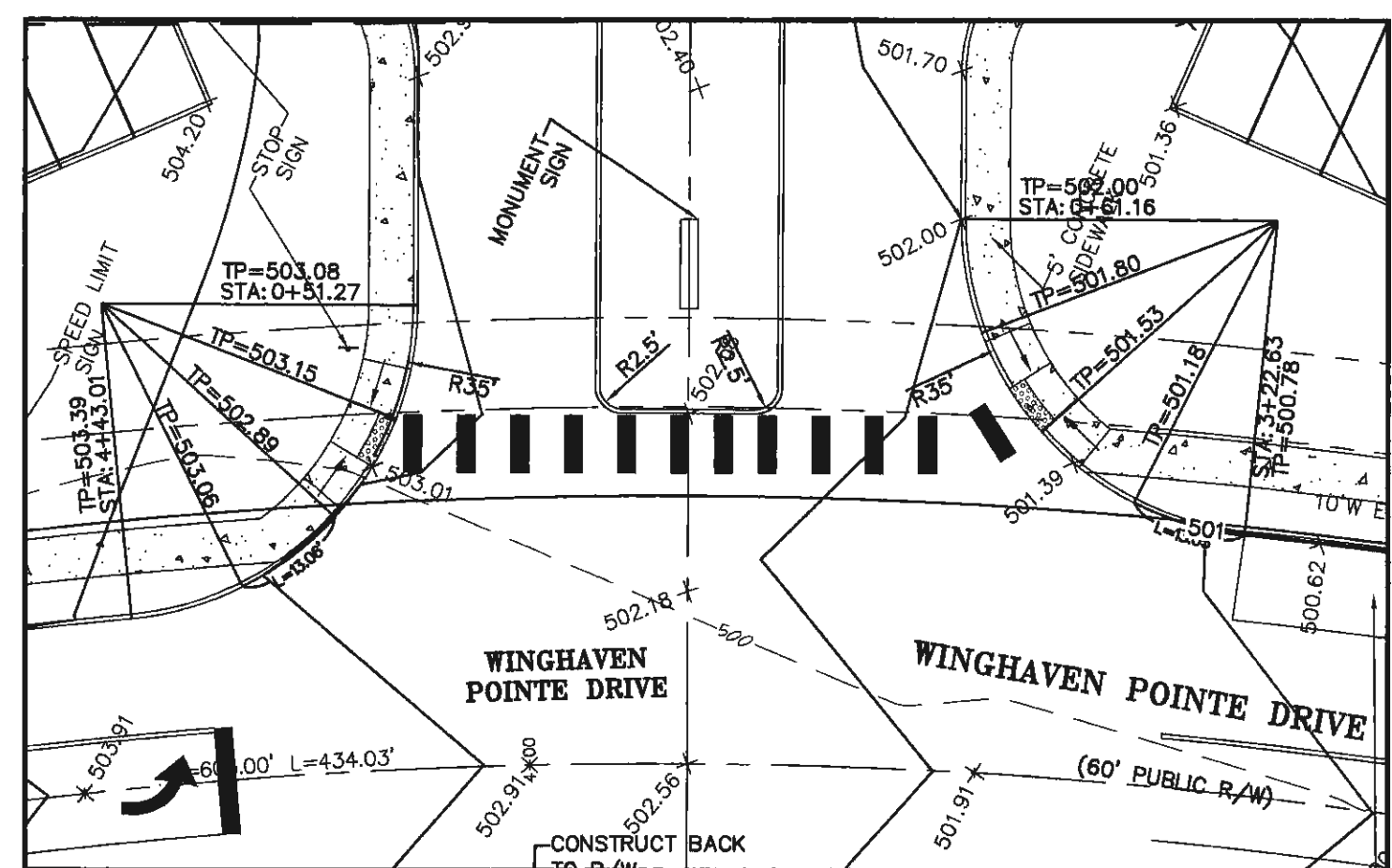


(PUBLIC)
STORM SEWER PROFILES
SCALES:
HORIZ. 1"=30'
VERT. 1"=10'

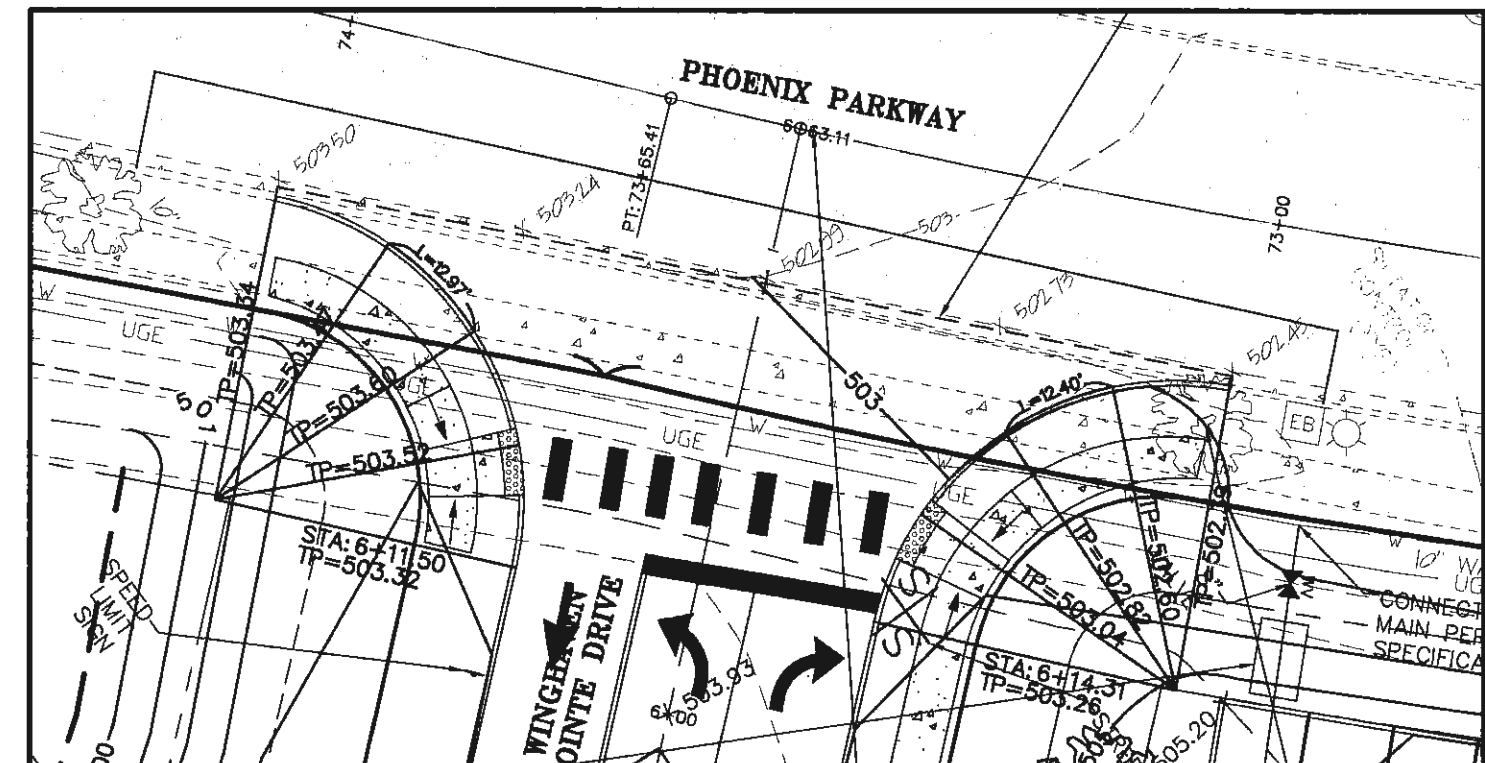
BOX PROJECT NAME : WINGHAVEN POINT
BOX PROJECT NO. : 14-16403
DESIGN DATE : 06/27/2016
FILENAME: 16403

| UPP STR | LOW STR | L | DIA | UPPER FL LN | LOWER FL LN | PS | UPPER ST EL | DEPTH HY GR | UPPER HY EL | LOWER HY EL | HYDR GRADE | FR HEAD | VEL | VEL HEAD | JUNC LOSS | TURN LOSS | CURVE LOSS | STR GRADE | INL CAP | DR AREA | PI | Q | TQ | PIPE CAP | REMARKS |
|---------|---------|-----|-----|-------------|-------------|------|-------------|-------------|-------------|-------------|------------|---------|------|----------|-----------|-----------|------------|-----------|---------|---------|------|--------|--------|----------|---------|
| CI41 | CI40 | 48 | 15 | 494.00 | 493.52 | 1.00 | 498.84 | 4.01 | 494.83 | 494.77 | .00070 | 0.03 | 1.38 | 0.03 | 0.03 | 0.00 | 0.00 | LOW | 3.40 | 0.52 | 2.86 | 1.69 | 1.69 | 6.46 | 1 |
| CI40 | MH38 | 49 | 15 | 493.42 | 492.90 | 1.05 | 498.84 | 4.51 | 494.33 | 494.15 | .00180 | 0.09 | 2.25 | 0.08 | 0.07 | 0.02 | 0.00 | LOW | 3.40 | 0.33 | 2.86 | 1.07 | 2.76 | 6.62 | 2 |
| HW39 | MH38 | 18 | 54 | 489.27 | 489.25 | 0.11 | 499.00 | 4.38 | 494.62 | 493.75 | .00340 | 0.06 | 7.20 | 0.81 | 0.81 | 0.00 | 0.00 | HW | 0.00 | 4.61 | 3.85 | 114.54 | 114.54 | 64.82 | 3 |
| MH38 | HW37 | 71 | 54 | 489.25 | 489.18 | 0.10 | 499.17 | 5.42 | 493.75* | 492.09 | .00360 | 0.25 | 7.38 | 0.84 | 0.05 | 0.06 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 117.30 | 61.92 | 4 | |
| HW36 | HW35A | 86 | 54 | 488.15 | 488.06 | 0.10 | 499.50 | 5.63 | 493.87 | 492.56 | .00410 | 0.35 | 7.87 | 0.96 | 0.06 | 0.00 | 0.00 | HW | 0.00 | 3.23 | 2.85 | 7.92 | 125.22 | 63.57 | 5 |
| HW35A | HW35 | 66 | 54 | 488.04 | 487.98 | 0.09 | 498.98 | 6.44 | 492.54* | 491.04 | .00410 | 0.27 | 7.87 | 0.96 | 0.00 | 0.00 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 125.22 | 59.35 | 6 | |
| AI34 | MH33 | 123 | 15 | 495.95 | 494.72 | 1.00 | 500.10 | 3.42 | 496.68* | 495.97 | .00420 | 0.52 | 3.42 | 0.18 | 0.18 | 0.00 | 0.00 | 4S | 11.00 | 1.70 | 2.86 | 4.20 | 4.20 | 6.47 | 7 |
| MH33 | YD32 | 60 | 15 | 494.62 | 494.02 | 1.00 | 501.06 | 5.15 | 495.91 | 495.44 | .00420 | 0.25 | 3.42 | 0.18 | 0.11 | 0.11 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 4.20 | 6.46 | 8 | |
| YD32 | GI24 | 83 | 15 | 493.92 | 493.09 | 1.00 | 500.60 | 5.16 | 495.44 | 494.97 | .00500 | 0.42 | 3.73 | 0.22 | 0.05 | 0.00 | 0.00 | YD | 0.00 | 0.13 | 2.86 | 0.38 | 4.58 | 6.46 | 9 |
| AI31 | GI22 | 133 | 12 | 493.00 | 490.16 | 2.14 | 496.90 | 2.77 | 494.13 | 492.93 | .00730 | 0.97 | 3.88 | 0.23 | 0.23 | 0.00 | 0.00 | 4S | 11.00 | 1.04 | 2.86 | 3.05 | 3.05 | 5.21 | 10 |
| GI30 | MH29 | 52 | 15 | 498.12 | 497.86 | 0.50 | 503.50 | 4.35 | 499.15 | 499.11 | .00040 | 0.02 | 1.02 | 0.02 | 0.02 | 0.00 | 0.00 | LOW | 3.40 | 0.34 | 2.86 | 1.25 | 1.25 | 4.56 | 11 |
| MH29 | GI28 | 128 | 15 | 497.76 | 497.12 | 0.50 | 504.21 | 5.77 | 498.44 | 498.37 | .00040 | 0.05 | 1.02 | 0.02 | 0.01 | 0.01 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 1.25 | 4.58 | 12 | |
| GI28 | GI27 | 217 | 18 | 497.02 | 495.94 | 0.50 | 503.00 | 5.34 | 497.66* | 497.44 | .00070 | 0.14 | 1.53 | 0.04 | 0.03 | 0.00 | 0.00 | LOW | 3.40 | 0.42 | 2.86 | 1.40 | 2.71 | 7.42 | 13 |
| GI27 | MH26 | 116 | 24 | 495.84 | 495.26 | 0.50 | 500.30 | 2.88 | 497.42 | 497.26 | .00080 | 0.09 | 2.05 | 0.07 | 0.06 | 0.01 | 0.00 | LOW | 3.40 | 1.05 | 2.86 | 3.74 | 6.45 | 16.03 | 14 |
| MH26 | GI25 | 125 | 24 | 495.16 | 494.54 | 0.50 | 500.90 | 4.16 | 496.74 | 496.54 | .00080 | 0.10 | 2.05 | 0.07 | 0.05 | 0.05 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 6.45 | 15.94 | 15 | |
| GI25 | GI24 | 270 | 24 | 494.44 | 493.09 | 0.50 | 499.40 | 4.93 | 495.57 | 495.09 | .00150 | 0.23 | 3.23 | 0.16 | 0.03 | 0.00 | 0.00 | LOW | 3.40 | 0.65 | 2.86 | 2.38 | 8.83 | 16.00 | 16 |
| GI24 | GI23 | 199 | 30 | 492.99 | 491.99 | 0.50 | 499.70 | 4.73 | 494.97 | 494.49 | .00140 | 0.27 | 3.08 | 0.15 | 0.06 | 0.15 | 0.00 | LOW | 3.40 | 0.45 | 2.86 | 1.69 | 15.10 | 29.11 | 17 |
| GI23 | GI22 | 347 | 30 | 491.89 | 490.16 | 0.50 | 498.90 | 5.27 | 493.63 | 492.93 | .00180 | 0.63 | 3.57 | 0.20 | 0.07 | 0.00 | 0.00 | LOW | 3.40 | 0.66 | 2.86 | 2.40 | 17.50 | 28.95 | 18 |
| GI22 | GI21 | 184 | 30 | 490.06 | 489.14 | 0.50 | 497.70 | 4.77 | 492.93 | 491.90 | .00350 | 0.65 | 4.96 | 0.38 | 0.23 | 0.15 | 0.00 | LOW | 3.40 | 1.03 | 2.86 | 3.80 | 24.35 | 29.04 | 19 |
| GI21 | AI20 | 79 | 36 | 489.04 | 488.64 | 0.50 | 497.20 | 5.30 | 491.90 | 491.64 | .00170 | 0.13 | 3.89 | 0.23 | 0.00 | 0.13 | 0.00 | LOW | 3.40 | 0.85 | 2.86 | 3.13 | 27.48 | 47.32 | 20 |
| AI20 | FE19 | 108 | 36 | 488.54 | 488.00 | 0.50 | 499.40 | 7.98 | 491.42 | 491.00 | .00170 | 0.19 | 3.92 | 0.24 | 0.12 | 0.11 | 0.00 | 4S | 11.00 | 0.09 | 2.86 | 0.23 | 27.71 | 47.07 | 21 |
| GI18 | GI17 | 91 | 12 | 496.05 | 495.14 | 1.00 | 500.70 | 3.63 | 497.07 | 496.29 | .00640 | 0.58 | 3.63 | 0.20 | 0.20 | 0.00 | 0.00 | LOW | 3.40 | 0.77 | 2.86 | 2.85 | 2.85 | 3.57 | 22 |
| GI17 | MH11 | 108 | 15 | 495.05 | 493.97 | 1.00 | 501.20 | 4.91 | 496.29 | 495.93 | .00340 | 0.36 | 3.06 | 0.14 | 0.00 | 0.00 | 0.00 | LOW | 3.40 | 0.24 | 2.86 | 0.90 | 3.75 | 6.47 | 23 |
| YD16 | MH9 | 102 | 12 | 495.90 | 494.88 | 1.00 | 499.90 | 3.72 | 496.18* | 495.88 | .00030 | 0.03 | 0.80 | 0.01 | 0.01 | 0.00 | 0.00 | YD | 0.00 | 0.21 | 2.86 | 0.63 | 0.63 | 3.55 | 24 |
| GI15 | GI8 | 60 | 12 | 495.40 | 494.80 | 0.99 | 499.40 | 3.02 | 496.38 | 495.80 | .00630 | 0.38 | 3.60 | 0.20 | 0.20 | 0.00 | 0.00 | LOW | 3.40 | 0.77 | 2.86 | 2.83 | 3.55 | 25 | |
| AI14 | AI13 | 190 | 15 | 495.74 | 494.79 | 0.50 | 501.90 | 4.97 | 496.93 | 496.57 | .00150 | 0.29 | 2.07 | 0.07 | 0.07 | 0.00 | 0.00 | 4S | 11.00 | 0.88 | 2.86 | 2.54 | 2.54 | 4.57 | 26 |
| AI13 | YD12 | 63 | 15 | 494.69 | 494.38 | 0.49 | 501.20 | 4.63 | 496.57 | 496.19 | .00330 | 0.21 | 3.04 | 0.14 | 0.12 | 0.05 | 0.00 | 4S | 11.00 | 0.37 | 2.86 | 1.19 | 3.73 | 4.53 | 27 |
| YD12 | MH11 | 62 | 15 | 494.28 | 493.97 | 0.50 | 501.18 | 4.99 | 496.19 | 495.09 | .00380 | 0.23 | 3.23 | 0.16 | 0.03 | 0.00 | 0.00 | YD | 0.00 | 0.08 | 2.86 | 0.23 | 3.96 | 4.53 | 28 |
| MH11 | GI10 | 95 | 18 | 493.87 | 493.40 | 0.50 | 500.72 | 4.79 | 495.93 | 495.10 | .00540 | 0.51 | 4.36 | 0.30 | 0.21 | 0.11 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 7.71 | 7.41 | 29 | |
| GI10 | MH9 | 85 | 24 | 493.30 | 492.87 | 0.50 | 499.20 | 4.10 | 495.10 | 494.87 | .00200 | 0.17 | 3.22 | 0.16 | 0.00 | 0.06 | 0.00 | LOW | 3.40 | 0.64 | 2.86 | 2.40 | 10.11 | 16.07 | 30 |
| MH9 | GI8 | 181 | 24 | 492.77 | 491.87 | 0.50 | 500.28 | 5.92 | 494.36 | 493.91 | .00230 | 0.41 | 3.42 | 0.18 | 0.03 | 0.01 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 10.74 | 15.96 | 31 | |
| GI8 | GI7 | 195 | 24 | 491.77 | 490.79 | 0.50 | 499.60 | 5.69 | 493.91 | 492.79 | .00410 | 0.79 | 4.60 | 0.33 | 0.20 | 0.13 | 0.00 | LOW | 3.40 | 0.23 | 2.86 | 0.87 | 14.44 | 16.04 | 32 |
| GI7 | GI6 | 145 | 24 | 490.69 | 489.97 | 0.50 | 498.80 | 6.05 | 492.75 | 491.97 | .00470 | 0.69 | 4.96 | 0.38 | 0.08 | 0.01 | 0.00 | LOW | 3.40 | 0.30 | 2.86 | 1.14 | 15.58 | 15.95 | 33 |
| GI6 | GI5 | 152 | 30 | 489.87 | 489.11 | 0.50 | 498.10 | 6.24 | 491.86 | 491.61 | .00170 | 0.25 | 3.41 | 0.18 | 0.00 | 0.00 | 0.00 | LOW | 3.40 | 0.33 | 2.86 | 1.17 | 16.75 | 29.03 | 34 |
| GI5 | MH4 | 124 | 30 | 489.01 | 488.39 | 0.50 | 497.20 | 5.92 | 491.28 | 490.89 | .00220 | 0.28 | 3.95 | 0.24 | 0.10 | 0.01 | 0.00 | LOW | 3.40 | 0.71 | 2.86 | 2.65 | 19.40 | 28.97 | 35 |
| MH4 | FE3 | 57 | 30 | 488.29 | 488.00 | 0.51 | 498.15 | 7.44 | 490.71 | 490.50 | .00220 | 0.13 | 3.95 | 0.24 | 0.04 | 0.04 | 0.00 | MH | 0.00 | 0.00 | 0.00 | 19.40 | 29.17 | 36 | |
| OS2 | FE1 | 75 | 36 | 483.85 | 483.10 | 1.00 | 494.00 | 6.61 | 487.39 | 486.10 | .00600 | 0.45 | 7.34 | 0.84 | 0.84 | 0.00 | 0.00 | OS | 0.00 | 2.26 | 2.86 | 4.74 | 51.85 | 66.59 | 37 |

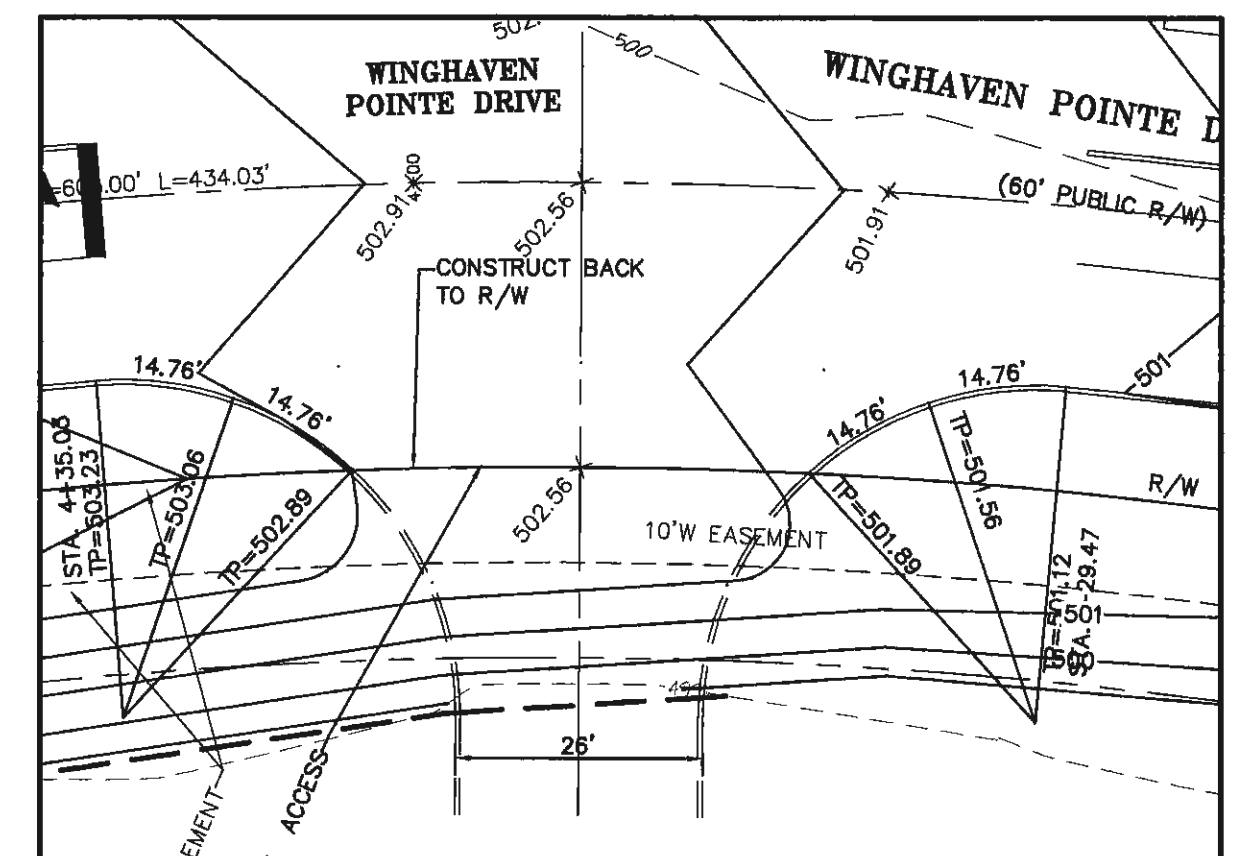
* INDICATES CRITICAL DEPTH



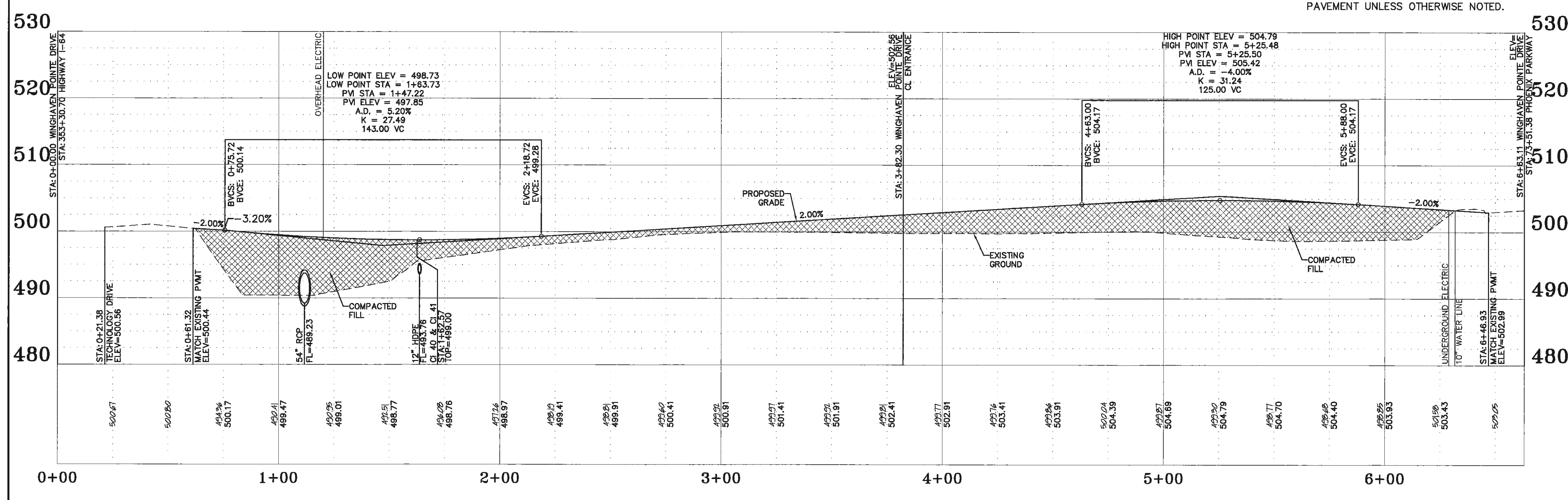
INTERSECTION DETAIL
SCALE: 1"=20'



INTERSECTION DETAIL
SCALE: 1"=20'



COMMERCIAL LOT INTERSECTION DETAIL
SCALE: 1"=20'



WINGHAVEN POINTE DRIVE
SCALES:
HORIZ. 1"=30'
VERT. 1"=10'

NOTE: ALL STORM INLETS TO HAVE FILTREX FILTER OR EQUAL. SEE DETAIL ON SHEET 38.

PROJECT TITLE:
ALTAIR AT THE PRESERVE
(FKA WINGHAVEN POINT)

ENGINEERING
PLANNING
SURVEYING
221 Point View Blvd.
St. Charles, MO 63801
636-928-5562
FAX 928-1718



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STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
CLIFFORD L. HEITMANN
NUMBER E-29817
CLIFFORD L. HEITMANN
CIVIL ENGINEER
E29817

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REVISIONS

| DATE | BY | REVISION |
|------------|--------------------|--------------|
| 04/25/2016 | DCSD & PWS02 | COMMENTS |
| 05/18/2016 | CITY REVIEW | CITY REVIEW |
| 06/15/2016 | CITY REVIEW & DCSD | COMMENTS |
| 07/29/2016 | CITY REVIEW | CITY REVIEW |
| 08/04/2016 | MODOT REVIEW | MODOT REVIEW |
| 08/29/2017 | MODOT REVIEW | MODOT REVIEW |

Developer / Owner:
ROLWES DEVELOPMENT, L.L.C.
13100 MANCHESTER ROAD, SUITE 65
ST. LOUIS, MISSOURI 63131
314-821-9600

STORM SEWER PROFILES,
HYDRAULICS AND STREET PROFILE

P+Z No. #9831.65.02
City No. #
Page No. 24 of 38

Box Project # 14-16403 Issue Date: 03/18/2016