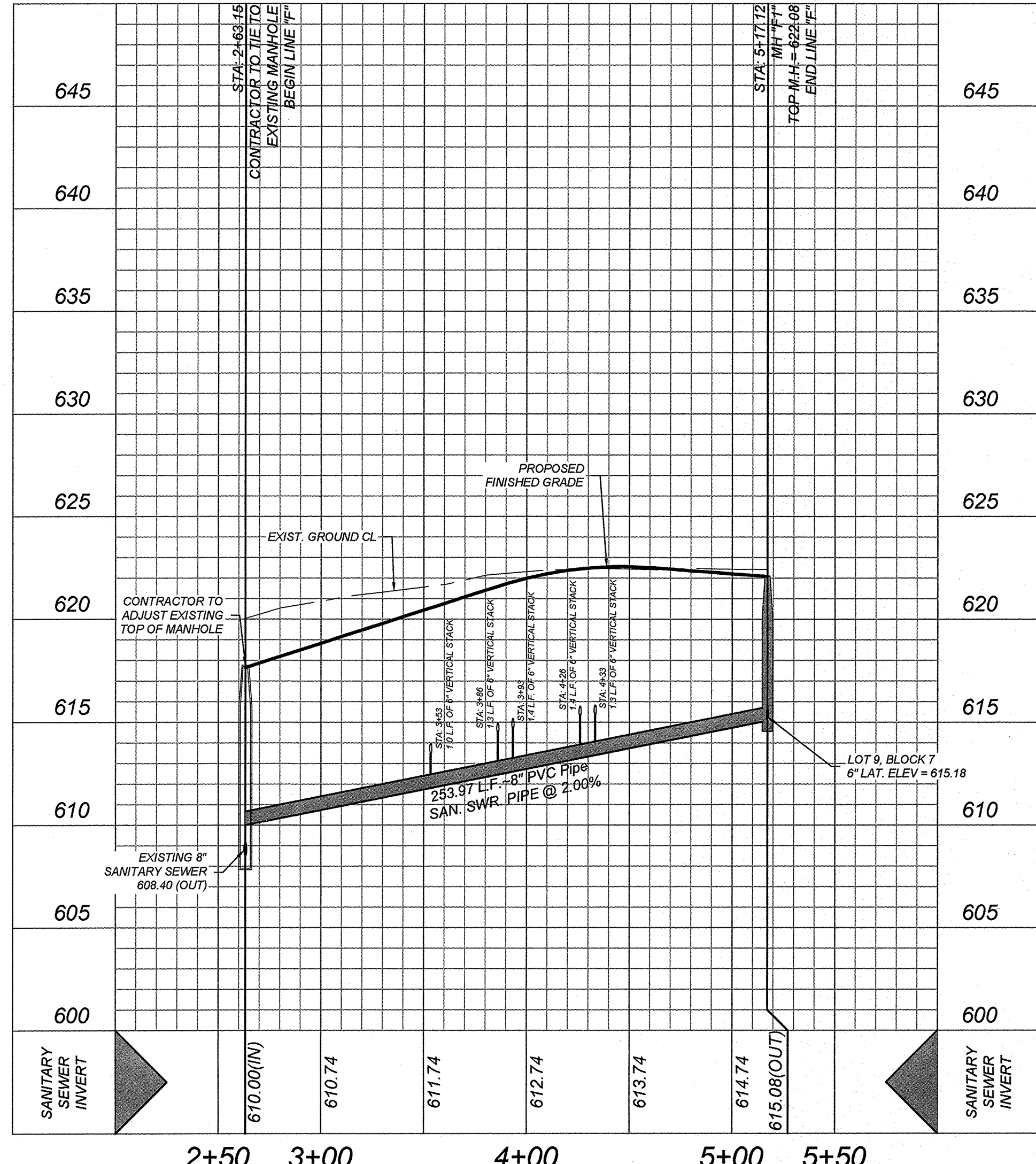
**MANHOLE NOTE:**  
ALL MANHOLES MUST BE WATER TIGHT, WITH WATER TIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

DEVELOPER'S NAME: MEH HOLDING COMPANY LTD.  
DEVELOPER'S ADDRESS: 1202 W. BITTERS RD. BUILDING 1, SUITE 1200  
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78258  
PHONE: FAX: TOTAL ACREAGE: 22.29 AC.  
SAWS BLOCK MAP#: 216562, 216560, 214580 TOTAL EDU'S: 123  
TOTAL LINEAR FOOTAGE OF PIPE: 3,636 L.F. - 8" SDR 26 PLAT NO.: 22-11800017  
NUMBER OF LOTS: 123 SAWS JOB#: 22-1547



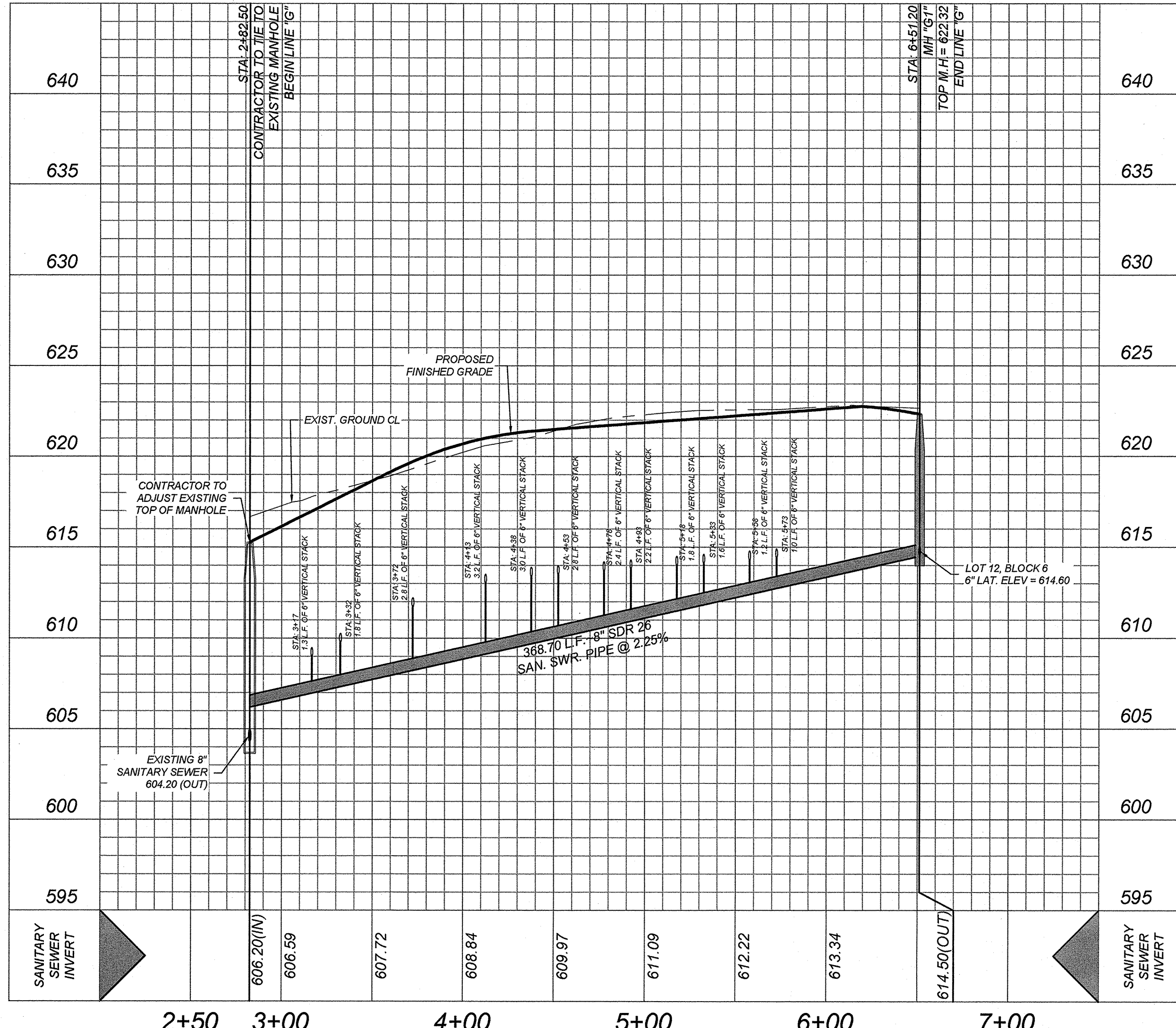
**LINE "F"**  
STA: 2+63.15 - END

HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



**LINE "G"**  
STA: 2+82.50 - END

HORZ SCALE: 1"=50'  
VERT SCALE: 1"=5'



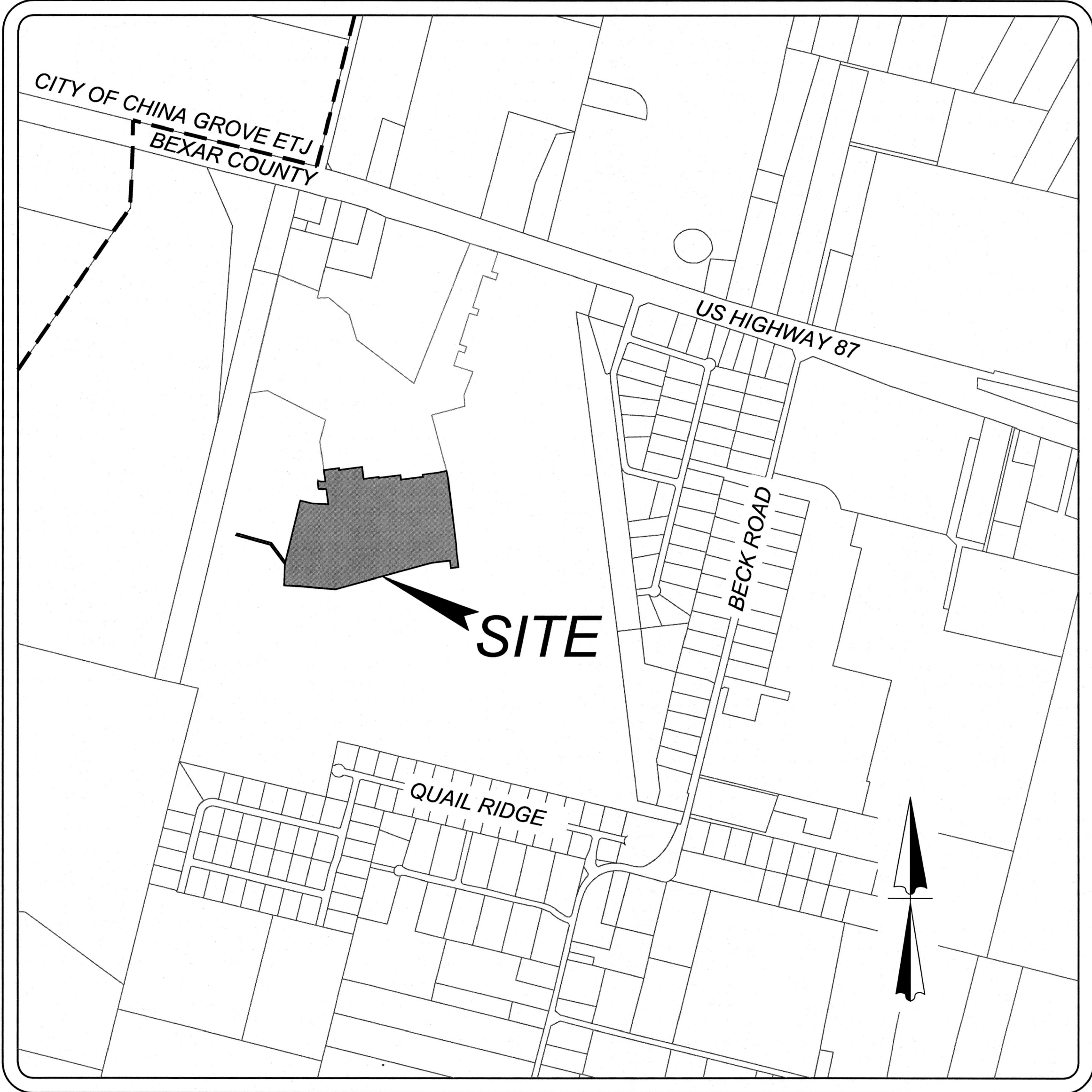
**GATES SUBDIVISION UNIT 2**  
BEXAR COUNTY, TX

**LINE "C", "D", & "E" PLAN & PROFILE**

PLAT NO. 22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:



GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
WATER IMPROVEMENTS



| SHEET LIST TABLE                          |              |
|-------------------------------------------|--------------|
| DESCRIPTION                               | SHEET NUMBER |
| WATER DISTRIBUTION COVER SHEET            | 7.0          |
| WATER DISTRIBUTION PLAN (SHEET 1 OF 2)    | 7.1          |
| WATER DISTRIBUTION PLAN (SHEET 2 OF 2)    | 7.2          |
| WATER DISTRIBUTION DETAILS (SHEET 1 OF 5) | 7.3          |
| WATER DISTRIBUTION DETAILS (SHEET 2 OF 5) | 7.4          |
| WATER DISTRIBUTION DETAILS (SHEET 3 OF 5) | 7.5          |
| WATER DISTRIBUTION DETAILS (SHEET 4 OF 5) | 7.6          |
| WATER DISTRIBUTION DETAILS (SHEET 5 OF 5) | 7.7          |

LOCATION MAP  
NOT-TO-SCALE

OWNER INFORMATION  
MEH HOLDING COMPANY LTD  
5210 THOUSAND OAKS, SUITE 1318  
SAN ANTONIO, TX 78233

| SHEET REVISION LOG |           |              |             |
|--------------------|-----------|--------------|-------------|
| DATE               | SHEET NO. | REVISION NO. | DESCRIPTION |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |
|                    |           |              |             |



**KFW**  
ENGINEERS + SURVEYING  
has joined Colliers Engineering & Design  
3421 Paessanos Pkwy., Suite 200, San Antonio, TX 78231  
Phone #: (210) 979-8444 • Fax #: (210) 979-8441  
TBPE Firm #: 9513 • TBPLS Firm #: 10122300



**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTORS' TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAL FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

**JOINT RESTRAINT NOTE:**  
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

CONTRACTOR TO REMOVE EXISTING 2" END BLOWOFF AND TIE NEW 8" PVC PIPE TO EXISTING 8" PVC AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (SAWS JOB #19-1675)

INSTALL FOR CHLORINATION INJECTION  
2 - 1" CORP. STOP C.C. x I.P.  
2 - 1" COMP. x 1 1/2" CRL CURB STOP  
2 - 1 1/2" SOLID CAP, THD.  
2 - 1" COPPER TUBING, CUT AS REQUIRED  
1 - 2" BLOWOFF (TEMP.)

1 - 8" x 6" ANCHOR TEE, M.J.  
1 - 6" GATE VALVE, M.J.  
1 - 6" VALVE BOX, COMPLETE  
1 - 6" ANCHOR BEND, M.J.  
1 - STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

OFF-LOT 60' x 60' ELEC. GAS, TELE. CATV, WATER  
SANITARY SEWER & DRAINAGE EASEMENT  
(ENTIRE EASEMENT TO EXPIRE UPON  
INCORPORATION INTO PLATTED STREET R.O.W.)

1 - 8" x 2" ECCENTRIC REDUCER, M.J.  
1 - 2" BLOWOFF (PERM)

1 - 8" x 6" ANCHOR TEE, M.J.  
1 - 6" GATE VALVE, M.J.  
1 - 6" VALVE BOX, COMPLETE  
1 - 6" ANCHOR BEND, M.J.  
1 - STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

1 - 8" x 6" ANCHOR TEE, M.J.  
1 - 6" GATE VALVE, M.J.  
1 - 6" VALVE BOX, COMPLETE  
1 - 6" ANCHOR BEND, M.J.  
1 - STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

1 - 8" x 6" ANCHOR TEE, M.J.  
1 - 6" GATE VALVE, M.J.  
1 - 6" VALVE BOX, COMPLETE  
1 - 6" ANCHOR BEND, M.J.  
1 - STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

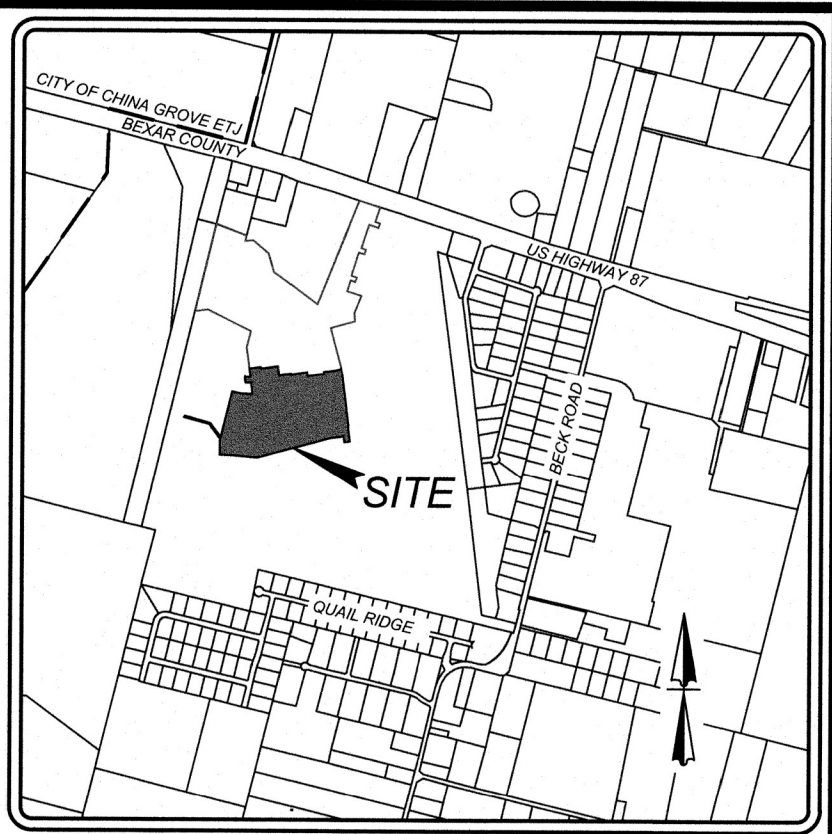
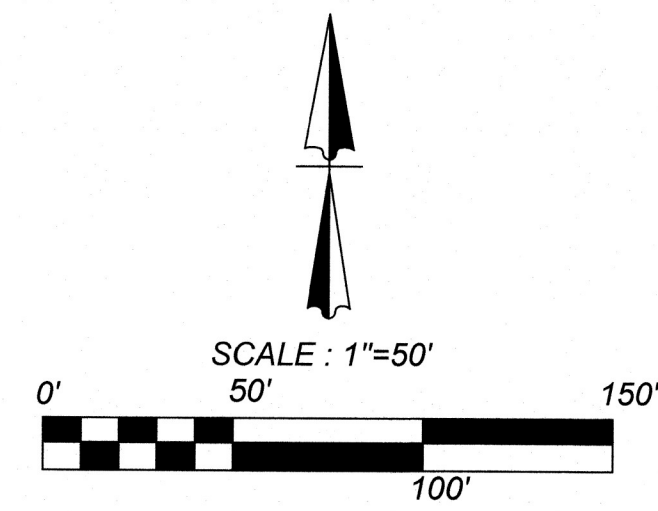
OFF-LOT 16' SANITARY  
SEWER EASEMENT

SANITARY SEWER CROSSINGS  
SEE THIS SHEET FOR DETAIL

DRAIN "B"

DRAIN "A"

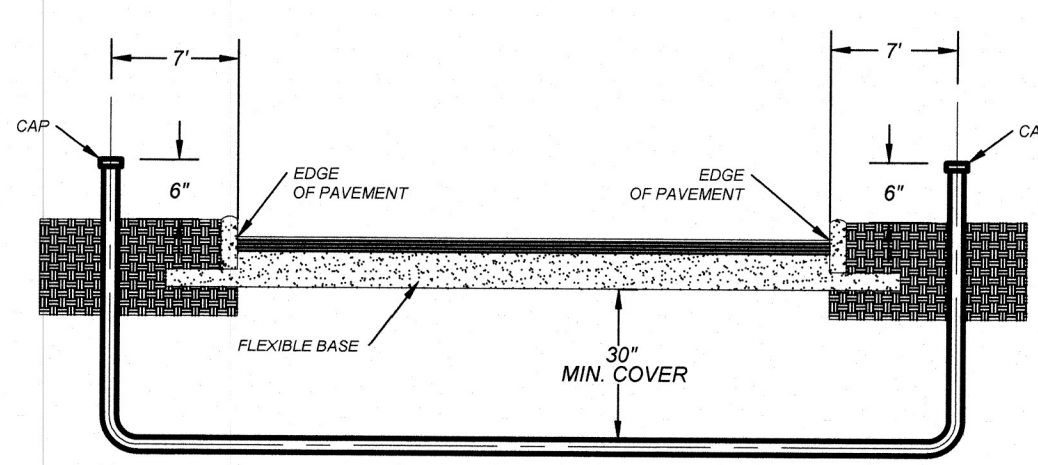
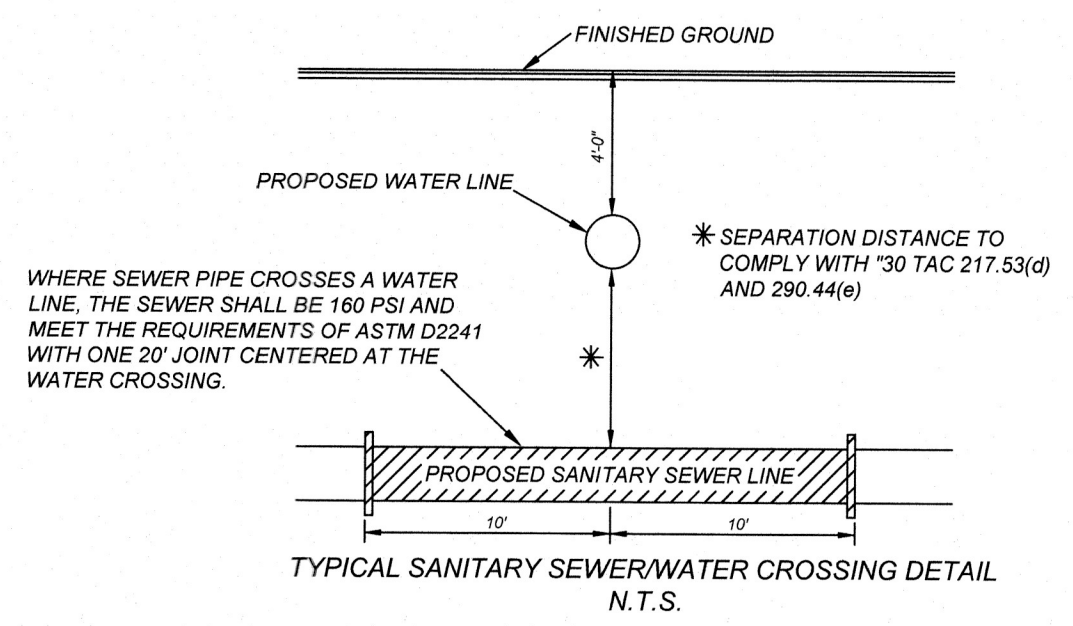
UNPLATTED REMAINING  
PORTION OF 257.33 ACRES  
(DOC #20190051458 O.P.R.)  
OWNER: MEH HOLDING  
COMPANY LTD



LOCATION MAP  
NOT-TO-SCALE

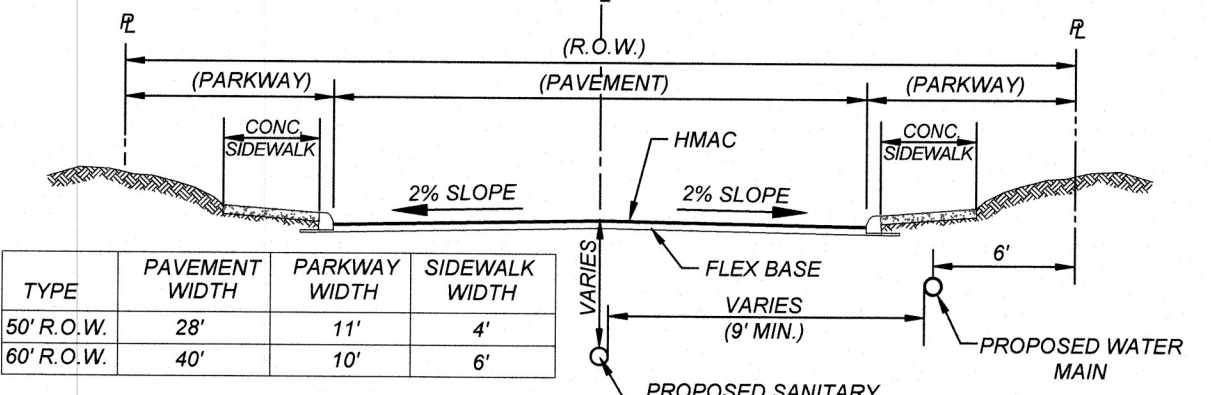
LEGEND

- PROPOSED WATER MAIN = W
- PROPOSED WATER SERVICE & METER BOX =
- PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX =
- PROPOSED FIRE HYDRANT =
- PROPOSED WATER VALVE =
- PROPOSED SANITARY SEWER MAIN = SS
- PROPOSED SANITARY SEWER MANHOLE =
- PROPOSED ELECTRIC, GAS, TELE. & CABLE TV EASEMENT = E, G, T, & TV ESM/T
- EXISTING WATER MAIN = E-W
- EXISTING FIRE HYDRANT =
- EXISTING WATER VALVE =
- EXISTING SANITARY SEWER MAIN =
- EXISTING SANITARY SEWER MANHOLE =
- EXISTING OVERHEAD ELECTRIC W/POWER POLE = OHE
- EXISTING GUY WIRE/OVERHEAD ELECTRIC =



TYPICAL CONDUIT DETAIL  
NOT-TO-SCALE

NOTE:  
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPSS FACILITY AT ALL STREETS AND DRAIN CROSSING. P-BUILT AHEAD OF CPSS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPSS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.



TYPICAL STREET SECTION  
N.T.S.

WATER PLAN NOTES:

- ALL VALVES SHALL READ "OPEN RIGHT"
- ALL PVC PIPE TO BE C-900 CLASS 235 (DR 18)

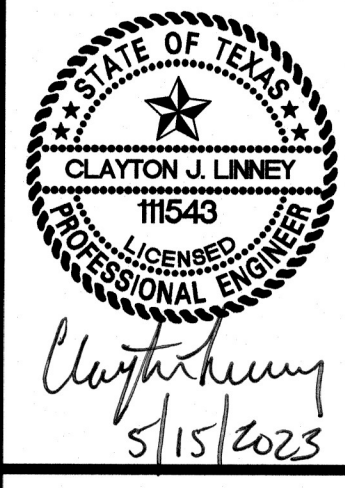
FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1,500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

**CAUTION!!** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX

WATER DISTRIBUTION PLAN (SHEET 1 OF 2)



PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM  
CHECKED: CL  
SHEET NUMBER:



**TRENCH EXCAVATION SAFETY PROTECTION**  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL, INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**COMPACTION NOTE:**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

**JOINT RESTRAINT NOTE:**  
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

CONTRACTOR TO REMOVE EXISTING 2" END BLOWOFF AND TIE NEW 8" PVC PIPE TO EXISTING 8" PVC AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (SAWS JOB #21-0000)

INSTALL FOR CHLORINATION INJECTION  
2- 1" CORP. STOP C.C. x I.P.  
2- 1" COMP. x 1 1/2" CPL CURB STOP  
2- 1 1/2" SOLID CAP, THD.  
2- 1" COPPER TUBING, CUT AS REQUIRED  
1- 2" BLOWOFF (TEMP.)

CONTRACTOR TO REMOVE EXISTING 2" END BLOWOFF AND TIE NEW 12" PVC PIPE TO EXISTING 12" PVC AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (SAWS JOB #21-0000)

INSTALL FOR CHLORINATION INJECTION  
2- 1" CORP. STOP C.C. x I.P.  
2- 1" COMP. x 1 1/2" CPL CURB STOP  
2- 1 1/2" SOLID CAP, THD.  
2- 1" COPPER TUBING, CUT AS REQUIRED  
1- 2" BLOWOFF (TEMP.)

CONTRACTOR TO REMOVE EXISTING 2" END BLOWOFF AND TIE NEW 8" PVC PIPE TO EXISTING 8" PVC AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (SAWS JOB #21-0000)

INSTALL FOR CHLORINATION INJECTION  
2- 1" CORP. STOP C.C. x I.P.  
2- 1" COMP. x 1 1/2" CPL CURB STOP  
2- 1 1/2" SOLID CAP, THD.  
2- 1" COPPER TUBING, CUT AS REQUIRED  
1- 2" BLOWOFF (TEMP.)

MATCH LINE "A-A" SEE SHEET 7.1

1- 8" x 6" ANCHOR TEE, M.J.  
1- 6" GATE VALVE, M.J.  
1- 6" VALVE BOX, COMPLETE  
1- 6" ANCHOR BEND, M.J.  
1- STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

1- 8" x 6" ANCHOR TEE, M.J.  
1- 6" GATE VALVE, M.J.  
1- 6" VALVE BOX, COMPLETE  
1- 6" ANCHOR BEND, M.J.  
1- STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

1- 12" x 6" ANCHOR TEE, M.J.  
1- 6" GATE VALVE, M.J.  
1- 6" VALVE BOX, COMPLETE  
1- 6" ANCHOR BEND, M.J.  
1- STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

UNPLATTED REMAINING PORTION OF 257.33 ACRES (DOC #20190051458 O.P.R.) OWNER: MEH HOLDING COMPANY LTD

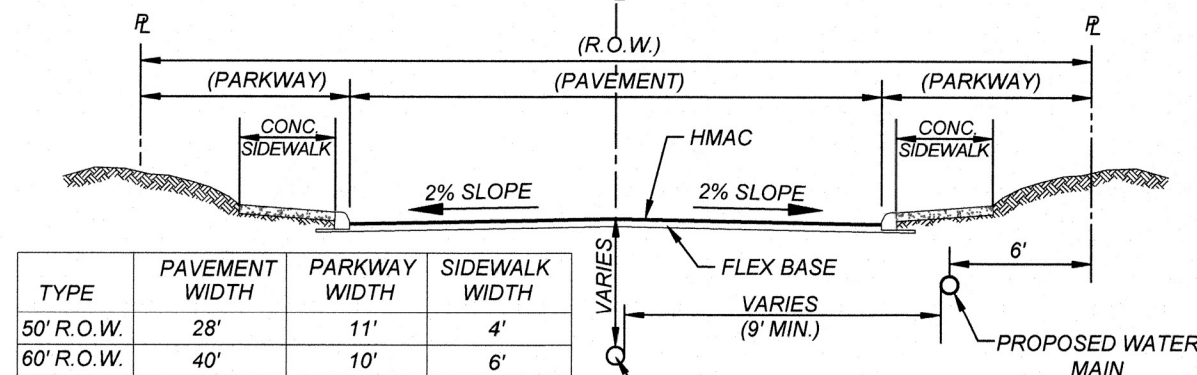
1- 12" x 8" ANCHOR TEE, M.J.  
1- 12" GATE VALVE, M.J.  
1- 8" GATE VALVE, M.J.  
2- 6" VALVE BOX, COMPLETE

1- 12" x 12" ANCHOR TEE, M.J.  
1- 12" GATE VALVE, M.J.  
1- 8" GATE VALVE, M.J.  
2- 6" VALVE BOX, COMPLETE

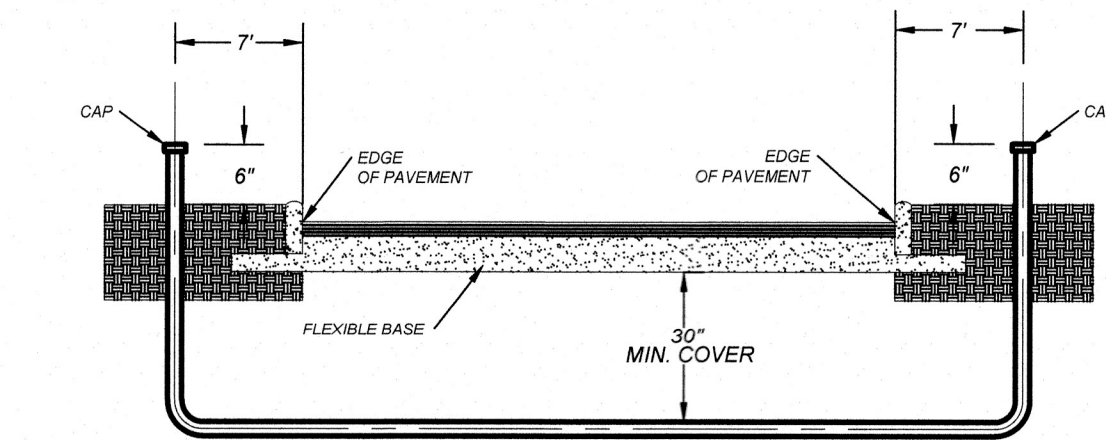
1- 12" x 2" ECCENTRIC REDUCER, M.J.  
1- 2" BLOWOFF (PERM)

1- 8" x 6" ANCHOR TEE, M.J.  
1- 6" GATE VALVE, M.J.  
1- 6" VALVE BOX, COMPLETE  
1- 6" ANCHOR BEND, M.J.  
1- STANDARD FIRE HYDRANT  
6" DI PIPE, CUT AS REQUIRED

OFF-LOT 60' x 60' ELEC. GAS, TELE, CATV, WATER, SANITARY SEWER & DRAINAGE EASEMENT. (ENTIRE EASEMENT) TO EXPIRE UPON INCORPORATION INTO PLATTED STREET R.O.W.



TYPICAL STREET SECTION  
N.T.S.



TYPICAL CONDUIT DETAIL  
NOT-TO-SCALE

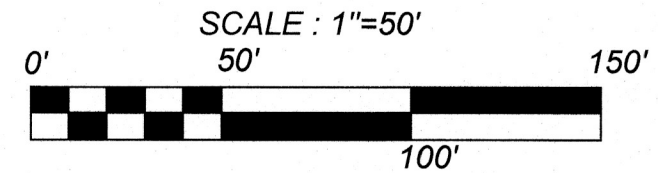
**WATER PLAN NOTES:**

1. ALL VALVES SHALL READ "OPEN RIGHT"
2. ALL PVC PIPE TO BE C-900 CLASS 235 (DR 18)

**FIRE FLOW NOTE:**

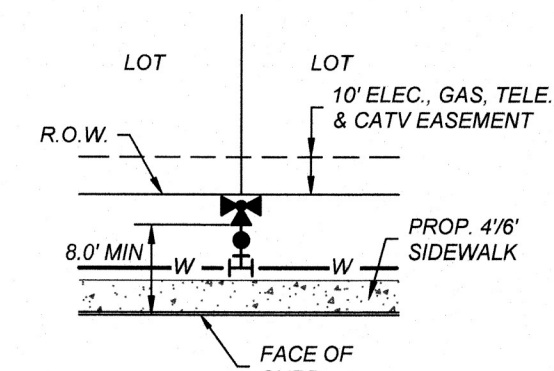
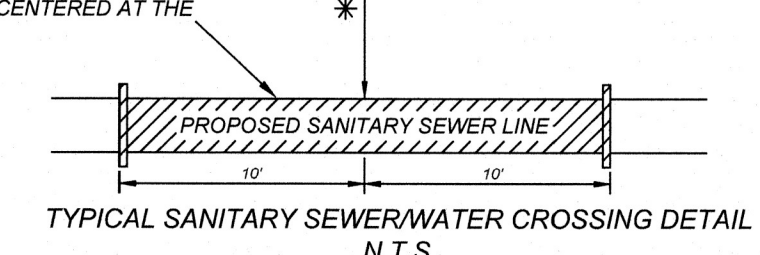
IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1,500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

**CAUTION!!** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

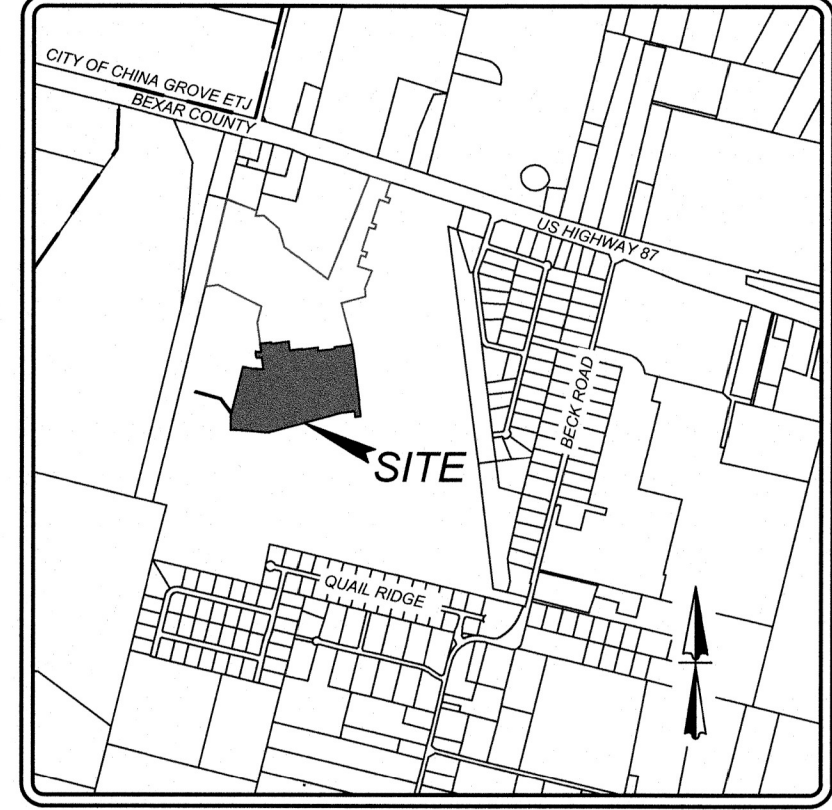


FINISHED GROUND

WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 180 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING.



TYPICAL FIRE HYDRANT DETAIL  
NOT-TO-SCALE



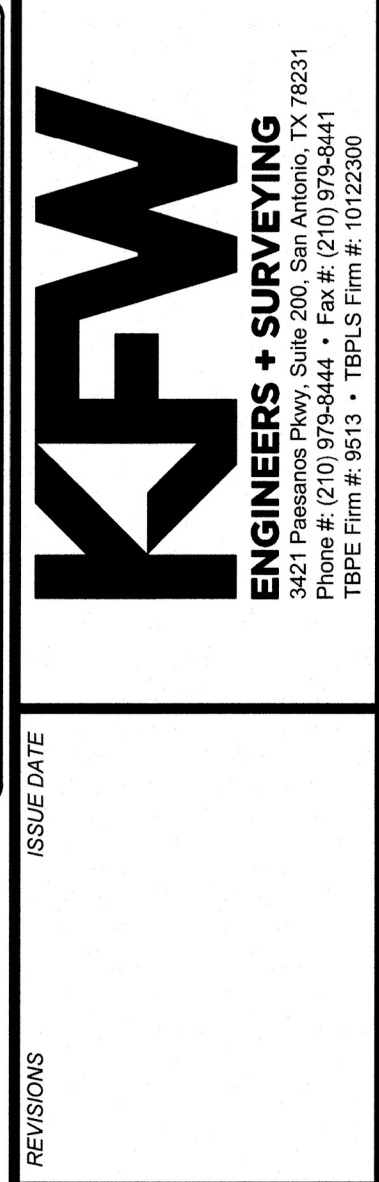
LOCATION MAP  
NOT-TO-SCALE

**LEGEND**

- PROPOSED WATER MAIN = W
- PROPOSED WATER SERVICE & METER BOX =
- PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX =
- PROPOSED FIRE HYDRANT =
- PROPOSED WATER VALVE =
- PROPOSED 100W STREETLIGHT =
- PROPOSED SANITARY SEWER MAIN = SS
- PROPOSED SANITARY SEWER MANHOLE =
- PROPOSED SANITARY SEWER LATERAL =
- PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT = E, G, T, V, E
- EXISTING WATER MAIN = E-W
- EXISTING FIRE HYDRANT =
- EXISTING WATER VALVE =
- EXISTING SANITARY SEWER MAIN = E-SS
- EXISTING SANITARY SEWER MANHOLE =
- EXISTING OVERHEAD ELECTRIC WIRE/POLE = -OHE-
- EXISTING GUY WIRE/OVERHEAD ELECTRIC = -OHE-

**GATES SUBDIVISION UNIT 2**  
BEXAR COUNTY, TX

**WATER DISTRIBUTION PLAN (SHEET 2 OF 2)**



ISSUE DATE: 5/15/2023

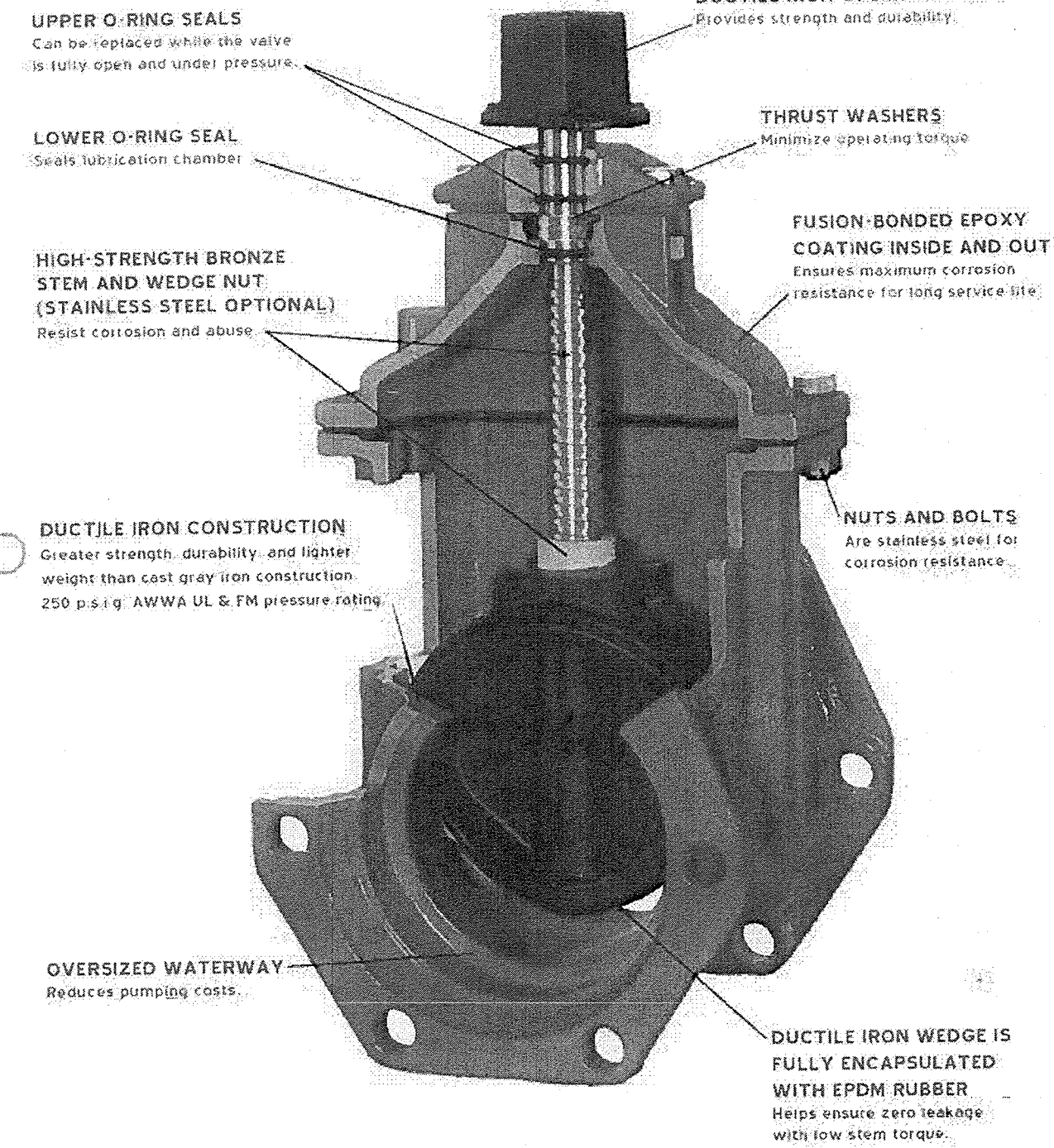
PLAT NO. 22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN/OM CHECKED/CL  
SHEET NUMBER:





## 2" - 12" SERIES 2500 RESILIENT WEDGE GATE VALVE

### CONSTRUCTION



THE RIGHT WAY

## 2" - 12" SERIES 2500 RESILIENT WEDGE GATE VALVE

### FEATURES/SPECIFICATIONS

#### FEATURES

The AMERICAN Series 2500 Ductile Iron 250 p.s.i.g. AWWA Resilient Wedge Gate Valve is designed for use in drinking water, sewage and fire protection systems as well as irrigation and backflow control systems.

**Triple O-ring Stem Seals**  
Sealing the lubrication chamber is a series of three O-ring stem seals. The O-rings help to isolate the lubrication chamber.

**Thrust Washers**  
Two thrust washers are used. One is located above and one is located below the thrust collar. These thrust washers provide easy operation.

The Series 2500 Ductile Iron Resilient Wedge Gate Valve has these standard features:

- UL Listed-FM Approved
- Seat Tested at 375 p.s.i.g.
- Shell Tested at 500 p.s.i.g.
- 100% Leak-Tight Closure
- Fusion-Bonded Epoxy Coating Complies With ANSI/ASTM C550
- CL250W Raised Face Flanges Available
- 250 p.s.i.g. AWWA UL and FM Pressure Rating
- Fully Rubber-Encapsulated Wedge
- Triple O-ring Stem Seals
- Thrust Washers
- Smooth larger than nominal Waterway
- 4" and larger sizes Certified to NSF/ANSI standard 61
- Complies with AWWA C515
- Ductile Iron Body, Bonnet, Wedge, Operating Nut and Stuffing Box

#### SPECIFICATIONS

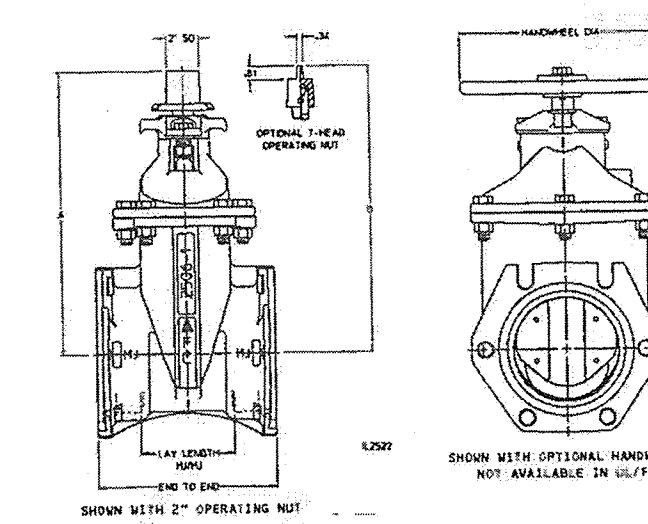
Valves 2" - 12" in size shall be of a resilient wedge design. The valve shall have a cold water rated working pressure of 250 p.s.i.g. All cast ferrous components shall be ductile iron and shall be manufactured in compliance with the latest edition of AWWA/ANSI C515. The valve shall also be Listed by Underwriters Laboratories, Incorporated, and Approved by Factory Mutual, in applicable configurations. The valve design shall be lightweight, easy to handle, and constructed with wall thickness per Table 2 of AWWA/ANSI C515. Heavy wall and/or cast gray iron bodies are not acceptable. The valve shall have a smooth and oversize waterway and have the marking "D.I." or "Ductile Iron" cast on onto the body. The valve

wedge shall be constructed of ductile iron and provided with protective wedge guide covers in sizes 4" - 12". All wedges 3" and smaller shall be constructed of bronze. All wedges shall be fully encapsulated with EPDM rubber. Valve stems shall be sealed by three O-rings. Two of the O-rings shall reside above the thrust collar. The O-rings shall be replaceable under full working pressure and with the valve in the full open position. O-rings set in a cartridge shall not be allowed. The valve shall also be equipped with thrust washers above and below the stem thrust collar for reduction of operating torque. All exterior valve body bolting shall be type 304 stainless steel and shall be provided with hexagonal heads, with dimensions conforming to ANSI B16.21. Metric size and/or socket head cap screws or bolts are not allowed. The operating nut shall be 2" square and shall be constructed of ductile iron fitted to a square tapered stem to help ensure even valve operating input torque. All body gaskets shall be of the pressure energized O-ring style design. All internal and external ferrous surfaces of the valve body and bonnet shall have a fusion-bonded epoxy coating, complying with AWWA/ANSI C550. The coating shall be electrostatically applied prior to assembly and shall be Certified to ANSI/NSF Standard 61. All valves shall be the AMERICAN Flow Control Series 2500 or 2500-1 Resilient Wedge Gate Valves.

## 2" - 12" SERIES 2500 RESILIENT WEDGE GATE VALVE

### DRAWING/DIMENSIONS

ES 2500 - STANDARD NPS DIMENSIONS  
2" - 12" SIZES



| QUANTITY                                                            |        |    |    |    |    |     |     |  |  |
|---------------------------------------------------------------------|--------|----|----|----|----|-----|-----|--|--|
| 2"                                                                  | 2-1/2" | 3" | 4" | 6" | 8" | 10" | 12" |  |  |
| <input type="checkbox"/> NPS with 2" Sq. Oper. Nut                  |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> NPS with T-Head Oper. Nut                  |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> NPS with Handwheel                         |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Post Indicator Valve (PIV)                 |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> CS & Y                                     |        |    |    |    |    |     |     |  |  |
| Actuals (Check One)                                                 |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> NPS with Enclosed Miter Gearing            |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> 2" Sq. Oper. Nut Parallel to Waterway      |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> 2" Sq. Oper. Nut Perpendicular to Waterway |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Handwheel Perpendicular to Waterway        |        |    |    |    |    |     |     |  |  |
| Order Direction:                                                    |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Left (C.C.W.)                              |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Right (C.C.W.)                             |        |    |    |    |    |     |     |  |  |
| Stem Material:                                                      |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Bronze (Standard)                          |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Stainless (Optional)                       |        |    |    |    |    |     |     |  |  |
| End Connections:                                                    |        |    |    |    |    |     |     |  |  |
| Mechanical Joint Accessories:                                       |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Yes                                        |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> No                                         |        |    |    |    |    |     |     |  |  |
| UL Listed FM Approved:                                              |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> Yes                                        |        |    |    |    |    |     |     |  |  |
| <input type="checkbox"/> No                                         |        |    |    |    |    |     |     |  |  |
| Other Requirements (List on a separate sheet)                       |        |    |    |    |    |     |     |  |  |



MUELLER® 2360 SERIES  
RESILIENT WEDGE GATE VALVE

Mueller Co.

10.1

Rev. 4-14

MUELLER 2360 Series Resilient Wedge Gate Valves

Mueller Resilient Wedge Gate Valves have features to make them easier to operate, preserve sealing capability, and interior coating integrity for many years of reliable service. In addition to popular and convenient options, Mueller travel RW valves can be ordered with Mueller's exclusive Aquadrip® System that incorporates an e-ring sealed compression connection and integral pipe restraint in one "ready to use" easy and quick to install package.

Mueller 4" - 12" 2361 Series Resilient Wedge Gate Valve Features

- 350 PSIG MAXIMUM WORKING PRESSURE - Hydrostatically tested at 700 psig.
- DUAL-PURPOSE LIFTING LUGS - new dual-purpose lifting lugs provide stability for the valve box. Accommodates strap or hook; provides valve box alignment, eliminating need for valve box adapter.
- "PRESSURE ASSIST" WEDGE GEOMETRY - unique "pressure assist" wedge geometry needs equal or less torque to seal at 350 psig than current valves require at 250 psi.
- AMERICAN MADE QUALITY - factory in Chattanooga, TN with ISO 9001 certification. Certified to ANSI/ASME B1.1. Manufactured and tested in compliance with ANSI/AWWA Standard C515, UL 202 Listed and FM 1120/1130 Approved.
- Valve body, bonnet, disc, stuffing box, and op nut - Ductile iron
- T-HEAD BOLT RETENTION - Improved T-head bolt retention feature eliminates need for anti-rotation bolts
- TRIPLE O-RING SEALS - two above thrust collar and one below, retain lubricant in this critical area. Top two are replaceable with valve fully open and under pressure. Fourth O-ring serves as dirt seal.
- TWO ANTI-FRICTION WASHERS WITH LUBRICATION - made of polymer, one above and one below the thrust collar, reduce operating torque to open or close valve.
- STEM - forged manganese bronze bar stock is upset, then machined to form a thrust collar for superior strength in this critical area.
- GUIDE CAP BEARINGS - made of polymer and snapped over rubber covered wedge guides, provide bearing surfaces that protect both wedge and interior body coating from wear and aid in easy operation - even the largest valves installed horizontally. Rollers, tracks or scrapers are not needed.
- SMOOTH, OVERSIZED FLOW WAY - full, round, unobstructed flow way accommodates full size culture, provides superior flow characteristics and reduces pumping costs.
- MUELLER PRO-GARD™ FUSION EPOXY COATING - 10 mils thick protects all inside and outside iron surfaces, and complies with AWWA C550.
- INTEGRAL LEGS - stands upright for easier handling and storage.
- 10-YEAR LIMITED WARRANTY - assured reliability (see separate Mueller Warranty document for terms).
- MUELLER VALVES ARE DESIGNED FOR POTABLE WATER APPLICATIONS.

\*Normal  
\*\*18" valve requires 1/2" undersized cutter, 54" valve requires 48" cutter

Mueller 14" - 54" 2361 Series Resilient Wedge Gate Valve Features

In addition to all the features of the smaller 2361 series valves, large size Mueller 2361 series RW valves offer these features:

STEM - 18"-54" manganese bronze casting with integral thrust collar.

| SIZE    | AWWA C515 WORKING PRESSURE | UL WORKING PRESSURE | FM WORKING PRESSURE |
|---------|----------------------------|---------------------|---------------------|
| 14"-18" | 250                        | 250                 | 250                 |
| 18"-24" | 250                        | 175*                | -                   |
| 30"-48" | 250                        | -                   | -                   |
| 54"     | 250†                       | -                   | -                   |

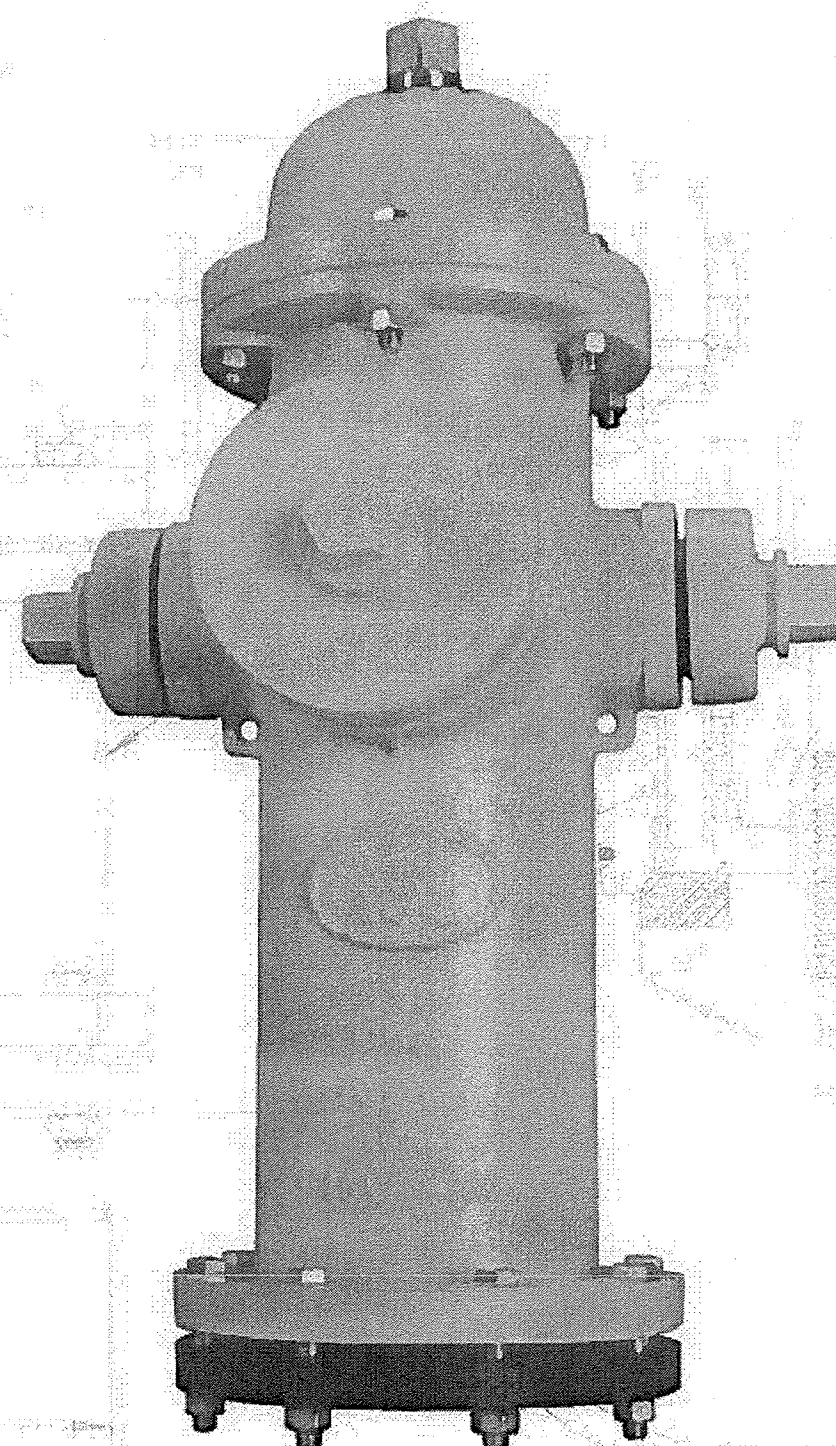
†AWWA C515 does not recognize valves larger than 48"  
\*UL Listed without gasket

Double-Dis. Style gate valves follow the RW valve pages.

AMERICAN  
FLOW CONTROL

AMERICAN-DARLING 5-1/4" B-84-B-5 FIRE HYDRANT

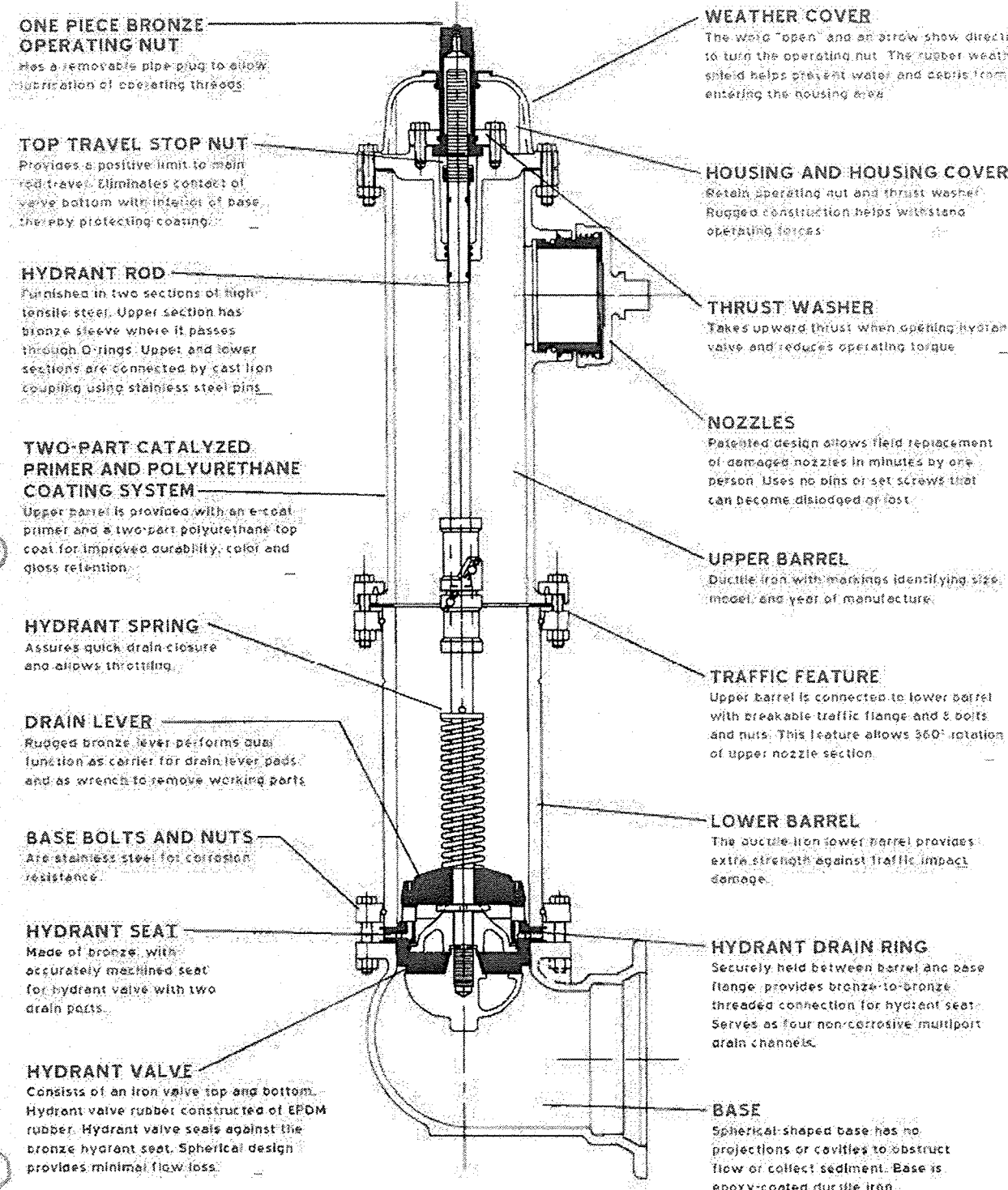
EC Specs



AMERICAN-DARLING 5-1/4" B-84-B-5 FIRE HYDRANT

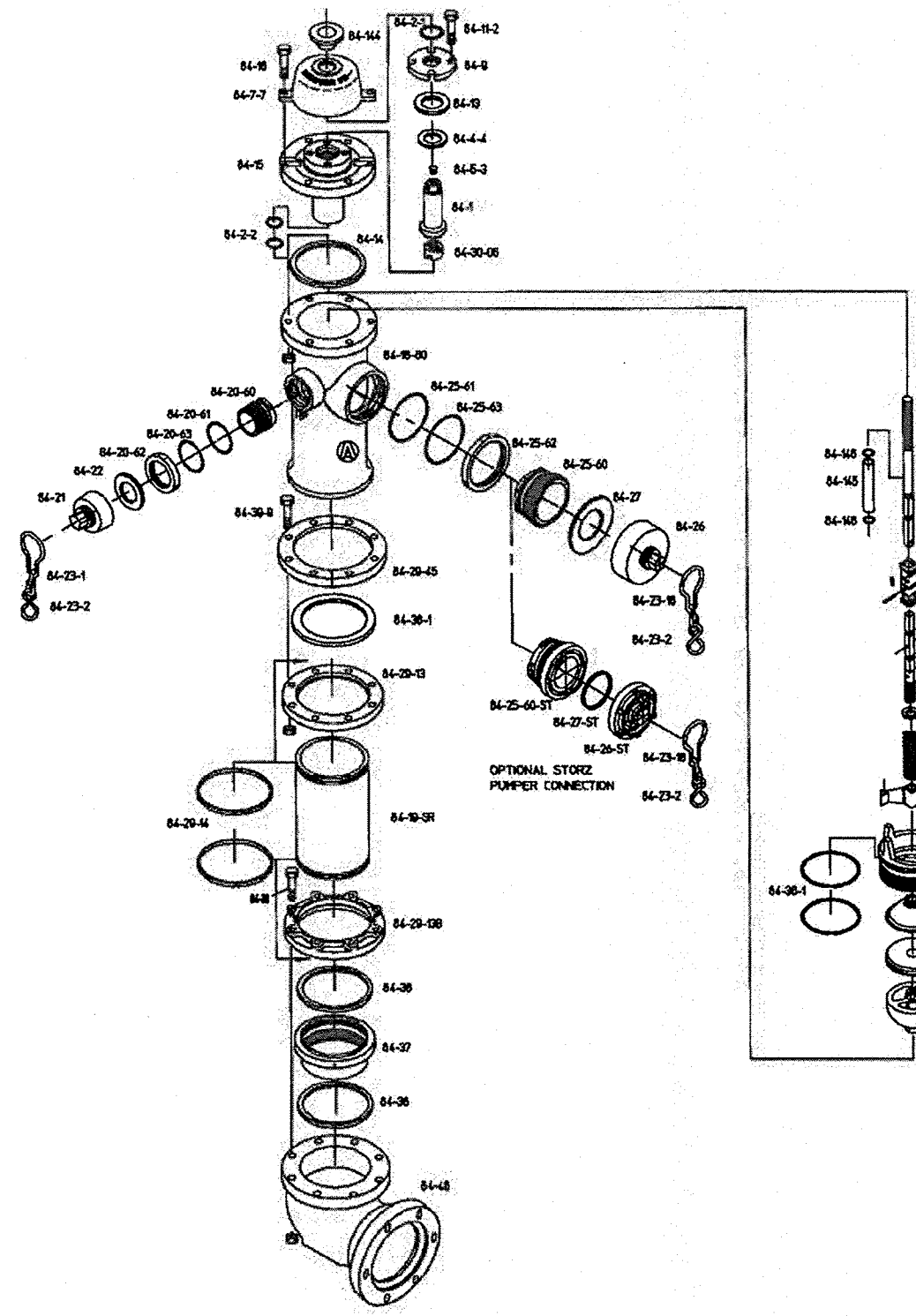
CONSTRUCTION

IT COMPLIES WITH AWWA C502 AND IS AVAILABLE IN  
CONFIGURATIONS WHICH ARE UL LISTED AND FM APPROVED



AMERICAN-DARLING 5-1/4" B-84-B-5 FIRE HYDRANT

EXPLODED DRAWINGS



THE RIGHT WAY

THE RIGHT WAY

AMERICAN-DARLING 5-1/4" B-84-B-5 FIRE HYDRANT

PARTS LIST

| P. NO.    | QTY.         | DESCRIPTION                   | MATERIAL            |
|-----------|--------------|-------------------------------|---------------------|
| 84-1      | 1            | Operating Nut                 | Bronze              |
| 84-2-1    | 1            | Cover O-ring                  | Buna-N              |
| 84-2-2    | 2            | Housing O-ring                | Buna-N              |
| 84-4-1    | 1            | Thrust Washer                 | Nylon               |
| 84-5-1    | 1            | Pipe Plug                     | Stainless Steel     |
| 84-7-1    | 1            | Weather Cover                 | Gray Iron           |
| 84-9      | 1            | Housing Cover                 | Gray Iron           |
| 84-11-2   | 4            | Housing Cover Cap Screw       | Plated Steel        |
| 84-13     | 1            | Housing Cover Gasket          | Fiber               |
| 84-14     | 1            | Housing Gasket                | Composition Rubber  |
| 84-15     | 1            | Housing                       | Ductile Iron        |
| 84-16     | 8            | Housing Bolt and Nut          | See Note 4          |
| 84-18-60  | 1            | Upper Barrel                  | Ductile Iron        |
| 84-19-SR  | 1            | Lower Barrel                  | Ductile Iron        |
| 84-20-60  | 2            | Hose Nozzle                   | Bronze              |
| 84-20-61  | 2            | Hose Nozzle Seal              | Buna-N              |
| 84-20-62  | 2            | Hose Nozzle Retainer          | Ductile Iron        |
| 84-20-63  | 2            | Hose Nozzle Retainer Washer   | Teflon              |
| 84-21     | 2            | Hose Cap                      | Gray Iron           |
| 84-22     | 2            | Hose Cap Gasket               | Rubber              |
| 84-23-1   | 1 Per Nozzle | Hose Cap Chain                | Steel               |
| 84-23-2   | 1 Per Nozzle | S-hook                        | Steel               |
| 84-23-18  | 1 Per Nozzle | Pumper Cap Chain              | Steel               |
| 84-25-60  | 1 or 0       | Pumper Nozzle                 | Bronze              |
| 84-25-60  | 1            | Storz Nozzle                  | Bronze/Aluminum     |
| 84-25-61  | 1 Per Nozzle | Pumper Nozzle Seal            | Buna-N              |
| 84-25-62  | 1 Per Nozzle | Pumper Nozzle Retainer        | Ductile Iron        |
| 84-25-63  | 1            | Pumper Nozzle Retainer Washer | Teflon              |
| 84-26     | 1 Per Nozzle | Pumper Cap                    | Gray Iron           |
| 84-26-ST  | 1            | Storz Nozzle Cap              | Aluminum            |
| 84-27-ST  | 1            | Pumper Cap Gasket             | Rubber              |
| 84-29-ST  | 1            | Storz Cap Gasket              | Rubber              |
| 84-29-13  | 2            | Barrel Flange                 | Ductile Iron        |
| 84-29-13B | 1            | Base Flange                   | Ductile Iron        |
| 84-29-14  | 2            | Spring Ring                   | Stainless Steel     |
| 84-29-30  | 1            | Ring Coupling                 | Gray Iron           |
| 84-29-31  | 2            | Coupling Clip Pins            | Stainless           |
| 84-29-45  | 1            | Breakable Flange              | Gray Iron           |
| 84-30-03  | 1            | Hydrant Spring                | Spring Steel        |
| 84-30-04  | 1            | Spring Pin                    | Steel               |
| 84-30-05  | 1            | Travel Stop Nut               | Bronze (See Note 9) |
| 84-30-07  | 1            | Spring Pin                    | Stainless           |
| 84-30-11  | 1            | Upper Hydrant Rod             | Steel               |
| 84-30-12  | 1            | Lower Hydrant Rod             | Steel               |
| 84-31     | 1            | Drain Lever                   | Bronze (See Note 9) |
| 84-35-02  | 1            | Hydrant Seat                  | Bronze (See Note 9) |
| 84-36-1   | 2            | Seat O-ring                   | Buna-N              |
| 84-37     | 1            | Drain Ring                    | Bronze (See Note 9) |
| 84-38     | 2            | Drain Ring Gasket             | Composition Fiber   |
| 84-38-1   | 1            | Barrel Gasket                 | Composition Fiber   |
| 84-39     | 8            | Base Bolt and Nut             | Stainless Steel     |
| 84-39-9   | 8            | Base Bolt and Nut             | Plated Steel        |
| 84-40     | 1            | Hydrant Valve Top             | Gray Iron           |
| 84-40-4   | 1            | Check Cap Pin                 | Stainless Steel     |
| 84-41     | 1            | Hydrant Valve                 | Rubber              |
| 84-42     | 1            | Hydrant Valve Bottom          | Ductile Iron        |
| 84-43     | 1            | Ringed Base                   | Ductile Iron        |
| 84-45-2   | 1            | Mechanical Joint Base         | Ductile Iron        |
| 84-46-TY  | 1            | Tyton Base                    | Ductile Iron        |
| 84-144    | 1            | Weather Shield                | Rubber              |
| 84-145    | 1            | Red Sleeve                    | Bronze              |
| 84-146    | 2            | Sleeve O-ring                 | Buna-N              |

NOTES

- Size and shape of nut on operating nut and cap, threading on nozzles and caps, and the direction of opening must be as specified.
- Cap chains are not furnished unless specified.
- All gray iron is ASTM A126 class B.
- Bolts and nuts are steel ASTM A307 above grade & stainless steel below grade.
- Working pressure 250 p.s.i.g., test pressure 500 p.s.i.g.
- Hydrant conforms to AWWA specifications C502.
- Upper barrel can be rotated 360°.
- Listed by Underwriters Laboratory, Inc. and Approved by Factory Mutual Research Corporation in admissible configurations at 200 p.s.i.g. in allowable configurations.
- Bronze in contact with water contains less than 16 percent zinc.
- Nominal turns to open is 19-1/2.

SUBMITTAL DATA

| Size and type of base connection | 4" M.J. F.L.G. | 6" M.J. F.L.G. | 8" M.J. F.L.G.  |
|----------------------------------|----------------|----------------|-----------------|
| Direction to open                | Left (CCW)     | Right (CW)     | Right (CW)      |
| Paint color                      |                |                |                 |
| Number of hose nozzles           |                | 2              |                 |
| Hose nozzle size                 |                |                |                 |
| Steamer nozzle                   | YES            | NO             |                 |
| Steamer nozzle size              |                |                |                 |
| Nozzle cap chains                | YES            | NO             |                 |
| City specified                   |                |                | San Antonio, TX |
| UL FM                            | YES            | NO             |                 |

AMERICAN Flow Control strongly recommends that you follow routine maintenance on fire hydrants as outlined in AWWA Manual M-17 for installation, test testing and maintenance of fire hydrants. The ease of operation and the frequency of use depends on the condition of the valve system and the maintenance system. But, general test cycle is listed in the Hydrant Test Cycle (see Hydrant Test Cycle) which may be used as a guide for the hydrant test cycle. Underwriters Laboratory (UL) and Factory Mutual Research Corporation (FM) test cycle is listed in the Hydrant Test Cycle (see Hydrant Test Cycle) which may be used as a guide for the hydrant test cycle. Underwriters Laboratory (UL) and Factory Mutual Research Corporation (FM) test cycle is listed in the Hydrant Test Cycle (see Hydrant Test Cycle) which may be used as a guide for the hydrant test cycle.

AMERICAN-DARLING 5-1/4" B-84-B-5 FIRE HYDRANT

FEATURES/BENEFITS/SPECIFICATION

FEATURES

AMERICAN Flow Control's American-Darling 5-1/4" B-84-B-5 hydrant incorporates more than 80 years of experience in design, manufacture, and field experience. This means dependable and efficient operation when needed.

Introduced in 1994, the B-84-B-5 hydrant is rated at 250 p.s.i.g. and is still tested at 500 p.s.i.g. This hydrant meets or exceeds all requirements of AWWA C502 for

The B-84-B-5 hydrant has these standard features:

- Upper barrel is furnished with an E-Coat primer and a two-part polyurethane top coat for durability, gloss and color retention
- Ductile iron upper and lower barrels and base
- Easy 360° rotation of nozzle section
- 250 p.s.i.g. rated working pressure
- Shell tested to 500 p.s.i.g.
- Lubrication chamber
- Stainless steel bolting below grade
- Bronze-to-bronze seating
- Short, lightweight disassembly wrench
- Travel stop nut located in top of hydrant
- Positive compression, fast closing drains

BENEFITS

Spring-Loaded Multiport Drains

There are two drain ports and four drain outlets as a standard feature on the B-84-B-5 hydrant. The rod spring helps assure drains close after approximately three turns of the operating nut. This important safety feature helps prevent wash-outs.

Lubrication Chamber

Seals operating threads from water and debris. Proper maintenance required.

Top Travel Stop Nut

Helps prevent stem buckling and damage to bronze components which may occur if excessive torque is applied in the full open position.

SPECIFICATIONS

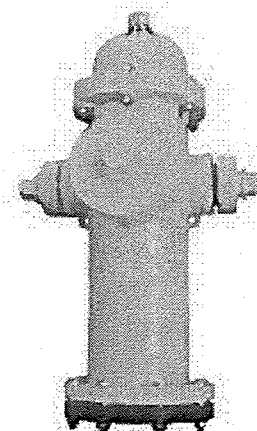
Fire hydrants shall meet or exceed AWWA C502, latest revision. Rated working pressure shall be 250 p.s.i.g., test pressure shall be 500 p.s.i.g., and hydrants shall include the following specific design criteria:

The main valve closure shall be of the compression type. Traffic feature to be designed for easy 360° rotation of nozzle section during field installation.

The main valve opening shall not be less than 5-1/4" and be designed so that removal

of all working parts can be accomplished without excavating. The bronze seat shall be threaded into mating threads of bronze. The draining system of the hydrant shall be bronze and positively activated by the main operating rod. Hydrant drains shall close completely after no more than three turns of the operating nut. There shall be a minimum of two internal ports and four drain port outlets to the exterior of the hydrant. Drain shutoff to be by direct compression closure.

Sliding drains are not permitted. Hydrant barrels shall be made of ductile iron. External surfaces above grade shall be factory coated with Electrocoat (E-coat) epoxy primer and catalyzed two-part polyurethane topcoating. Friction loss not to exceed 3.0 p.s.i.g. at 1000 gpm through 4-1/2" pumper nozzle. Hydrants shall be equal to AMERICAN Flow Control's American-Darling 5-1/4" B-84-B-5.



THE RIGHT WAY

GATES SUBDIVISION UNIT 2

BEXAR COUNTY, TX

WATER DISTRIBUTION DETAILS (SHEET 2 OF 5)

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:

7.4



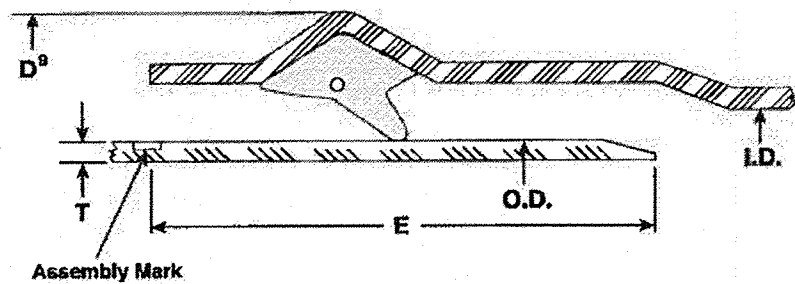


## ULTRA BLUE™ PVCO

IPS 200 PSI  
ASTM F-1483

SUBMITTAL AND DATA SHEET

| PIPE SIZE (IN)      | APPROX. BELL O.D. (IN) | AVERAGE O.D. (IN) | MIN. T. (IN) | APPROX. I.D. (IN) | STOP LINE DISTANCE MIN. E (IN) | APPROX. WEIGHT (LBS/FT) | APPROX. WEIGHT (LBS/JNT) |
|---------------------|------------------------|-------------------|--------------|-------------------|--------------------------------|-------------------------|--------------------------|
| Pressure Rating 200 |                        |                   |              |                   |                                |                         |                          |
| 6                   | 8 1/8                  | 6.625             | 0.182        | 6.24              | 4 1/2                          | 2.5                     | 51                       |
| 8                   | 10 1/4                 | 8.625             | 0.236        | 8.13              | 4 1/2                          | 4.2                     | 84                       |
| 10                  | 12 1/4                 | 10.750            | 0.295        | 10.13             | 5 1/2                          | 6.4                     | 127                      |
| 12                  | 14 3/4                 | 12.750            | 0.349        | 12.02             | 6 1/2                          | 8.9                     | 179                      |



Product Standard: ASTM F1483  
Pipe Compound: ASTM D1784 Cells Class 12454  
Gasket: ASTM F477  
Integral Bell Joint: ASTM D3139  
Certifications: ANSINSF Standard 61  
Pipe Length: 20 feet laying length  
Installation: AWWA C605  
JM Eagle™ Installation Guide

I.D. : Inside Diameter  
O.D. : Outside Diameter  
T : Wall Thickness  
D : Bell Outside Diameter  
E : Distance between Assembly Mark to the end of spigot.



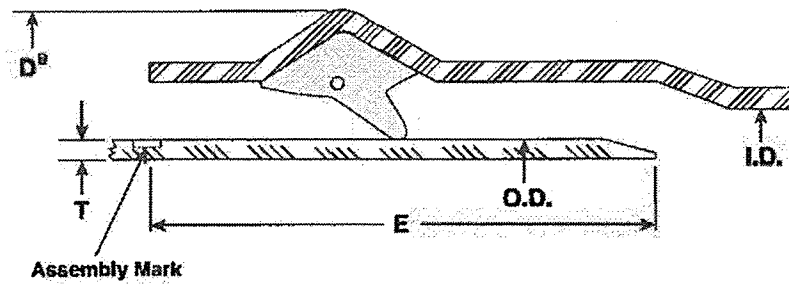
## ULTRA BLUE™ PVCO

AWWA C909 PIPE

SUBMITTAL AND DATA SHEET

| PIPE SIZE (IN)      | APPROX. BELL O.D. (IN) | AVERAGE O.D. (IN) | MIN. T. (IN) | APPROX. I.D. (IN) | STOP LINE DISTANCE MIN. E (IN) | APPROX. WEIGHT (LBS/FT) | APPROX. WEIGHT (LBS/JNT) |
|---------------------|------------------------|-------------------|--------------|-------------------|--------------------------------|-------------------------|--------------------------|
| Pressure Class 235* |                        |                   |              |                   |                                |                         |                          |
| 6                   | 8.53                   | 6.90              | 0.221        | 6.43              | 5 3/4                          | 3.21                    | 69                       |
| 8                   | 10.83                  | 9.05              | 0.290        | 8.44              | 6 1/2                          | 5.50                    | 117                      |
| 10                  | 13.43                  | 11.10             | 0.356        | 10.35             | 7 1/4                          | 8.36                    | 169                      |
| 12                  | 15.72                  | 13.20             | 0.423        | 12.31             | 7 3/4                          | 11.87                   | 239                      |
| Pressure Class 165  |                        |                   |              |                   |                                |                         |                          |
| 16                  | 20.05                  | 17.40             | 0.395        | 16.56             | 9 1/2                          | 14.51                   | 300                      |

\* UL 1285 Listed - 6"-12" PC 235  
\* Check for availability.



Product Standard: ANSIAWWA C909  
UL1285 6"-12" PC 235  
Pipe Compound: ASTM D1784 Cells Class 12454  
Gasket: ASTM F477  
Integral Bell Joint: ASTM D3139  
Certifications: ANSINSF Standard 61  
Pipe Length: 20 feet laying length  
Installation: AWWA C605  
JM Eagle™ Installation Guide

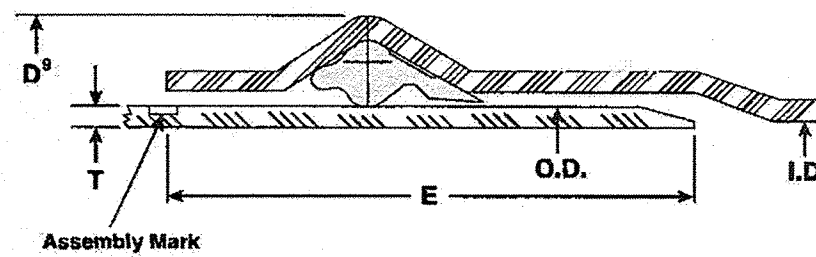


## BLUE BRUTE™

SUBMITTAL AND DATA SHEET

| PIPE SIZE (IN)                  | AVERAGE O.D. (IN) | NOM. I.D. (IN) | MIN. T. (IN) | MIN. E (IN) | APPROX. D* (IN) | APPROX. WEIGHT (LBS/FT) |
|---------------------------------|-------------------|----------------|--------------|-------------|-----------------|-------------------------|
| PRESSURE CLASS 165 psi (DR 25)  |                   |                |              |             |                 |                         |
| 4                               | 4.80              | 4.39           | 0.192        | 5.25        | 5.57            | 1.9                     |
| 6                               | 6.90              | 6.31           | 0.276        | 6.40        | 8.00            | 3.9                     |
| 8                               | 9.05              | 8.28           | 0.362        | 7.05        | 10.50           | 6.7                     |
| 10                              | 11.10             | 10.16          | 0.444        | 8.20        | 12.88           | 10.1                    |
| 12                              | 13.20             | 12.08          | 0.528        | 8.80        | 15.31           | 14.4                    |
| PRESSURE CLASS 235 psi (DR 18)* |                   |                |              |             |                 |                         |
| 4                               | 4.80              | 4.23           | 0.267        | 5.25        | 5.87            | 2.6                     |
| 6                               | 6.90              | 6.09           | 0.383        | 6.40        | 8.43            | 5.3                     |
| 8                               | 9.05              | 7.98           | 0.503        | 7.05        | 11.06           | 9.2                     |
| 10                              | 11.10             | 9.79           | 0.617        | 8.20        | 13.57           | 13.9                    |
| 12                              | 13.20             | 11.65          | 0.733        | 8.80        | 16.13           | 19.7                    |
| PRESSURE CLASS 305 psi (DR 14)* |                   |                |              |             |                 |                         |
| 4                               | 4.80              | 4.07           | 0.343        | 5.25        | 6.17            | 3.2                     |
| 6                               | 6.90              | 5.86           | 0.493        | 6.40        | 8.87            | 6.7                     |
| 8                               | 9.05              | 7.68           | 0.646        | 7.05        | 11.63           | 11.6                    |
| 10                              | 11.10             | 9.42           | 0.793        | 8.20        | 14.27           | 17.6                    |
| 12                              | 13.20             | 11.20          | 0.943        | 8.80        | 16.97           | 25.1                    |

Consult JM Eagle™ for CSA and other listing availability prior to shipment.  
Note: \*FM Approvals Pressure Class 150 psi for DR 18 and 200 psi for DR 14.  
\* Contact your JM Eagle™ sales representative for location availability.



Product Standard: ANSIAWWA C900  
Pipe Compound: ASTM D1784 Cells Class 12454  
Gasket: ASTM F477  
Integral Bell Joint: ASTM D3139  
Certifications: ANSINSF Standard 61  
UL Standard 1285  
Pipe Length: 20 feet laying length  
Installation: AWWA C605  
JM Eagle™ Installation Guide



## BIG BLUE™

SUBMITTAL AND DATA SHEET

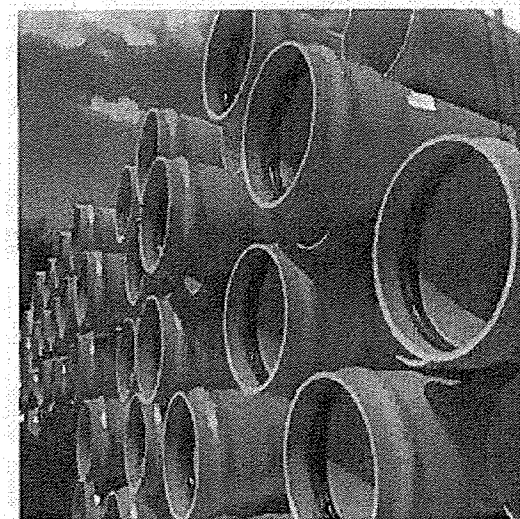
| PIPE SIZE (IN)           | AVERAGE O.D. (IN) | NOM. I.D. (IN) | MIN. T. (IN) | E (IN) | E (IN) | APPROX. D* (IN) | APPROX. WEIGHT (LBS/FT) |
|--------------------------|-------------------|----------------|--------------|--------|--------|-----------------|-------------------------|
| Rated psi 305 (DR 14)    |                   |                |              |        |        |                 |                         |
| 16                       | 17.40             | 14.85          | 1.242        | 8 1/2  | 9 1/2  | 21.68           | 43.77                   |
| Rated 235 psi (DR 18)    |                   |                |              |        |        |                 |                         |
| 14                       | 15.30             | 13.50          | 0.850        | 7 1/8  | 8 1/8  | 19.00           | 26.75                   |
| 16                       | 17.40             | 15.35          | 0.967        | 8 1/2  | 9 4/8  | 21.62           | 34.86                   |
| 18                       | 19.50             | 17.20          | 1.083        | 9 3/8  | 10 1/8 | 24.22           | 48.95                   |
| 20                       | 21.60             | 19.06          | 1.200        | 9      | 10 1/2 | 26.85           | 54.22                   |
| 24                       | 25.80             | 22.76          | 1.433        | 10     | 11 2/8 | 32.06           | 77.97                   |
| 30                       | 32.00             | 28.23          | 1.778        | 11 7/8 | 13 1/8 | 37.81           | 117.82                  |
| Rated 200 psi (DR 21)*   |                   |                |              |        |        |                 |                         |
| 14                       | 15.30             | 13.75          | 0.729        | 7 1/8  | 8 1/8  | 18.22           | 23.07                   |
| 16                       | 17.40             | 15.64          | 0.829        | 8 4/8  | 9 4/8  | 20.72           | 30.04                   |
| 18                       | 19.50             | 17.53          | 0.929        | 9 3/8  | 10 1/8 | 23.22           | 37.27                   |
| 20                       | 21.60             | 19.42          | 1.029        | 9      | 10 1/2 | 25.72           | 46.71                   |
| 24                       | 25.80             | 23.19          | 1.229        | 10     | 11 2/8 | 30.72           | 67.53                   |
| 30                       | 32.00             | 28.77          | 1.524        | 11 7/8 | 13 1/8 | 38.10           | 103.71                  |
| 36                       | 38.30             | 34.43          | 1.824        | 12 3/8 | 14 1/8 | 45.60           | 152.16                  |
| Rated 165 psi (DR 25)    |                   |                |              |        |        |                 |                         |
| 14                       | 15.30             | 14.00          | 0.612        | 7 1/8  | 8 1/8  | 17.94           | 19.48                   |
| 16                       | 17.40             | 15.92          | 0.696        | 8 4/8  | 9 4/8  | 20.41           | 25.38                   |
| 18                       | 19.50             | 17.85          | 0.780        | 9 3/8  | 10 1/8 | 22.87           | 31.99                   |
| 20                       | 21.60             | 19.77          | 0.864        | 9      | 10 1/2 | 25.34           | 39.46                   |
| 24                       | 25.80             | 23.61          | 1.032        | 10     | 11 2/8 | 30.27           | 56.88                   |
| 30                       | 32.00             | 29.29          | 1.280        | 11 7/8 | 13 1/8 | 37.12           | 88.49                   |
| 36                       | 38.30             | 35.05          | 1.532        | 12 3/8 | 14 1/8 | 44.43           | 128.41                  |
| 42                       | 44.50             | 40.73          | 1.780        | 14 1/8 | 16 3/8 | 51.85           | 176.02                  |
| 48*                      | 50.80             | 46.49          | 2.032        | 14 7/8 | 17 3/8 | 58.93           | 231.22                  |
| Rated 125 psi (DR 32.5)* |                   |                |              |        |        |                 |                         |
| 14                       | 15.30             | 14.30          | 0.471        | 7 1/8  | 8 1/8  | 17.48           | 15.14                   |
| 16                       | 17.40             | 16.27          | 0.535        | 8 4/8  | 9 4/8  | 19.88           | 19.63                   |
| 18                       | 19.50             | 18.23          | 0.600        | 9 3/8  | 10 1/8 | 23.30           | 24.75                   |
| 20                       | 21.60             | 20.19          | 0.665        | 9      | 10 1/2 | 24.38           | 30.54                   |
| 24                       | 25.80             | 24.12          | 0.794        | 10     | 11 2/8 | 29.47           | 44.11                   |
| 30                       | 32.00             | 29.91          | 0.985        | 11 7/8 | 13 1/8 | 36.55           | 68.45                   |
| 36                       | 38.30             | 35.80          | 1.178        | 12 3/8 | 14 1/8 | 43.10           | 98.22                   |
| 42                       | 44.50             | 41.60          | 1.369        | 14 1/8 | 16 3/8 | 50.93           | 135.49                  |
| 48                       | 50.80             | 47.48          | 1.563        | 14 7/8 | 17 3/8 | 57.61           | 178.49                  |

JM Eagle™ also manufactures this pipe in green for sewer force main applications and purple, specifically for reclaimed water systems. This pipe is made to the same requirements as our standard products. The only difference is that the pigment used is green or purple. These products will not be marked with UL or NSF listing marks. Additionally, the green pipe will be marked "Forced Sewer" and the purple pipe will be marked "Reclaimed Water... Do Not Drink."

## North American Pipe Corporation

www.northamericanpipe.com

### Product Description:



#### AWWA C-905 Municipal Water Pipe

North American Pipe's AWWA C-905 PVC product line is manufactured to meet the needs of modern municipal water distribution systems. With top quality raw materials and modern processing technology North American Pipe's C-905 pipe meets all industry standards in addition to our own rigorous quality control standards. North American Pipe's C-905 pipe utilizes Reiber style gaskets throughout the entire product offering. North American Pipe produces a broad range of C-905 pipe in DR-14, DR-18, DR-21, DR-25, DR-32.5, DR-41 and DR-51 classifications. Whether specifying or installing our pipe you can be assured that North American Pipe will provide the pipe - "Right, On Time, All the Time".

### This product is made in accordance with the following specifications:

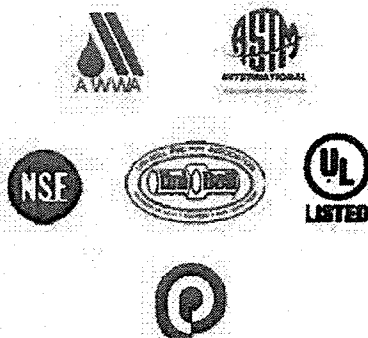
AWWA C905  
ASTM F477  
PPI TR-3

ASTM D1784  
ANSI/NSF 14  
UL 1285

ASTM D3139  
ANSI/NSF 61

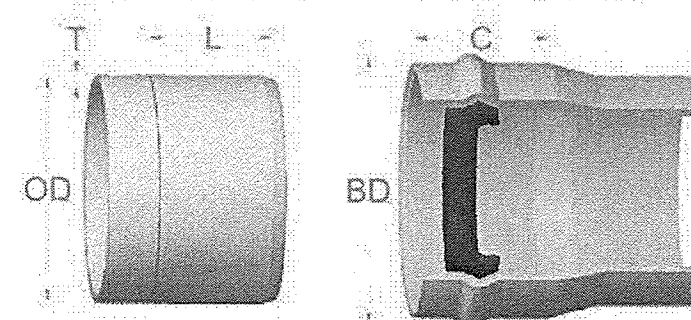
### Short Form Specification for North American Pipe Corporation AWWA C-905 Municipal Water Pipe

Water main transmission pipe shall be made in accordance with AWWA C905 from a compound conforming to a cell classification of 12454 as defined by ASTM D1784. Integral bells shall incorporate gaskets meeting the requirements of ASTM F477 and be locked into the bell. The assembled joint shall meet the requirements of ASTM D3139. The laying length of the pipe shall be 20 feet. The pipe and gasket must be tested and approved for contact with potable water in accordance with ANSI/NSF 61. The pipe and gasket shall be listed by Underwriters Laboratory.



## North American Pipe Corporation

AWWA C900-07: Municipal Water Pipe



| PIPE SIZE | OUTSIDE DIA. - NOM (OD) | *APPROX. BELL DIA. (BD) | **APPROX. BELL DEPTH (T) | INSERT MARK |
|-----------|-------------------------|-------------------------|--------------------------|-------------|
| 4"        | 4.80                    | 6.50                    | 5.00                     | 3.88        |
| 6"        | 6.90                    | 9.25                    | 5.75                     | 5.13        |
| 8"        | 9.05                    | 11.75                   | 7.00                     | 6.13        |
| 10"       | 11.10                   | 14.25                   | 7.25                     | 6.63        |
| 12"       | 13.20                   | 16.75                   | 8.00                     | 7.38        |

| MINIMUM WALL THICKNESS (T) | PC 165 DR 25 | PC 235 DR 18 | PC 305 DR 14 |
|----------------------------|--------------|--------------|--------------|
| 4"                         | .192         | .267         | .343         |
| 6"                         | .276         | .383         | .493         |
| 8"                         | .362         | .503         | .646         |
| 10"                        | .444         | .617         | .793         |
| 12"                        | .528         | .733         | .943         |

Note: These dimensions are for estimating purposes only. \* Dimension given for Approx. Bell Diameter (BD) is for highest pressure class. \*\* Nominal depth, depth will vary by pressure class.

Right, On Time, All the Time.

www.northamericanpipe.com

GATES SUBDIVISION UNIT 2

BEXAR COUNTY, TX

WATER DISTRIBUTION DETAILS (SHEET 3 OF 5)

PLAT NO.  
22-11800017

JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN-OM CHECKED-CL

SHEET NUMBER:

7.5



## ADS POTABLE WATER SERVICE TUBING (CTS)

ADS Potable water service tubing (CTS) is a leader in today's potable water service market. Its flexibility and durability distinguish it from the competition and make it ideal for a variety of applications.

ADS CTS tubing is strong and resistant to many common causes of damage such as vibrations, surface loads and pressure surges.

### APPLICATIONS:

Residential & Commercial Water Service  
Well/Pump Water Systems  
Municipal Service Lines  
Farm & Ranch Water Systems

### FEATURES:

- Material conforms to ASTM D3350 requirements
- Certified to meet NSF 14/61 standard
- Durable plastic material stands the test of time
- Flexibility makes it ideal for a variety of projects
- Strength withstands weather and the human element
- Incremental footage markers printed every 2 feet throughout each coil length
- Light weight
- Chemically resistant
- Consistent outside diameter regardless of wall thickness or pressure rating

### BENEFITS:

- Resistant to rot or corrosion
- Fast and easy to install
- Easy installation provides cost-efficiency
- Flexible lengths can be installed in uneven terrain
- Available in many lengths

ADS Services: ADS representatives are committed to providing you with the answers to all your questions, including specifications, and installation and more.

The Most Advanced Name in Drainage Systems

ADS

ADS PolyFlex

## ADS POTABLE WATER SERVICE TUBING (CTS) PIPE SPECIFICATIONS

**SCOPE**  
This specification describes ADS Potable Water Service Tubing (CTS) pipe SDR 9 for use in potable water service applications.

### PIPE REQUIREMENTS

ADS potable water service tubing shall meet the requirements of ASTM D2737, AWWA C901 and NSF Standards 14 and 61. Pipe dimensions shall meet Copper Tubing Size (CTS) standards.

### MATERIAL PROPERTIES

Tubing material shall be high density polyethylene conforming with the minimum requirements of cell classification 345464E as defined and described in ASTM D3350. The resin shall have a material designation code of PE3608 (formerly PE3408) by the Plastic Pipe Institute.

### DISINFECTION/MAINTENANCE

The active chlorine content of disinfecting solutions shall not exceed 12%. All disinfecting solution must be flushed from all lines within the system. Industry accepted procedures, like ANSI/AWWA C651 Disinfecting Water Mains, should be followed for both new and repaired potable water lines.

### INSTALLATION

Installation is similar to other flexible tubing/pipe products. Methods including direct bury, plowing or pulling are applicable per local, state or federal guidelines for the application.

| SDR 9 (200 psi) 3608 CTS |                  |                                      |                                   |                     |                    |                     |            |  |  |
|--------------------------|------------------|--------------------------------------|-----------------------------------|---------------------|--------------------|---------------------|------------|--|--|
| Nom. Size (in.)          | O.D. Range (in.) | With Epoxy Coated Alloy Bolts & Nuts | With Stainless Steel Bolts & Nuts | Sleeve Length (in.) | 5/8" Bolt Quantity | Laying Length (in.) | Wt. (lbs.) |  |  |
| 1 1/2                    | 1.81 - 2.28      | 461-0410228-000                      | 461-01810228-031                  | 4                   | 2                  | 10.5                | 8.2        |  |  |
| 2                        | 2.34 - 2.85      | 461-02340285-000                     | 461-02340285-031                  | 4                   | 2                  | 10.5                | 10         |  |  |
| 2 1/2                    | 2.84 - 3.35      | 461-02840335-000                     | 461-02840335-031                  | 4                   | 2                  | 10.5                | 10         |  |  |
| 3                        | 3.46 - 4.21      | 461-03460421-000                     | 461-03460421-031                  | 5                   | 4                  | 10.5                | 15         |  |  |
| 4                        | 4.46 - 5.60      | 461-04460560-000                     | 461-04460560-031                  | 5.5                 | 4                  | 10.5                | 26         |  |  |
| 6                        | 6.54 - 7.65      | 461-06540765-000                     | 461-06540765-031                  | 6                   | 4                  | 10.5                | 33         |  |  |
| 8                        | 8.54 - 9.85      | 461-08540985-000                     | 461-08540985-031                  | 6                   | 4                  | 10.5                | 44         |  |  |
| 10                       | 10.65 - 12.20    | 461-10651220-000                     | 461-10651220-031                  | 7.5                 | 8                  | 13.5                | 72         |  |  |
| 12                       | 12.75 - 14.40    | 461-12751440-000                     | 461-12751440-031                  | 7.5                 | 8                  | 13.5                | 89         |  |  |

For more information on ADS CTS pipe and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

ADS Terms and Conditions of Sale are available on the ADS website, [www.ads-pipe.com](http://www.ads-pipe.com)  
The ADS logo and the Gates logo are registered trademarks of Advanced Drainage Systems, Inc.  
© 2010 Advanced Drainage Systems, Inc. (40030410) (100606 07/10)

The Most Advanced Name in Drainage Systems

ADS

## 461 Standard Coupling Meets AWWAC219 Standards

| Nom. Size (in.) | O.D. Range (in.) | With Epoxy Coated Alloy Bolts & Nuts | With Stainless Steel Bolts & Nuts | Sleeve Length (in.) | 5/8" Bolt Quantity | Laying Length (in.) | Wt. (lbs.) |
|-----------------|------------------|--------------------------------------|-----------------------------------|---------------------|--------------------|---------------------|------------|
| 1 1/2           | 1.81 - 2.28      | 461-0410228-000                      | 461-01810228-031                  | 4                   | 2                  | 10.5                | 8.2        |
| 2               | 2.34 - 2.85      | 461-02340285-000                     | 461-02340285-031                  | 4                   | 2                  | 10.5                | 10         |
| 2 1/2           | 2.84 - 3.35      | 461-02840335-000                     | 461-02840335-031                  | 4                   | 2                  | 10.5                | 10         |
| 3               | 3.46 - 4.21      | 461-03460421-000                     | 461-03460421-031                  | 5                   | 4                  | 10.5                | 15         |
| 4               | 4.46 - 5.60      | 461-04460560-000                     | 461-04460560-031                  | 5.5                 | 4                  | 10.5                | 26         |
| 6               | 6.54 - 7.65      | 461-06540765-000                     | 461-06540765-031                  | 6                   | 4                  | 10.5                | 33         |
| 8               | 8.54 - 9.85      | 461-08540985-000                     | 461-08540985-031                  | 6                   | 4                  | 10.5                | 44         |
| 10              | 10.65 - 12.20    | 461-10651220-000                     | 461-10651220-031                  | 7.5                 | 8                  | 13.5                | 72         |
| 12              | 12.75 - 14.40    | 461-12751440-000                     | 461-12751440-031                  | 7.5                 | 8                  | 13.5                | 89         |

## 462 12" Long Sleeve Coupling Meets AWWAC219 Standards

| Nom. Size (in.) | O.D. Range (in.) | With Epoxy Coated Alloy Bolts & Nuts | With Stainless Steel Bolts & Nuts | Sleeve Length (in.) | 5/8" Bolt Quantity | Laying Length (in.) | Wt. (lbs.) |
|-----------------|------------------|--------------------------------------|-----------------------------------|---------------------|--------------------|---------------------|------------|
| 4               | 4.46 - 5.60      | 462-04460560-000                     | 462-04460560-031                  | 12                  | 4                  | 17                  | 31.4       |
| 6               | 6.54 - 7.65      | 462-06540765-000                     | 462-06540765-031                  | 12                  | 4                  | 17                  | 42.3       |
| 8               | 8.54 - 9.85      | 462-08540985-000                     | 462-08540985-031                  | 12                  | 4                  | 17                  | 55.3       |
| 10              | 10.65 - 12.20    | 462-10651220-000                     | 462-10651220-031                  | 12                  | 8                  | 17                  | 73.0       |
| 12              | 12.75 - 14.40    | 462-12751440-000                     | 462-12751440-031                  | 12                  | 8                  | 17                  | 87.0       |

**WARRANTY:**  
Smith-Blair warrants its products only against defects in materials and workmanship. Smith-Blair's liability and customer's exclusive remedy under this warranty, or any warranty, extends for a period of one (1) year from the date of Smith-Blair's shipment and is expressly limited to replacement of the purchase price, repair, or replacement, at Smith-Blair's option, during said period, upon proof satisfactory to Smith-Blair and upon customer's returning and prepaying all charges on such products to factory or warehouse designated by Smith-Blair. THIS WARRANTY IS MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, WITH RESPECT TO QUALITY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.

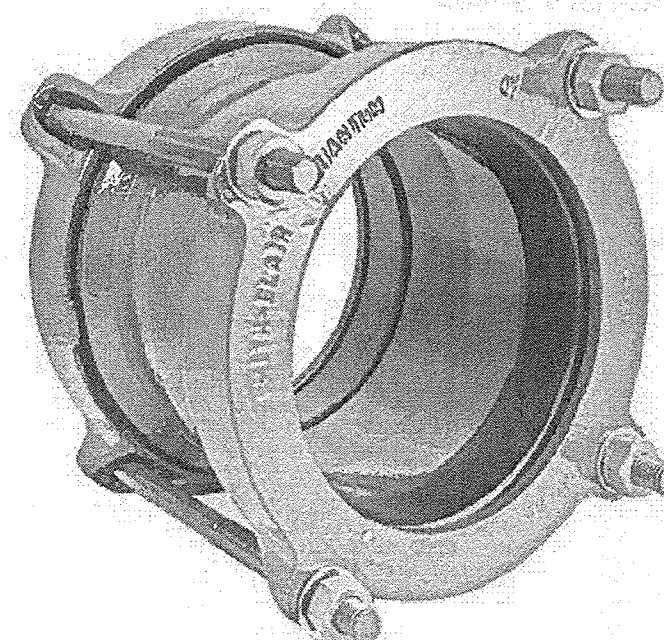
| Physical Address                                           | Mailing Address                                            | Inside Sales                                                                                                                                         |
|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smith-Blair, Inc.<br>30 Clove Ave.<br>Towamencin, NJ 07064 | Smith-Blair, Inc.<br>P.O. Box 5337<br>Towamencin, NJ 07065 | Ph: (800) 643-8705 • (870) 773-5127<br>Fax: (800) 646-6792 • (870) 773-5212<br>Website: <a href="http://www.smith-blair.com">www.smith-blair.com</a> |

SWP00000311

Smith-Blair  
A SERRIS COMPANY

Clamp and Coupling Products CC-460 03/11

## Quantum® Coupling Wide-Range



Patent 6,168,210 B1

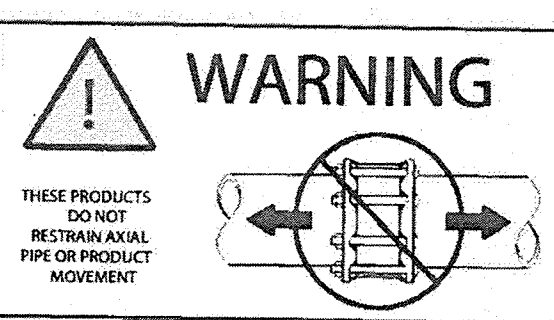
The Smith-Blair Quantum® Coupling accommodates up to 1.65-inches of Pipe O.D. differential with a single flange and gasket.

The coupling's 5/8" bolts are quick and easy to install because no disassembly is required.

Blair's Flexi-Coat® epoxy system maintains superior flexibility as the product is installed on the pipe. Additionally, this durable epoxy coating provides superior corrosion protection over a wide temperature range and can be shipped with minimal damage.

The Quantum's tough ductile iron sleeve and follower flanges provide the tensile strength and corrosion resistance that is necessary for couplings to withstand the punishment they must endure during installation and throughout their long lives.

The Quantum coupling comes standard with fusion bonded NSF 61 approved epoxy coating. Smith-



**WARNING**  
THESE PRODUCTS DO NOT RESTRAIN AXIAL PIPE OR PRODUCT MOVEMENT.

**Material Specifications**  
Sleeve: High Strength Ductile Iron ASTM A536  
Flanges: High Strength Ductile Iron ASTM A536  
Gasket: Nitrile (Buna-N) NSF 61 approved  
Coating: Fusion Bonded Flexi-Coat® Epoxy per AWWA C213  
Bolts: HSLA steel per ANSI A21.11 (AWWA C111) with Flexi-Coat epoxy finish. Stainless Steel optional.  
Nuts: Heavy Hex HSLA steel per ANSI A21.11 with Fluoropolymer Coating (to prevent galling).  
Material specifications subject to change.

## PRODUCT SPECIFICATIONS

- Hymax 2000 meets or exceeds all specifications of AWWA Standard C219, NSF-61 and NSF-372.
- Center Ring - ASTM A 53 Grade A steel
- End Rings - ASTM A 795 Steel
- Gaskets - EPDM compounded for water and sewerage, meets international standards for contact with drinking water NSF-61 and NSF-372.
- Bolts and Nuts - Type 304 stainless steel. Rolled thread and anti-galling coating.
- Bridge - Type 304 stainless steel.
- Coating - 100% Fusion-bonded epoxy for enhanced corrosion protection. Meets NSF-61 and NSF-372 standards.
- Gaskets - EPDM compounded for water and sewerage, meets international standards for contact with drinking water NSF-61 and NSF-372.
- Working Temperature: -20°F up to +180°F for continuous operations; up to +125°F for short time operations; up to +215°F.
- G = Min. Pipe insertion of 4 inch.
- Deflection up to 4" per side.

5. Selection up to 4 per size

| Part Number | Reference<br>Flanges | MS<br>Length<br>(in) | Overall<br>Length<br>(in) | Flange<br>Radius<br>Removal of<br>in (in) | Overall<br>Length<br>Flange<br>Removal of<br>in (in) | D<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in) | W<br>(in)</ |
|-------------|----------------------|----------------------|---------------------------|-------------------------------------------|------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
|-------------|----------------------|----------------------|---------------------------|-------------------------------------------|------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|

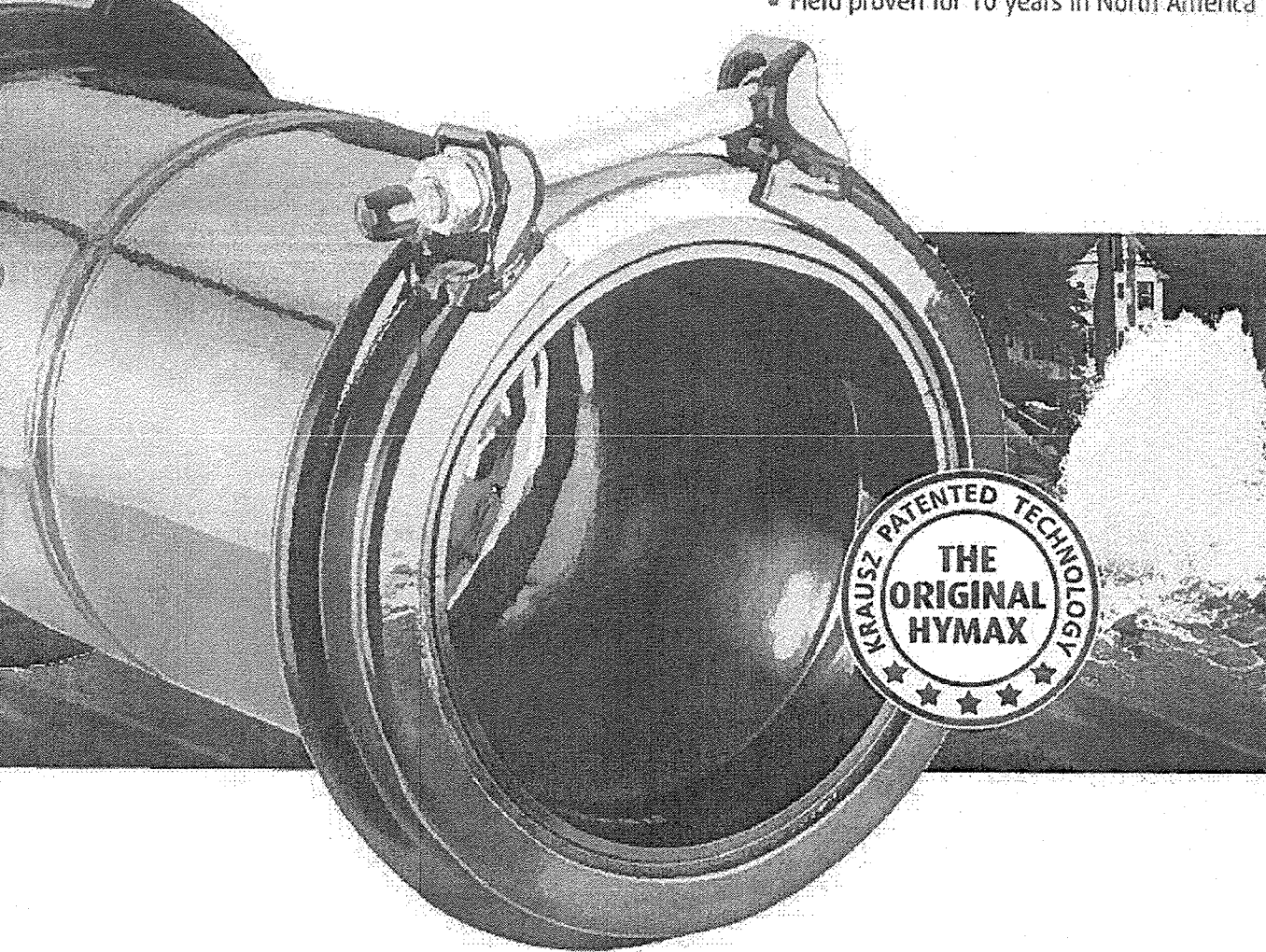
For more information about Hymax and other Krausz products visit us at: [www.krauszusa.com](http://www.krauszusa.com)  
For ordering information or to speak with a Krausz representative please contact us at 855-457-2879 or 855-4KRAUSZ.

**Krausz USA**  
331 SW 57th Avenue  
Ocala, Florida 34474  
[info@krauszusa.com](mailto:info@krauszusa.com)  
[www.krauszusa.com](http://www.krauszusa.com)

**KRAUSZ**  
Repair the past. Connect the future.

## HYMAX® LONG BODY 1.5"-24"

- Market-leading coupling; combining reliability and ease of use
- Uniquely addressing the widest range of coverage
- Time-saving installation via unique design features: 2 or 4 top-facing bolts
- Field proven for 10 years in North America

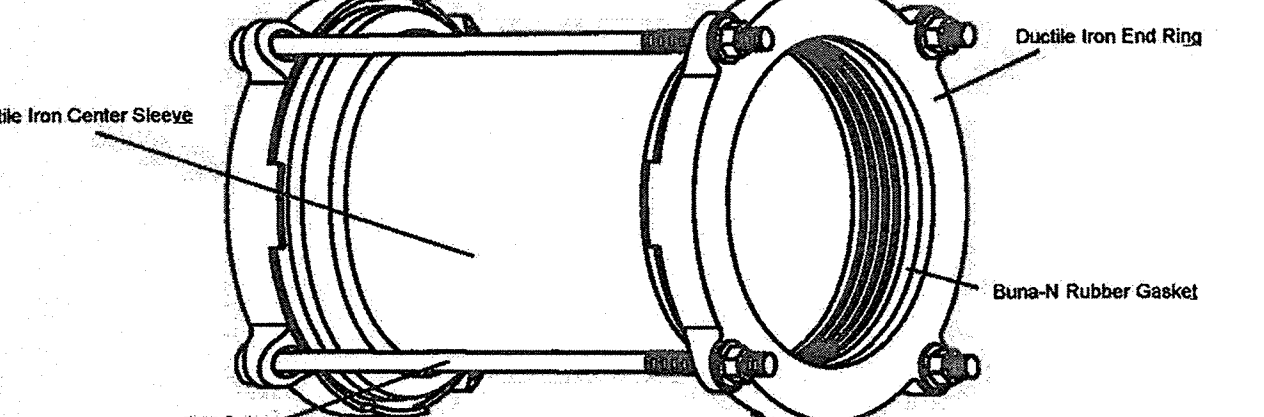


**KRAUSZ**  
Repair the past. Connect the future.

## SUBMITTAL INFORMATION

Ductile Iron Wide Range Transition Coupling - (FC2W-xx-L12 style)

4" - 12" STYLE FC2W-L12 COUPLINGS FOR JOINING PIPES WITH DIFFERENT O.D.'S



| NOMINAL PIPE SIZE | RANGE (inches) | RANGE (mm)    | BOLT DIAMETER | NUMBER OF BOLTS | SLEEVE LENGTH | APPROX. WT. LBS. | PART NUMBER | ✓ SUBMITTED (ITEM) |
|-------------------|----------------|---------------|---------------|-----------------|---------------|------------------|-------------|--------------------|
| 3"                | 2.50 - 4.29    | 63.5 - 109.0  | 5/8"          | 3               | 12"           | 36               | FC2W-L12    |                    |
| 4"                | 3.95 - 5.60    | 100.6 - 142.2 | 5/8"          | 4               | 12"           | 45               | FC2W-L12    |                    |
| 6"                | 6.23 - 7.50    | 158.3 - 190.0 | 5/8"          | 4               | 12"           | 56               | FC2W-L12    |                    |
| 8"                | 8.40 - 9.75    | 213.3 - 247.8 | 5/8"          | 4               | 12"           | 69               | FC2W-L12    |                    |
| 10"               | 10.75 - 12.12  | 273.0 - 307.8 | 5/8"          | 6               | 12"           | 90               | FC2W-L12    |                    |
| 12"               | 12.75 - 14.98  | 323.8 - 380.0 | 5/8"          | 6               | 12"           | 109              | FC2W-L12    |                    |

Pipes smaller than the published range may be joined using the FC2W coupling at a reduced pressure rating. Contact Ford Meter Box for details.

- FEATURES**
- Center Sleeve: Ductile Iron per ASTM A536 (65-45-12)
  - End Rings: Ductile Iron per ASTM A536 (65-45-12)
  - Bolts and nuts: High strength low alloy steel per ASTM A242 and AWWA C111. Bolts have an oval neck beneath the head, which rests within the end ring to prevent bolts from rotating while tightening. Optional stainless steel bolts and nuts are available.
  - Coating: Black, fusion bonded epoxy applied per AWWA C213
  - Gasket: Buna-N rubber per ASTM D2000
  - 250 psi rated working water pressure

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.

**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
<http://www.fordmeterbox.com>

Submitted By: \_\_\_\_\_  
Date: 08/12/13

GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
WATER DISTRIBUTION DETAILS (SHEET 4 OF 5)

PLAT NO. 22-1180017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN/OM CHECKED/CL  
SHEET NUMBER:

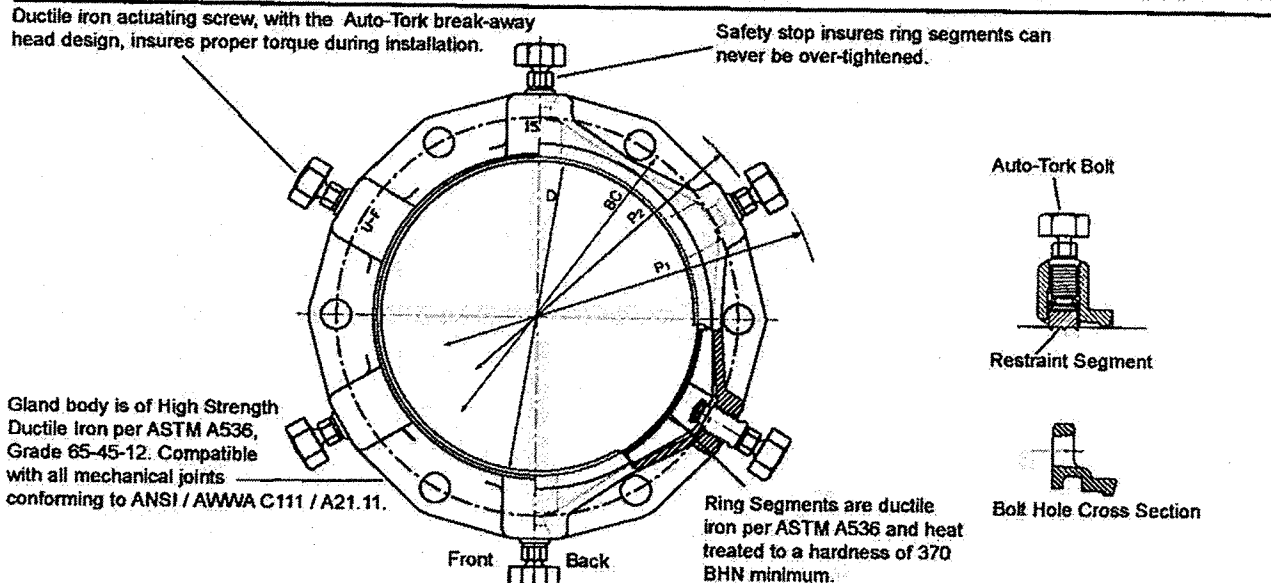
7.6



## SUBMITTAL INFORMATION

### Mechanical Joint Retainer (UFR1500-x-U style)

3" - 12" SERIES UFR1500 CIRCLE-LOCK MECHANICAL JOINT RESTRAINT FOR C900, C909 AND IPS PVC



| NOM. PIPE SIZE | O.D.         | CATALOG NUMBER | No. of RESTRAINT SEGMENTS | APPROX. WEIGHT (LBS.) | P1*    | P2**   | BC     | D      | PRESSURE RATING | ✓ SUBMITTED ITEM(S) |
|----------------|--------------|----------------|---------------------------|-----------------------|--------|--------|--------|--------|-----------------|---------------------|
| 3"             | 3.50"        | UFR1500-3-U    | 4                         | 9                     | 13.50" | 8.00"  | 6.19"  | 4.06"  | C900            | ✓                   |
| 4"             | 4.50-4.80"   | UFR1500-4-U    | 4                         | 10                    | 13.50" | 9.40"  | 8.29"  | 4.80"  | C909            | ✓                   |
| 6"             | 6.65-6.90"   | UFR1500-6-U    | 6                         | 14                    | 15.13" | 11.65" | 9.50"  | 7.00"  | C900            | ✓                   |
| 8"             | 8.65-9.00"   | UFR1500-8-U    | 8                         | 18                    | 17.25" | 13.75" | 13.60" | 9.15"  | C909            | ✓                   |
| 10"            | 10.75-11.10" | UFR1500-10-U   | 8                         | 25                    | 19.38" | 16.00" | 15.50" | 11.30" | C900            | ✓                   |
| 12"            | 12.75-13.20" | UFR1500-12-U   | 8                         | 29                    | 21.50" | 18.00" | 17.65" | 13.30" | C909            | ✓                   |

\*Maximum O.D. of gland on pipe before Auto-Torque heads are removed (as shipped).  
\*\*Maximum O.D. of gland on pipe after Auto-Torque heads are removed.

#### FEATURES

- Fits C900, C909 and ASTM D2241 IPS PVC
- Full circle contact and support of the pipe wall
- "Auto-Torque" actuating screws with heads specially designed to twist off at the correct installation torque, leaving a hex head in case future system maintenance or removal is required
- Restraining segments are mechanically retained in pockets
- Series 1500 eliminates the need to pour expensive and time consuming concrete thrust blocks
- UL/FM approved, 4"-12" nominal size C900 PVC, for use on listed and approved PVC pipe
- Gland, screws and segments are black epoxy coated using the e-coat process
- Gland colored red for identification purposes
- Ductile iron castings are manufactured, assembled, inspected and packaged in the U.S.A.

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.

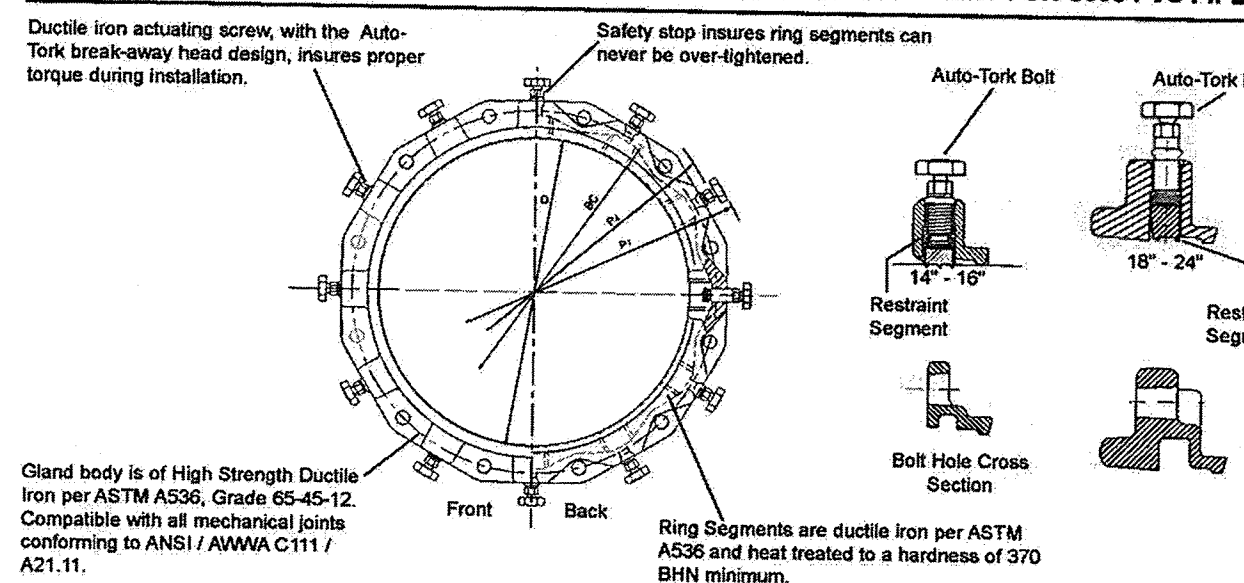
**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
http://www.fordmeterbox.com

Submitted By: \_\_\_\_\_  
Date: 03/01/12

## SUBMITTAL INFORMATION

### Mechanical Joint Retainer (UFR1500-C-xx-U style)

14" - 24" SERIES UFR1500-C CIRCLE LOCK MECHANICAL JOINT RESTRAINT FOR C905 PVC PIPE



| NOM. PIPE SIZE | O.D.   | CATALOG NUMBER | No. of RESTRAINT SEGMENTS | APPROX. WEIGHT (LBS.) | P1*    | P2**   | BC     | D      | PRESSURE RATING | ✓ SUBMITTED ITEM(S) |
|----------------|--------|----------------|---------------------------|-----------------------|--------|--------|--------|--------|-----------------|---------------------|
| 14"            | 15.30" | UFR1500-C-14-U | 10                        | 47                    | 23.62" | 22.72" | 18.75" | 15.44" | C905            | ✓                   |
| 16"            | 17.40" | UFR1500-C-16-U | 12                        | 63                    | 26.18" | 25.28" | 21.0"  | 17.54" | C905            | ✓                   |
| 18"            | 19.50" | UFR1500-C-18-U | 12                        | 70                    | 28.28" | 27.38" | 23.25" | 19.64" | C905            | ✓                   |
| 20"            | 21.60" | UFR1500-C-20-U | 14                        | 96                    | 30.38" | 29.48" | 25.4"  | 21.74" | C905            | ✓                   |
| 24"            | 25.80" | UFR1500-C-24-U | 16                        | 128                   | 34.58" | 33.68" | 30.0"  | 25.94" | C905            | ✓                   |

\*Maximum O.D. of gland on pipe before Auto-Torque heads are removed (as shipped).  
\*\*Maximum O.D. of gland on pipe after Auto-Torque heads are removed.

#### FEATURES

- Full circle contact and support of the pipe wall. The Series 1500 can be used on any thickness class of AWWA C-905 PVC pipe without any point loading.
- "Auto-Torque" actuating screws with heads specially designed to twist off at the correct installation torque, leaving a hex head in case future system maintenance or removal is required.
- Restraining segments are mechanically retained in pockets.
- Series 1500 eliminates the need to pour expensive and time consuming concrete thrust blocks.
- Gland, screws and segments are black epoxy coated using the e-coat process
- Gland colored red for identification purposes
- Ductile iron castings are manufactured, assembled, inspected and packaged in the U.S.A.

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.

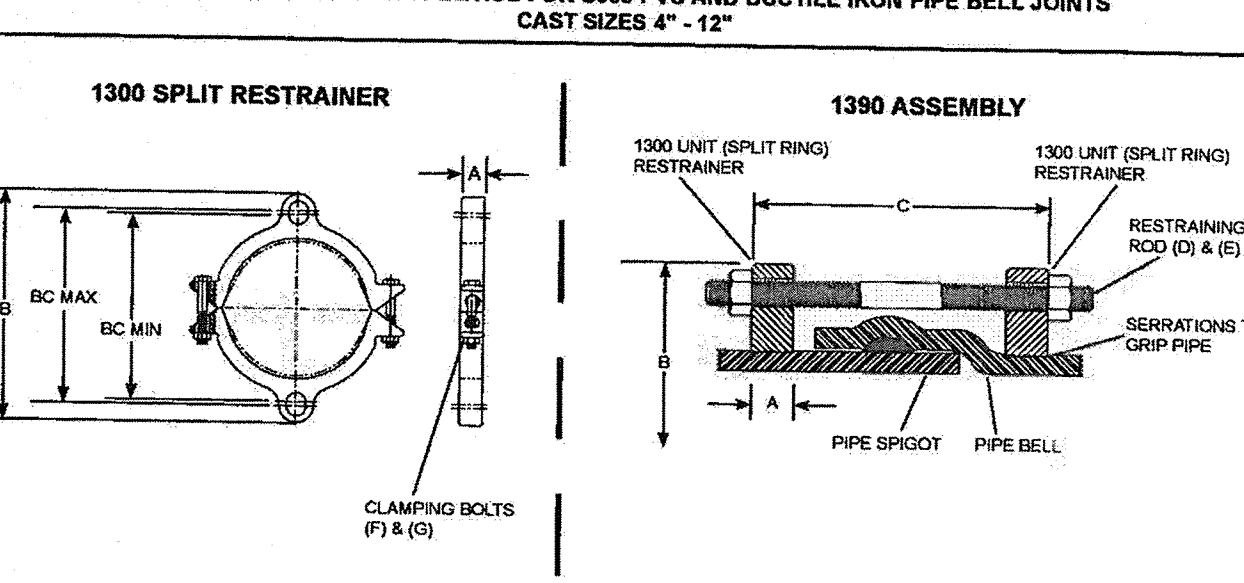
**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
http://www.fordmeterbox.com

Submitted By: \_\_\_\_\_  
Date: 10/16/13

## SUBMITTAL INFORMATION

### Uni-Flange Restraint (UFR1390-C-x-U style)

SERIES 1390-C RESTRAINT DEVICE FOR C900 PVC AND DUCTILE IRON PIPE BELL JOINTS  
CAST SIZES 4" - 12"



| PVC PIPE WITH DI PIPE OD STYLE 1390-C |                | A      | B       | C   | RESTRAINING RODS |               | CLAMPING BOLTS |               | BC MAX | BC MIN | ✓ SUBMITTED ITEM(S) |
|---------------------------------------|----------------|--------|---------|-----|------------------|---------------|----------------|---------------|--------|--------|---------------------|
| OD                                    | CATALOG NO.    | APPROX |         | MAX | No.              | SIZE          | No.            | SIZE          |        |        |                     |
| 4.80                                  | UFR1390-C-4-U  | 1-1/8" | 9-1/8"  | 12" | 2                | 3/4" x 1 1/2" | 4              | 5/8" x 3-1/2" | 7.50"  | 7.14"  |                     |
| 6.90                                  | UFR1390-C-6-U  | 1-1/8" | 11-1/8" | 13" | 2                | 3/4" x 1 1/2" | 4              | 5/8" x 3-1/2" | 9.50"  | 9.14"  |                     |
| 9.00                                  | UFR1390-C-8-U  | 1-1/4" | 14-5/8" | 15" | 2                | 3/4" x 1 1/2" | 4              | 5/8" x 3-1/2" | 12.50" | 11.50" |                     |
| 11.10                                 | UFR1390-C-10-U | 1-3/8" | 16-5/8" | 16" | 4                | 3/4" x 2"     | 4              | 7/8" x 5"     | 15.00" | 13.50" |                     |
| 13.20                                 | UFR1390-C-12-U | 1-3/8" | 18-1/8" | 18" | 4                | 3/4" x 2"     | 4              | 7/8" x 5"     | 17.62" | 15.62" |                     |

#### FEATURES

- 4" - 12" Sizes: Cast Ductile Iron per ASTM A536 Grade 65-45-12.
- 360° contact and support of the pipe wall.
- Restraining rods are high strength, low alloy steel per ANSI / AWWA C111 / A21.11.
- Rated at full rated pressure of any class of PVC Pipe, minimum 2:1 safety factor.
- Ductile Iron Pipe shall have the following pressure ratings: 4" through 8" = 250 PSI, 10" and 12" = 200 PSI.
- Castings are manufactured in the United States of America.
- Black e-coat epoxy coating

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.

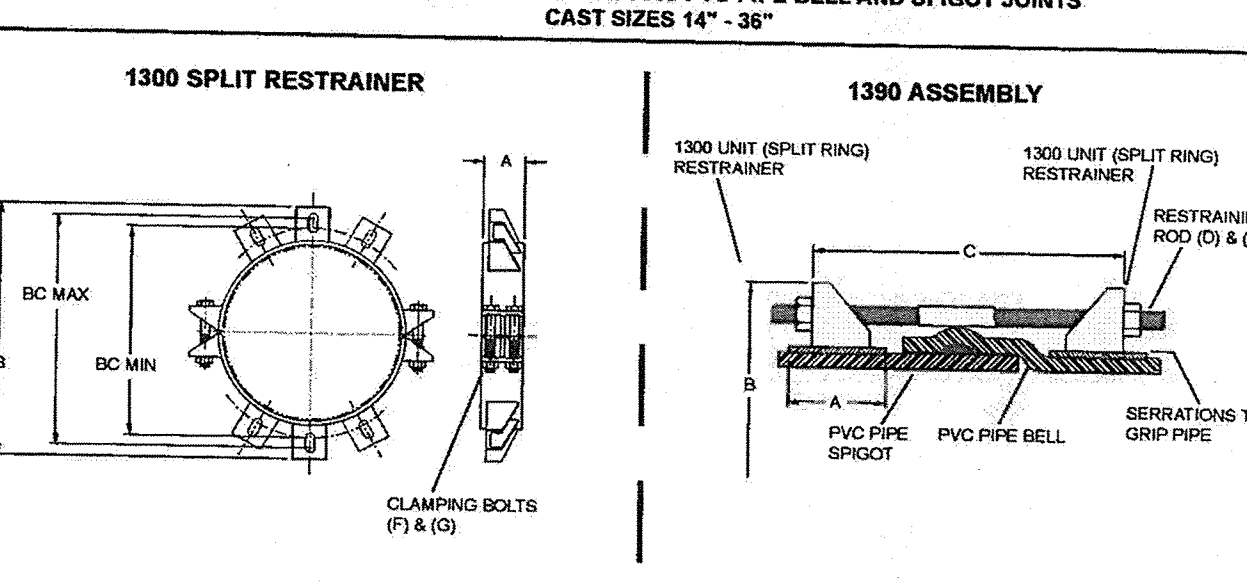
**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
http://www.fordmeterbox.com

Submitted By: \_\_\_\_\_  
Date: 09/13/13

## SUBMITTAL INFORMATION

### Restrainer (UFR1390-C-xx-U style)

SERIES 1390-C RESTRAINT DEVICE FOR C905 PVC PIPE BELL AND SPIGOT JOINTS  
CAST SIZES 14" - 36"



| NOM PIPE SIZE | PVC PIPE WITH DI STYLE 1390-C | A  | B         | C     | RESTRAINING RODS | CLAMPING BOLTS | BC MAX | BC MIN          | APPROX. WT. LBS. | ✓ SUBMITTED ITEM(S) |
|---------------|-------------------------------|----|-----------|-------|------------------|----------------|--------|-----------------|------------------|---------------------|
|               | OD<br>CALCULON NO.            |    | B APPROX  | C MAX | Qty, R           | Qty, F         |        |                 |                  |                     |
| 14"           | 15.30 UFR1390-C-14-U          | 4" | 22-1/2"   | 24"   | 6                | 3/4" x 30"     | 8      | 7/8" x 7"       | 20.50"           | 18.50"              |
| 16"           | 17.40 UFR1390-C-16-U          | 4" | 24-3/8"   | 28"   | 8                | 3/4" x 30"     | 8      | 7/8" x 7"       | 22.50"           | 20.50"              |
| 18"           | 19.50 UFR1390-C-18-U          | 5" | 26-11/16" | 32"   | 8                | 3/4" x 30"     | 8      | 7/8" x 7"       | 24.50"           | 22.50"              |
| 20"           | 21.60 UFR1390-C-20-U          | 6" | 28-3/16"  | 36"   | 8                | 3/4" x 30"     | 8      | 1-1/8" x 5-1/2" | 27.00"           | 25.00"              |
| 24"           | 25.80 UFR1390-C-24-U          | 8" | 33-7/8"   | 48"   | 12               | 3/4" x 30"     | 8      | 1-1/8" x 5-1/2" | 31.50"           | 29.50"              |
| 30"           | 32.00 UFR1390-C-30-U          | 7" | 42-7/8"   | 36"   | 12               | 3/4" x 30"     | 8      | 1-1/8" x 5"     | 38.16"           | 36.16"              |
| 36"           | 38.30 UFR1390-C-36-U          | 7" | 48-1/4"   | 36"   | 12               | 1" x 48"       | 12     | 1-1/8" x 5"     | 45.50"           | 43.50"              |

#### FEATURES

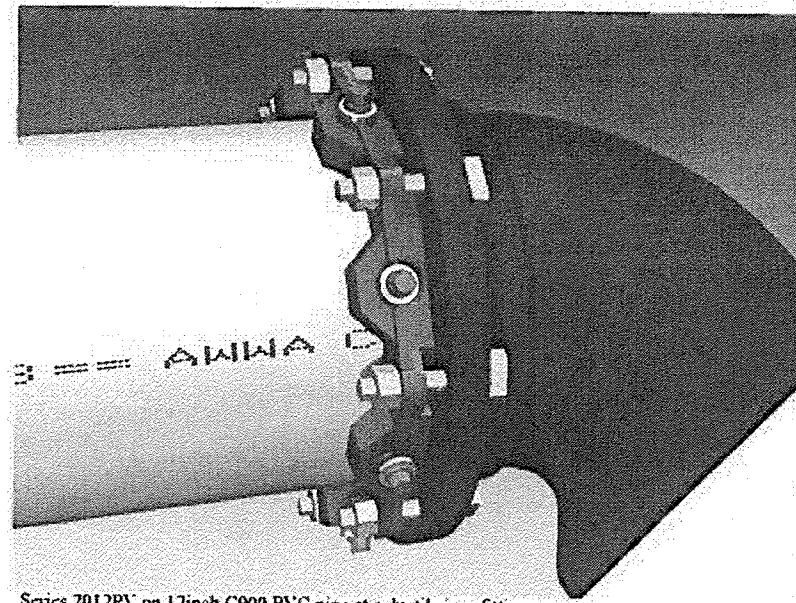
- 14" - 36" Sizes: Cast Ductile Iron per ASTM A536 Grade 65-45-12
- Side Clamping Bolts and Nuts
- Rods (included) - High strength, low alloy steel per ANSI / AWWA C111/A21.11
- Rated at full rated pressure of any class of C905 PVC Pipe, minimum 2:1 safety factor
- Casting manufactured in the U.S.A.

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.

**The Ford Meter Box Company, Inc.**  
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443  
Phone: 260-563-3171 / Fax: 800-826-3487  
Overseas Fax: 260-563-0167  
http://www.fordmeterbox.com

Submitted By: \_\_\_\_\_  
Date: 01/31/14

## Series 2000PV Mechanical Joint Restraint for PVC Pipe



Series 2012PV on 12 inch C900 PVC pipe at a ductile iron fitting.

| Nominal Pipe Size | Series Number | Shipping Weight |
|-------------------|---------------|-----------------|
| 3                 | 2003PV        | 7.0             |
| 4                 | 2004PV        | 8.8             |
| 6                 | 2006PV        | 12.1            |
| 8                 | 2008PV        | 16.3            |
| 10                | 2010PV        | 26.0            |
| 12                | 2012PV        | 31.4            |
| 14                | 2014PV        | 47.6            |
| 16                | 2016PV        | 52.8            |
| 18                | 2018PV        | 61.8            |
| 20                | 2020PV        | 70.9            |
| 24                | 2024PV        | 92.9            |
| 30                | 2030PV        | 128.5           |
| 36                | 2036PV        | 161.3           |
| 42                | 2242*         | 652.0           |
| 48                | 2248*         | 711.1           |

\*Restrainer for pipe size 42 inch and greater, please refer to Series 2200 Brochure found at [www.ebaa.com](http://www.ebaa.com)

U.S. Patent No.  
4627775 4896903 5071175

#### Features and Applications:

- For restraining plain end PVC pipe at mechanical joint fittings and appurtenances
- Sizes 3 inch through 36 inch  
Sizes 42 inch through 48 inch accommodated by Series 2200
- MEGA-BOND® Restraint Coating System  
For more information on MEGA-BOND, refer to [www.ebaa.com](http://www.ebaa.com)
- Constructed of ASTM A536 Ductile Iron
- The mechanical joint follower gland is incorporated into the restraint
- Accommodates full deflection of the mechanical joint on which it is used
- Heavy duty thick wall design
- Support Products Available:  
Split mechanical joint style available for 3 inch through 12 inch EBAA Series 2000SV
- Solid restraint ring harness available for C905 PVC pipe bells and C900 PVC pipe fittings EBAA Series 1500, 1600 and 2500
- Split restraint ring harness available for C900 and C905 PVC pipe bells and PVC fittings EBAA Series 1500, 1600 and 2500
- All 2000PV and related restraint products can be furnished as packaged accessories complete with appropriate restraint, gasket, lubrication and bolting hardware

For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774.

## Mechanical Joint Restraint for AWWA PVC Pipe Sample Specification

The text of the specification below can be downloaded as a Microsoft® Word Doc from our website [www.ebaa.com](http://www.ebaa.com)

Restraint devices for mechanical joint fittings and appurtenances conforming to either ANSI/AWWA C111/A21.11 or ANSI/AWWA C153/A2153, shall conform to the following:

Restraint devices for nominal pipe sizes 3 inch through 36 inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.

The devices shall have a working pressure rating equal to that found in the most current product brochure. Ratings are for water pressure and must include a minimum safety factor of 2:1 in all sizes.

Material  
Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.

Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) Specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis.

Traceability  
An identification number consisting of year, day, plant and shift (YDDDD) (plant designation) (Shift number), shall be cast into each gland body. All physical and chemical test results shall be recorded such that they can be accessed via the identification number on the casting. These Material

Traceability Records (MTRs) are to be made available, in hard copy, to the purchaser that requests such documentation and submits his gland body identification number. Production pieces that are too small to accommodate individual numbering, such as fasteners and wedges, shall be controlled in segregated inventory until such time as all quality control tests are passed. These component parts may then be released to a general inventory for final assembly and packaging. All components shall be manufactured and assembled in the United States. The purchaser shall, with reasonable notice, have the right to plant visitation at his/her expense.

Installation  
Mechanical joint restraint shall require conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly. Proper actuation of the gripping wedges shall be ensured with torque limiting twist off nuts.

Approvals  
Mechanical Joint Restraints shall be listed by Underwriters Laboratories in the 4 inch through 12 inch sizes. Mechanical Joint Restraints shall be Factory Mutual Approved in the 4 inch through 12 inch sizes. Mechanical Joint Restraints, 4 inch through 24 inch, shall meet or exceed the requirements of ASTM F1674 of the

For more information regarding MEGA-BOND, refer to the MEGA-BOND brochure or visit [www.ebaa.com](http://www.ebaa.com).

Support Products  
MEGALUO® Restraint for C905 PVC Pipe at Mechanical Joint Fittings  
Sizes 42 and 48 inch

MEGALUO® Restraint for C900 and C905 PVC Pipe at PVC Fittings  
Sizes 4 inch through 48

MEGALUO® Restraint for C905 PVC Pipe  
Sizes 14 inch through 48  
Sizes 4 through 12 accommodated by other Series 1500 or 1600

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

## Series A | Meter and Valve Boxes & Lids

### DFW

| Item No.       | Item Description                   | Unit Wgt. | Pallet Qty. | Base Price |
|----------------|------------------------------------|-----------|-------------|------------|
| DFW1200T11LID  | 12X17 RECT STD BLACK LID           | 2.25      | 216         | 16.75      |
| DFW1200T12BODY | 13X18X12 TT RECT BLACK BOX         | 7.20      | 54          | 26.10      |
| DFW1200T12J    | 13X18X12 TT RECT MBOX W/ BLACK LID | 9.45      | 54          | 28.85      |

1200TT Series  
12" Ribbed Standard Rectangular Box  
• Original design  
• Uses 1200 Series Lid  
• Overlapping lid (T-I-D) overlaps top edge of body  
• Body built with double ledge to support lid in two places instead of one  
• Ridge in the middle of the box adds additional support to side walls  
• Body has extra ribbing to support top ledge and bottom base  
• Body built with bolt down option  
• Inside Dimensions: 18-1/2" x 13-1/2"  
• Lid Options:  
A, C, D, E, K, M, N, R, T, U, Z, Colors

1300 Series  
12" Ribbed Rectangular Box  
• Original design  
• Uses 1200 Series Lid  
• Overlapping lid (T-I-D) sits in body like a drop-in lid  
• Body built with double ledge to support lid in two places instead of one  
• Ridge in the middle of the box adds additional support to side walls  
• Body has extra ribbing to support top ledge and bottom base  
• Body built with bolt down option  
• Inside dimensions: 19" x 13"  
• Lid Options:  
A, C, D, E, K, M, N, R, T, U, Z, Colors

For more information regarding MEGA-BOND, refer to the MEGA-BOND brochure or visit [www.ebaa.com](http://www.ebaa.com).

Support Products  
MEGALUO® Restraint for C905 PVC Pipe at Mechanical Joint Fittings  
Sizes 42 and 48 inch

MEGALUO® Restraint for C900 and C905 PVC Pipe at PVC Fittings  
Sizes 4 inch through 48

MEGALUO® Restraint for C905 PVC Pipe  
Sizes 14 inch through 48  
Sizes 4 through 12 accommodated by other Series 1500 or 1600

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

MEGALUO® Restraint for 12 inch C900 PVC Pipe at Ductile Iron Fittings  
Sizes 4 inch through 12

## Series A | Price List Key

### DFW

To create List Price, use the Base Price on Black Body & Solid Black Lid in each category and add the desired style and/or color to the Base Price.

| Color Key | Color  | Cost Body Only | Option Key | Option Description           | Cost       |
|-----------|--------|----------------|------------|------------------------------|------------|
| 1         | Black  | \$0.00         | A          | AMR Pad Locator              | Add \$5.95 |
| 2         | Green  | \$0.80         | C          | Cast Iron Reader             | Add \$5.70 |
| 3         | Blue   | \$0.80         | D          | Bolt Down (Add to Body Only) | Add \$1.95 |
| 4         | Gray   | \$1.70         | E          | Rebar Installed              | Add \$2.25 |
| 5         | Purple | \$1.45         | K          | Plastic Key Lock             | Add \$5.00 |
| 6         | Sand   | \$1.70         | M          | Magnet Detector              | Add \$2.10 |
| 7         | Red    | N/A            | N          | Houston Key Lock             | Add \$5.00 |
|           |        |                | R          | Plastic Reader               | Add \$1.40 |
|           |        |                | T          | Modified Touch Read Hole     | Add \$1.30 |
|           |        |                | U          | Small AMR Pad Locator        | Add \$3.15 |
|           |        |                | Z          | Drilled Touch Read Hole      | Add \$2.10 |

#### Lid Options |

| Item No.   | Item Description            | Base Price | Marking              | Lid Color              |
|------------|-----------------------------|------------|----------------------|------------------------|
| DFW1001LID | 6X9 ECONO BLACK LID "WATER" | 2.90       | Water Meter or Meter | Black, Blue, Grey, Red |
| DFW1003LID | 9X15 RECT BLACK LID         | 9.20       | Medidor de Agua      | Black                  |
| DFW1004LID | 10X12 ROUND BLACK LID       | 6.65       | ICV                  | Green, Sand, Cal Green |
| DFW1005LID | 12X17 RECT STD BLACK LID    | 16.75      | Portable             | Black, Blue            |
| DFW1006LID | 18X22 RECT JUMBO BLACK LID  | 27.60      | Rebar Water Meter    | Purple                 |

#### Accessories & Individual Parts |

|                |                                                           |       |      |        |
|----------------|-----------------------------------------------------------|-------|------|--------|
| DFW4X71        | 4X7 BLACK PLASTIC READER ONLY                             | 0.20  | 1000 | 10.75  |
| DFW4X7C        | 4X7 CAST IRON READER ONLY                                 | 2.00  | 1000 | 12.85  |
| DFW4X72        | 4X7 GREEN PLASTIC READER ONLY                             | 0.20  | 1000 | 11.60  |
| DFW4X73        | 4X7 BLUE PLASTIC READER ONLY                              | 0.20  | 1000 | 12.40  |
|                | 4X7 PURPLE PLASTIC READER ONLY                            | 0.20  | 1000 | 12.25  |
| CAST IRON LIDS |                                                           |       |      |        |
| EJ3213020      | 12" STD EJ DOMESTIC CAST IRON SOLID LID FOR 1200T         | 12.00 | 90   | 50.75  |
| EJ3240125      | 12" JUMBO DOMESTIC CAST IRON SOLID LID FOR 1500/1600      | 30.00 | 18   | 136.85 |
| LC154DFW       | 12" BLACK LID W/CAST IRON READER FOR 1200/1300 BODY       | 14.00 | 1    | 55.25  |
| LC125          | 12" BLACK CAST IRON LID WITH Q reader FOR 1200T BODY      | 18.00 | 1    | 63.96  |
| LC528T         | 12" CAST IRON LID W/2" TOUCH READ HOLE FOR 1200T BODY     | 14.00 | 1    | 47.75  |
| LC528W         | 12" SOLID CAST IRON LID FOR 1200T BODY                    | 14.00 | 1    | 45.50  |
| LC149DEW       | 12" STD OVERLAPPING SOLID LID IRON LID FOR 1200/1300 BODY | 14.00 | 1    | 50.80  |



INSTALLATION:

1. ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
2. CONTRACTOR TO ENSURE THAT STRUCTURAL BMPs ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.
3. CONTRACTOR MAY INSTALL THE BEST MANAGEMENT PRACTICES IN PHASES THAT COINCIDE WITH THE DISTURBANCE OF UP GRADIENT AREAS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
4. CONTRACTOR TO VERIFY SUFFICIENT VEGETATION IN AREAS DENOTED AS VEGETATED FILTER STRIP. IF INSUFFICIENT VEGETATION EXISTS, CONTRACTOR SHALL IMPLEMENT A DIFFERENT BEST MANAGEMENT PRACTICE AND WILL SHOW IT ON THIS PLAN WITH NOTATION IN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

MAINTENANCE AND INSPECTION:

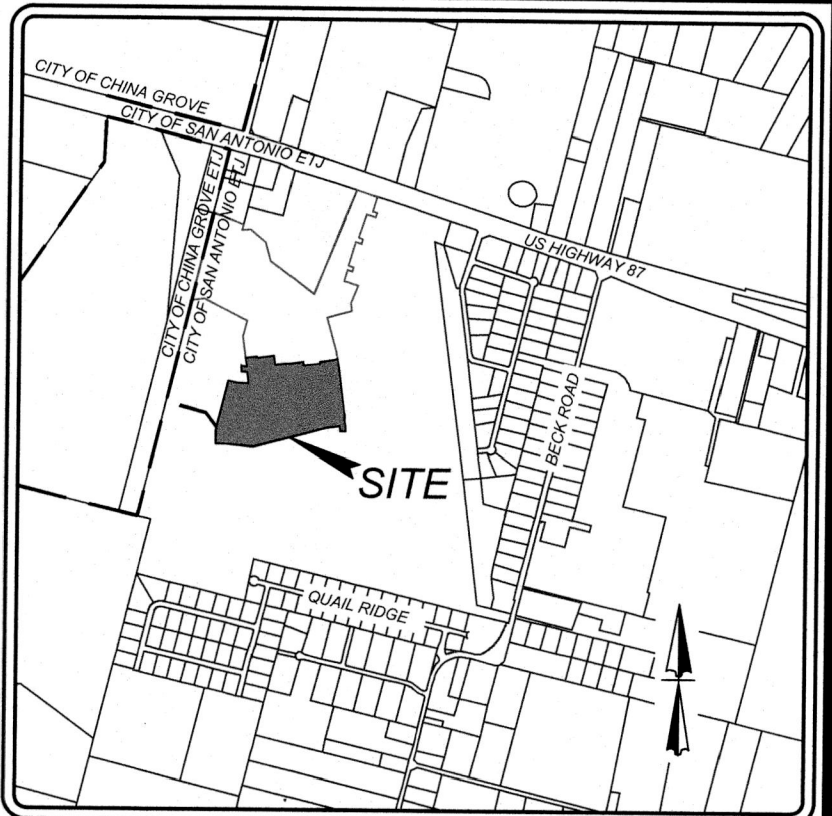
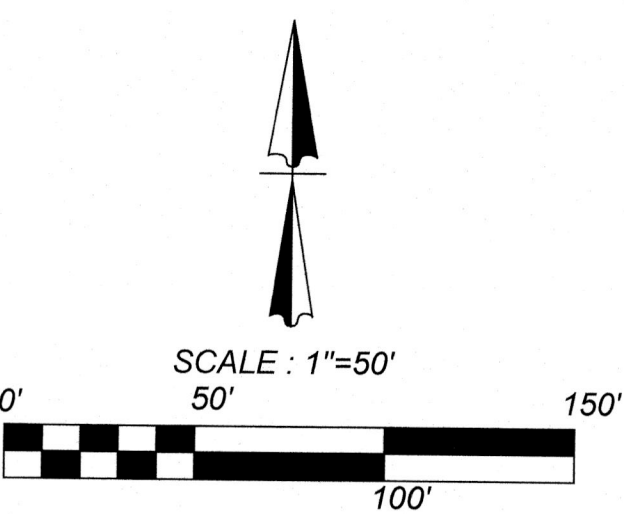
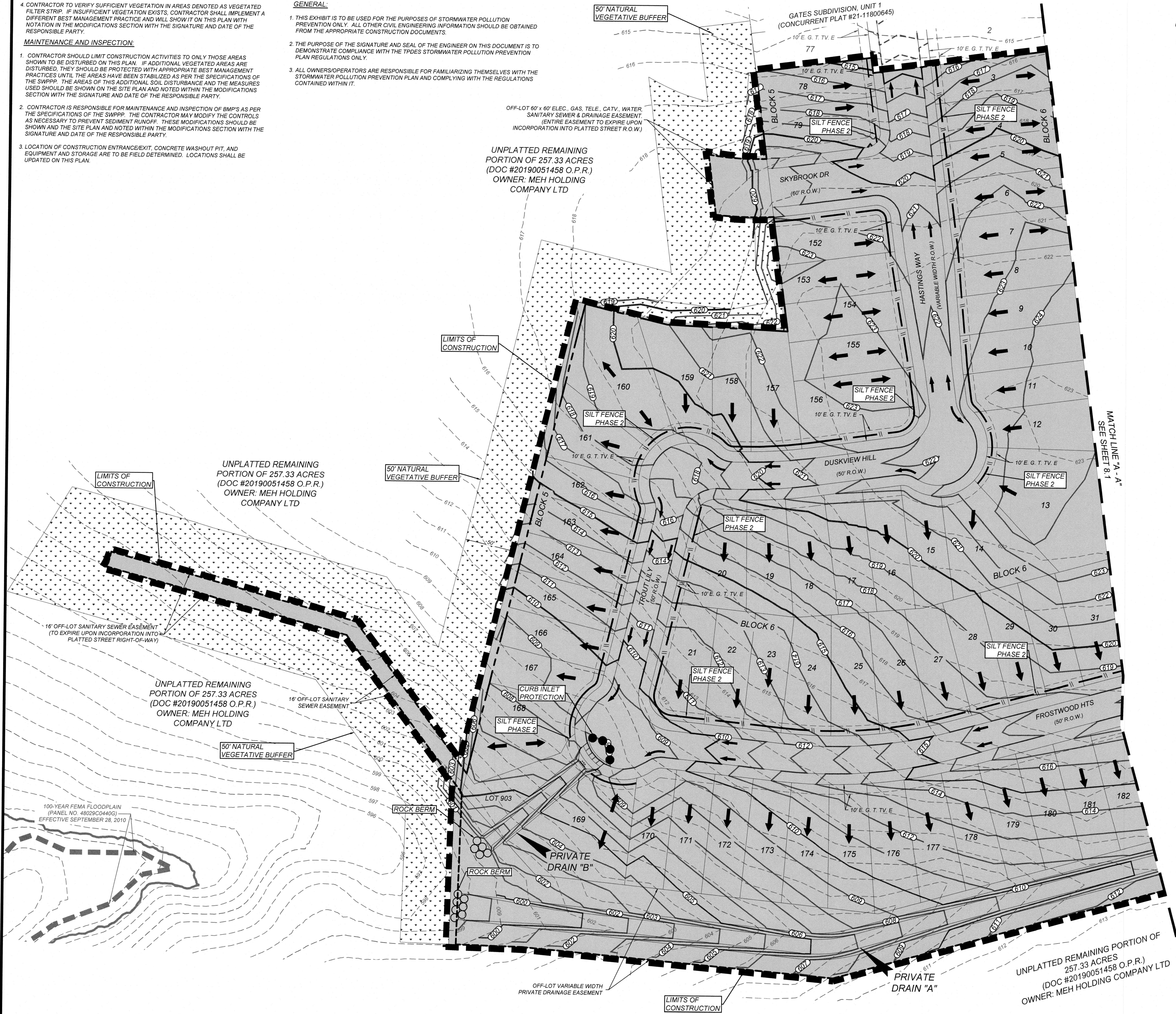
1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMPs AS PER THE SPECIFICATIONS OF THE SWPPP. THE CONTRACTOR MAY MODIFY THE CONTROLS AS NECESSARY TO PREVENT SEDIMENT RUNOFF. THESE MODIFICATIONS SHOULD BE SHOWN AND THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
3. LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.

PROJECT COMPLETION:

1. ALL DISTURBED AREAS ARE NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMPs AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).
2. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN PHASES IF ALL UPGRADIENT AREAS HAVE BEEN STABILIZED PER SWPPP AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
3. CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT).

GENERAL:

1. THIS EXHIBIT IS TO BE USED FOR THE PURPOSES OF STORMWATER POLLUTION PREVENTION ONLY. ALL OTHER CIVIL ENGINEERING INFORMATION SHOULD BE OBTAINED FROM THE APPROPRIATE CONSTRUCTION DOCUMENTS.
2. THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TDES STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.
3. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.



LOCATION MAP  
NOT-TO-SCALE

LEGEND

- LIMITS OF CONSTRUCTION
- - - - - EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOW ARROW
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA
- CONCRETE TRUCK WASHOUT PIT
- DISTURBED AREA
- ROCK BERM
- SILT FENCE PHASE 1 (SILT FENCE PHASE 2 ALONG THE FRONT OF LOTS TO BE INSTALLED AFTER PAVING)
- NATURAL VEGETATIVE BUFFER
- INLET WITH PROTECTION (GRAVEL FILTERS BAGS)

COORDINATION NOTE:

1. CONTACT TIME WARNER TO COORDINATE CABLE TV SERVICE. (210) 244-0500
2. CONDUIT FOR ELECTRICAL SERVICE. CONFIRM REQUIREMENTS AND COORDINATE WITH CPS FOR INSPECTION. (210) 353-2246.
3. CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.
4. CONTRACTOR TO COORDINATE WITH CPS PRIOR TO CONSTRUCTION TO PLAN ELECTRIC SERVICE.
5. CONTRACTOR TO COORDINATE WITH SAWS TO PLAN WATER AND SANITARY SEWER SERVICES (210) 704-7297
6. CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

SW3P MODIFICATIONS

| DATE | SIGNATURE | DESCRIPTION |
|------|-----------|-------------|
|      |           |             |
|      |           |             |
|      |           |             |
|      |           |             |
|      |           |             |
|      |           |             |

GATES SUBDIVISION UNIT 2  
BEXAR COUNTY, TX  
STORM WATER POLLUTION PREVENTION PLAN  
(SHEET 1 OF 2)

PLAT NO.  
22-11800017  
JOB NO. 205-43-05  
DATE: NOVEMBER 2021  
DRAWN: OM CHECKED: CL  
SHEET NUMBER:  
8.0



**K&W**  
ENGINEERS + SURVEYING  
3421 Passano Pkwy, Suite 200, San Antonio, TX 78231  
Phone #: (210) 979-8444 • Fax #: (210) 979-8441  
E-mail: info@kw-engineers.com • TBCS Form #: 1012200



1. ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.

2. CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.

3. CONTRACTOR MAY INSTALL THE BEST MANAGEMENT PRACTICES IN PHASES THAT COINCIDE WITH THE DISTURBANCE OF UP GRADIENT AREAS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

4. CONTRACTOR TO VERIFY SUFFICIENT VEGETATION IN AREAS DENOTED AS VEGETATED FILTER STRIP. IF INSUFFICIENT VEGETATION EXISTS, CONTRACTOR SHALL IMPLEMENT A DIFFERENT BEST MANAGEMENT PRACTICE AND WILL SHOW IT ON THIS PLAN WITH NOTATION IN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

1. ALL DISTURBED AREAS ARE NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMP'S AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).

2. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN PHASES IF ALL UPGRADIENT AREAS HAVE BEEN STABILIZED PER SWPPP AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

3. CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT).

1. THIS EXHIBIT IS TO BE USED FOR THE PURPOSES OF STORMWATER POLLUTION PREVENTION ONLY. ALL OTHER CIVIL ENGINEERING INFORMATION SHOULD BE OBTAINED FROM THE APPROPRIATE CONSTRUCTION DOCUMENTS.

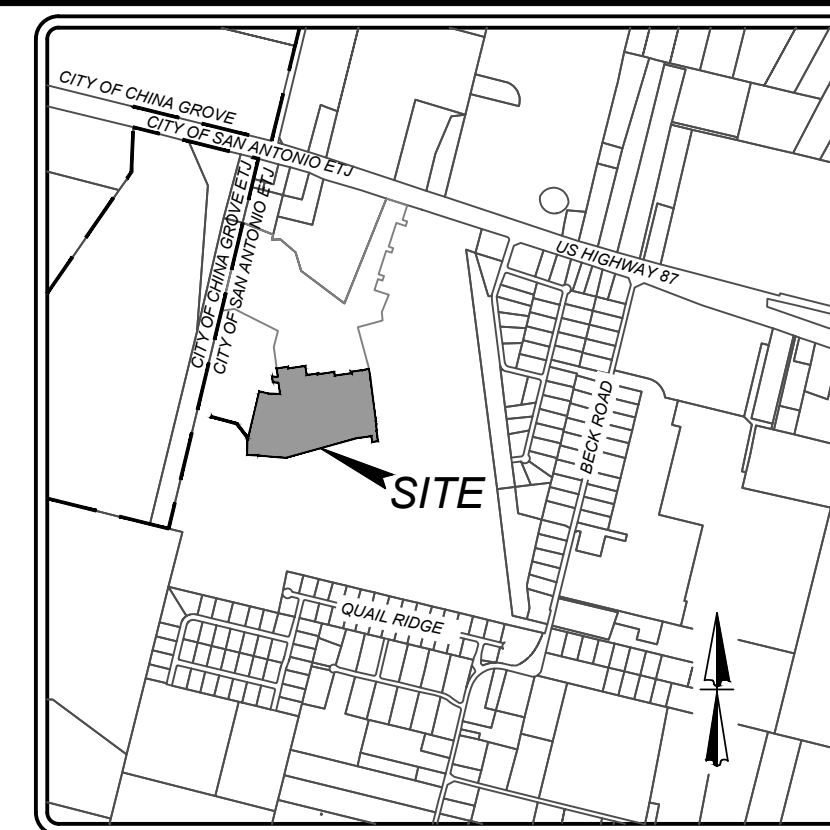
2. THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TPDES STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.

3. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.

1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S AS PER THE SPECIFICATIONS OF THE SWPPP. THE CONTRACTOR MAY MODIFY THE CONTROLS AS NECESSARY TO PREVENT SEDIMENT RUNOFF. THESE MODIFICATIONS SHOULD BE SHOWN AND THE SITE PLAN AND NOTES WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

3. LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.



LOCATION MAP  
NOT-TO-SCALE

**LEGEND**

- LIMITS OF CONSTRUCTION
- 570
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOW ARROW
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
- CONCRETE TRUCK WASHOUT PIT
- DISTURBED AREA
- ROCK BERM
- SILT FENCE PHASE 1  
(SILT FENCE PHASE 2 ALONG THE FRONT OF LOTS TO BE INSTALLED AFTER PAVING)
- NATURAL VEGETATIVE BUFFER
- INLET WITH PROTECTION  
(GRAVEL FILTERS BAGS)

1. CONTACT TIME WARNER TO COORDINATE CABLE TV SERVICE. (210) 244-0500
2. CONDUIT FOR ELECTRICAL SERVICE. CONFIRM REQUIREMENTS AND COORDINATE WITH CPS FOR INSPECTION. (210) 353-2246.
3. CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.
4. CONTRACTOR TO COORDINATE WITH CPS PRIOR TO CONSTRUCTION TO PLAN ELECTRIC SERVICE
5. CONTRACTOR TO COORDINATE WITH SAWS TO PLAN WATER AND SANITARY SEWER SERVICES (210) 704-7297
6. CONTRACTOR SHALL CONTACT 1-800-DIG-TESS AT MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

[illegible]

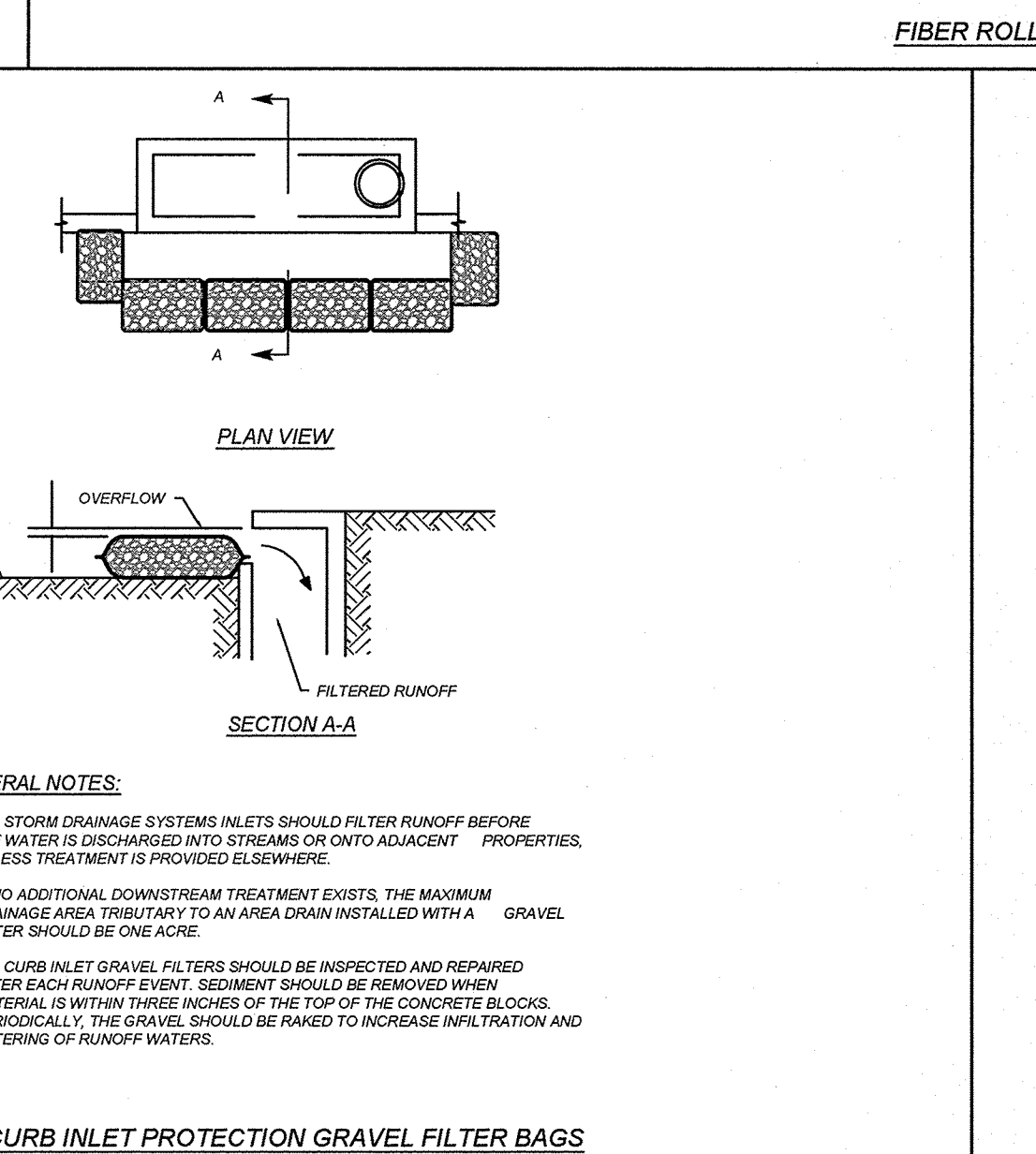
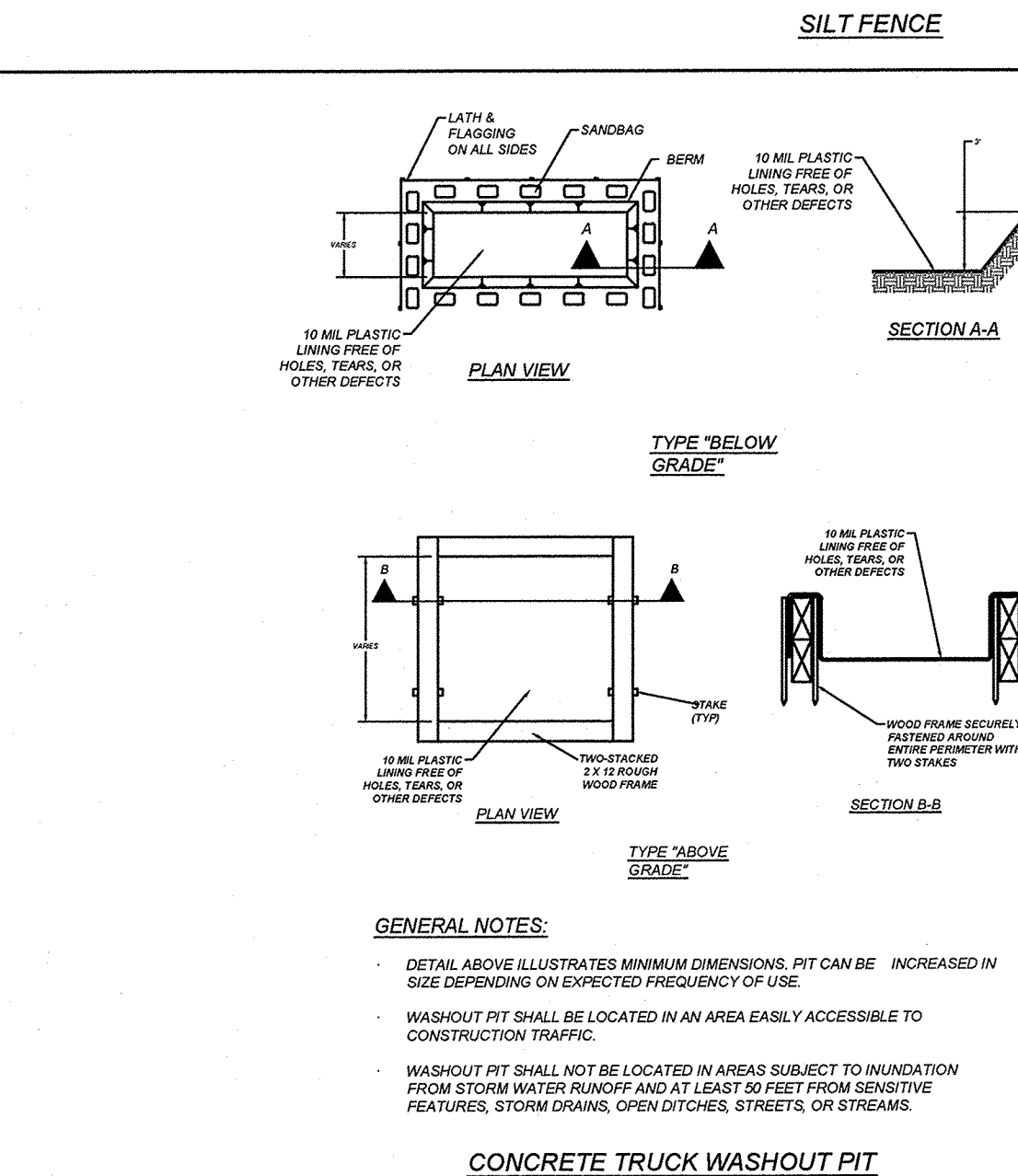
**GATES SUBDIVISION UNIT 2**  
BEXAR COUNTY, TX  
**STORM WATER POLLUTION PREVENTION PLAN**  
(SHEET 2 OF 2)

PLAT NO.  
22-11800017

JOB NO.:205-43-05  
DATE: NOVEMBER 2021  
DRAWN:OM CHECKED:CL  
**SHEET NUMBER:**

## 8.1





The technical drawings illustrate the construction and installation of Type 4 Sack Gabions.   
**SECTION A-A** shows a cross-section of a gabion unit, which is a rectangular box made of galvanized steel wire mesh. The top width is labeled as 3' 6" or 6'. A detail view shows the mesh structure with a 2" diameter hole.   
**SECTION B-B** shows a cross-section of the gabion unit installed on a 3/4" diameter rebar stake. The unit is shown with a 2" diameter hole in the mesh.   
**PLAN VIEW** shows the gabion unit installed in a trench. The unit is labeled "Sack Gabions" and the "Direction Of Flow" is indicated by an arrow pointing from left to right. The unit is shown with a 2" diameter hole in the mesh.

**TYPE 4 SACK GABIONS**