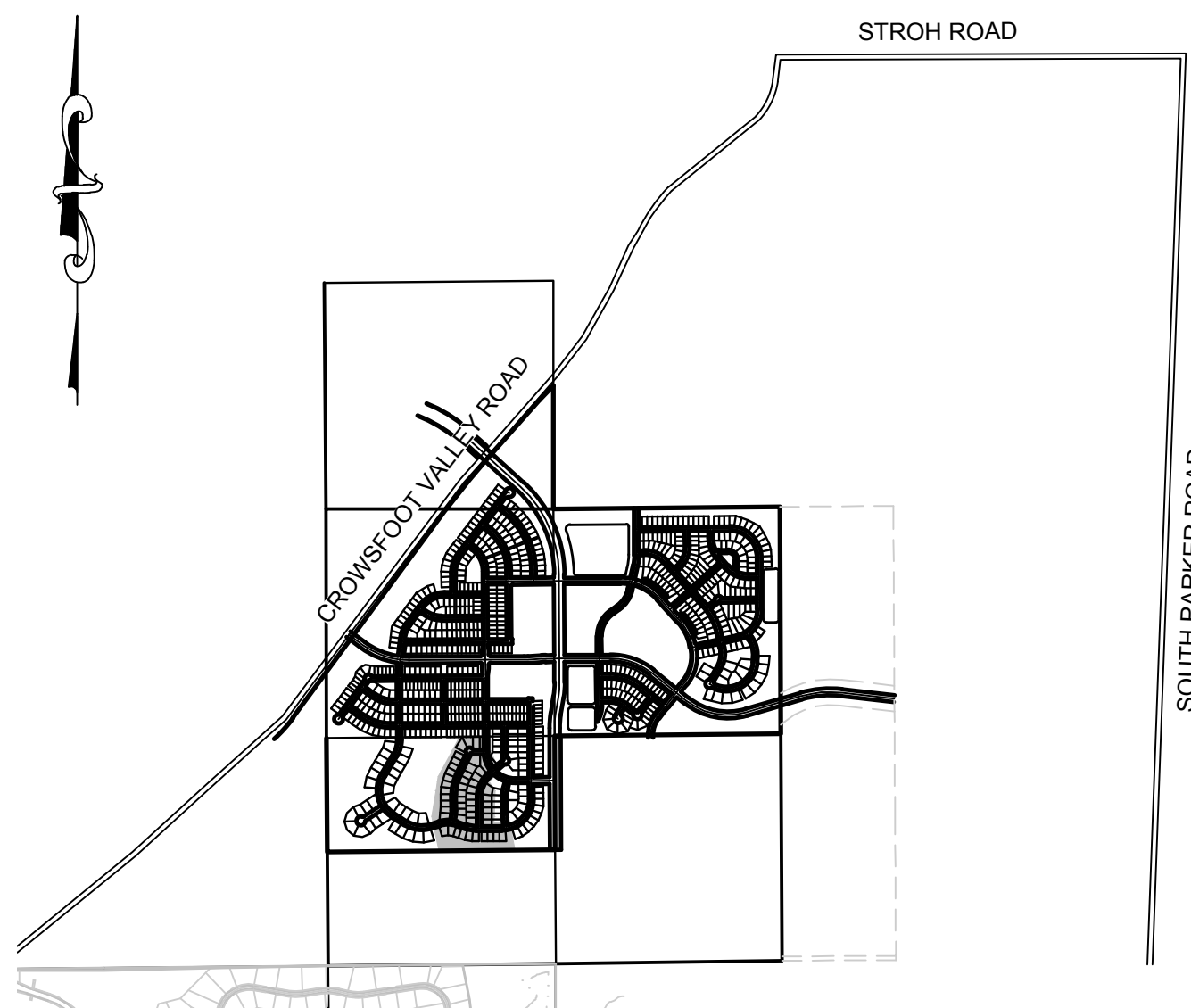


TRAILS AT CROWFOOT FILING 7

PARKER WATER AND SANITATION CONSTRUCTION PLANS

SECTIONS 4, 8, AND 9 TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN COUNTY OF DOUGLAS, STATE OF COLORADO

| Sheet List Table | |
|------------------|-----------------------------------|
| Sheet Number | Sheet Title |
| 1 | COVER SHEET |
| 2 | PARKER WATER AND SANITATION NOTES |
| 3 | AREA UTILITY PLAN |
| 4 | SANITARY P&P SHASTA DAISY POINT |
| 5 | SANITARY P&P SHASTA DAISY POINT |
| 6 | SANITARY P&P HOP CLOVER STREET |
| 7 | WATER P&P SHASTA DAISY POINT |
| 8 | WATER P&P HOP CLOVER STREET |
| 9 | SANITARY SEWER DETAILS |
| 10 | SANITARY SEWER DETAILS |
| 11 | SANITARY SEWER DETAILS |
| 12 | WATER DETAILS |
| 13 | WATER DETAILS |
| 14 | WATER DETAILS |
| 15 | WATER DETAILS |
| 16 | WATER DETAILS |
| 17 | WATER DETAILS |
| 18 | WATER DETAILS |



VICINITY MAP
SCALE: 1" = 2000'

| MATERIALS LIST | | |
|--|----------|------|
| DESCRIPTION | QUANTITY | UNIT |
| 8" WATERPIPE (C900) | 1,602 | L.F. |
| 6" WATERPIPE (DIP-FIRE HYDRANT LINE) | 76 | L.F. |
| 8" GATE VALVE W/ BOX | 1 | EA. |
| 6" GATE VALVE W/ BOX | 3 | EA. |
| 8" MISC. VALVES | 11 | EA. |
| AIR/VAC VALVE | 2 | EA. |
| FIRE HYDRANT WITH 6" LEAD | 3 | EA. |
| CONNECTION TO EXISTING MAIN | 4 | EA. |
| WATER SERVICE LATERAL W/ WATER METER AND PIT | 49 | EA. |
| 8" SEWER (SDR-35 PVC) | 1,116 | L.F. |
| 4' DIA. MANHOLE | 8 | EA. |
| SEWER SERVICE LATERAL W/ WYE TAP | 49 | EA. |
| CONNECTION TO EXISTING MAIN | 5 | EA. |

FIRE DEPARTMENT APPROVAL
ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO WATER UTILITY STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE TOWN OF PARKER, COMMUNITY DEVELOPMENT DEPARTMENT.

[Signature] 02/12/2020
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENT OF NFPA 24 WHEN SUBMITTING FOR REVIEW.)

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TOWN OF PARKER, DIRECTOR OF ENGINEERING _____ DATE _____

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REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.

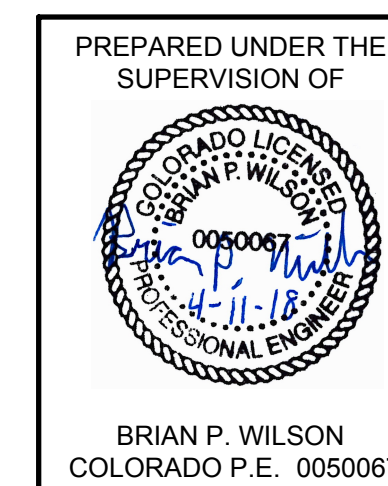
BY: *[Signature]*
(DISTRICT REPRESENTATIVE)

DATE SIGNED: 02/20/2020

APPROVED FOR CONSTRUCTION:
PARKER WATER AND SANITATION DISTRICT

BY: *[Signature]*
(DISTRICT ENGINEER)

DATE SIGNED: 02/20/2020



BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

DEVELOPER

HR 935 LLC
7353 SOUTH ALTON WAY
CENTENNIAL, CO 80112
TEL: (303) 770-9111
CONTACT: MATT JANKE

PLANNER/ LANDSCAPE DESIGNER:

PCS GROUP, INC.
200 KALAMATH STREET
DENVER, CO 80233
TEL: (303) 531-4905
CONTACT: JOHN PRESTWICH

SURVEYOR/ ENGINEER:

CVL CONSULTANTS
OF COLORADO, INC.
10333 E. DRY CREEK RD. STE 240
ENGLEWOOD, CO 80112
TEL: (720) 482-9526
CONTACT: JIM JANNICKE

UTILITY DISTRICT

PARKER WATER AND
SANITATION DISTRICT
18100 E. WOODMAN DRIVE
PARKER, CO 80134
TEL: (303) 841-4627

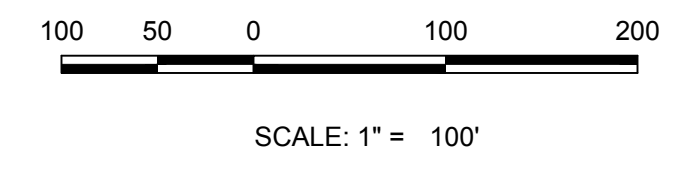
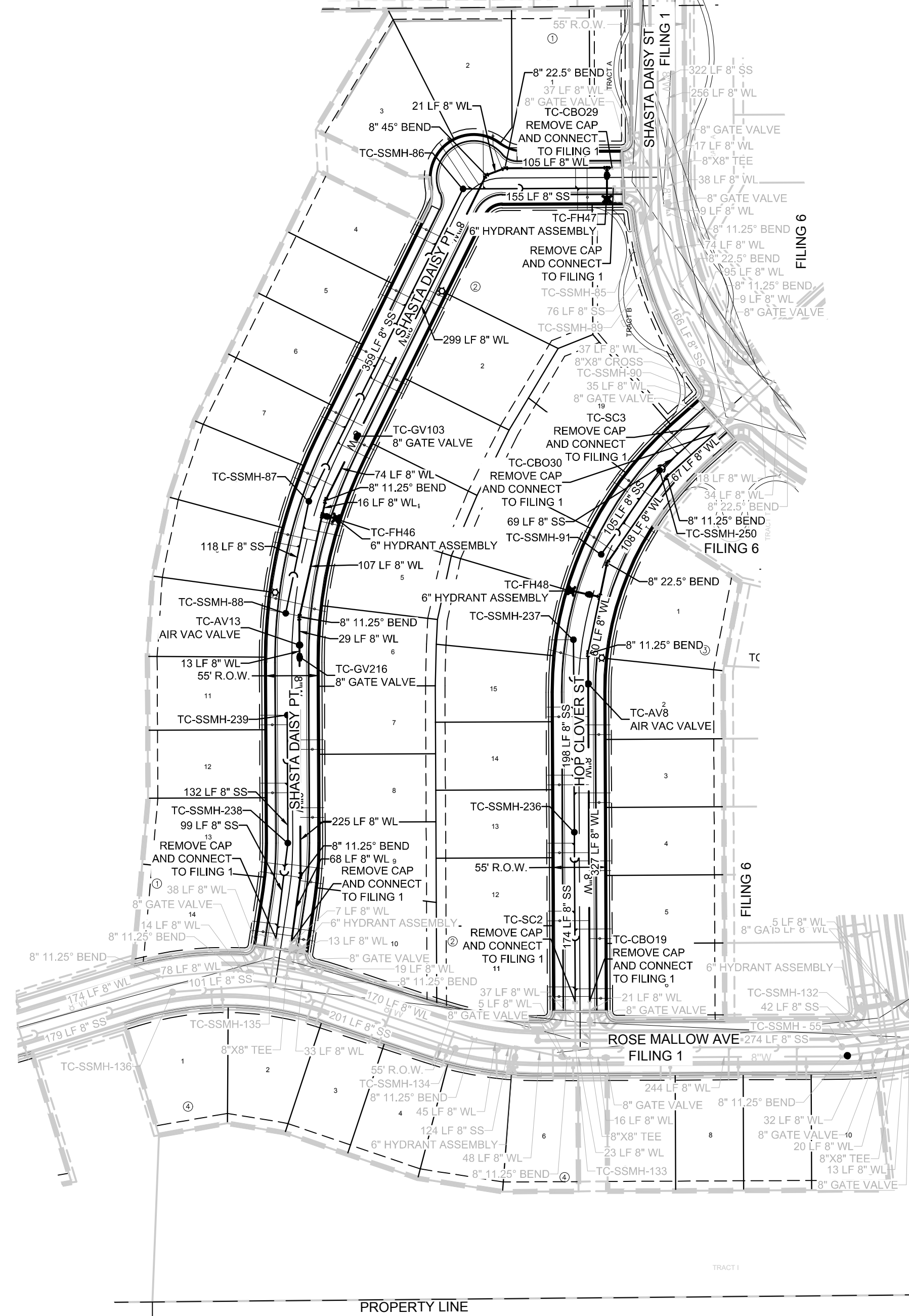


| SHEET NUMBER | DRAWN BY: | KJD | CHECKED BY: | DATE: | AUGUST 2017 | SCALE: | AS SHOWN | FILE NO: | 8130283701 | TRAILS AT CROWFOOT FILING 7 CONSTRUCTION DRAWINGS COVER SHEET | HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112 | | Revisions | | | | |
|--------------|-----------|-----|-------------|-------|-------------|--------|----------|----------|------------|---|--|--|-----------|------|-------|--|--|
| | | | | | | | | | | | | | No. | Date | Appr. | | |
| 1 | | | | | | | | | | | | | | | | | |

N:\PROJECTS\SSR\BENCHM\ENGINEERING\SSR\BENCHM\TRAILS AT CROWFOOT\TRAILS AT CROWFOOT FILING 7\COVER SHEET.CDWG, CDDVA, 3/7/2018 4:37 PM

| SANITARY SERVICE TABLE | | |
|------------------------|-----------------|------------|
| FILING, BLOCK, LOT | STREET | STATIONING |
| F7.B1.L1 | SHASTA DAISY PT | 19+68.64 |
| F7.B1.L2 | SHASTA DAISY PT | 18+70.03 |
| F7.B1.L3 | SHASTA DAISY PT | 18+49.19 |
| F7.B1.L4 | SHASTA DAISY PT | 17+90.70 |
| F7.B1.L5 | SHASTA DAISY PT | 17+20.70 |
| F7.B1.L6 | SHASTA DAISY PT | 16+50.70 |
| F7.B1.L7 | SHASTA DAISY PT | 15+80.70 |
| F7.B1.L8 | SHASTA DAISY PT | 15+12.51 |
| F7.B1.L9 | SHASTA DAISY PT | 14+50.21 |
| F7.B1.L10 | SHASTA DAISY PT | 13+81.74 |
| F7.B1.L11 | SHASTA DAISY PT | 12+77.71 |
| F7.B1.L12 | SHASTA DAISY PT | 12+07.71 |
| F7.B1.L13 | SHASTA DAISY PT | 11+22.90 |
| F7.B1.L14 | SHASTA DAISY PT | 10+60.90 |
| F7.B2.L1 | SHASTA DAISY PT | 19+70.69 |
| F7.B2.L2 | SHASTA DAISY PT | 17+36.15 |
| F7.B2.L3 | SHASTA DAISY PT | 16+38.62 |
| F7.B2.L4 | SHASTA DAISY PT | 15+63.62 |
| F7.B2.L5 | SHASTA DAISY PT | 14+69.94 |
| F7.B2.L6 | SHASTA DAISY PT | 13+81.74 |
| F7.B2.L7 | SHASTA DAISY PT | 12+52.20 |
| F7.B2.L8 | SHASTA DAISY PT | 11+82.20 |
| F7.B2.L9 | SHASTA DAISY PT | 11+24.16 |
| F7.B2.L10 | SHASTA DAISY PT | 10+58.41 |
| F7.B2.L11 | HOP CLOVER ST | 10+63.00 |
| F7.B2.L12 | HOP CLOVER ST | 11+40.98 |
| F7.B2.L13 | HOP CLOVER ST | 12+10.98 |
| F7.B2.L14 | HOP CLOVER ST | 12+80.98 |
| F7.B2.L15 | HOP CLOVER ST | 13+50.98 |
| F7.B2.L16 | HOP CLOVER ST | 14+19.09 |
| F7.B2.L17 | HOP CLOVER ST | 15+09.65 |
| F7.B2.L18 | HOP CLOVER ST | 15+76.97 |
| F7.B2.L19 | HOP CLOVER ST | 16+38.73 |
| F7.B3.L1 | HOP CLOVER ST | 15+48.44 |
| F7.B3.L2 | HOP CLOVER ST | 13+32.50 |
| F7.B3.L3 | HOP CLOVER ST | 12+62.50 |
| F7.B3.L4 | HOP CLOVER ST | 11+92.50 |
| F7.B3.L5 | HOP CLOVER ST | 11+22.50 |
| F7.B3.L6 | HOP CLOVER ST | 10+61.00 |
| F7.B4.L1 | ROSE MALLOW AVE | 36+03.97 |
| F7.B4.L2 | ROSE MALLOW AVE | 37+13.31 |
| F7.B4.L3 | ROSE MALLOW AVE | 37+81.82 |
| F7.B4.L4 | ROSE MALLOW AVE | 38+50.26 |
| F7.B4.L5 | ROSE MALLOW AVE | 39+07.86 |
| F7.B4.L6 | ROSE MALLOW AVE | 39+65.65 |
| F7.B4.L7 | ROSE MALLOW AVE | 40+76.73 |
| F7.B4.L8 | ROSE MALLOW AVE | 41+46.73 |
| F7.B4.L9 | ROSE MALLOW AVE | 42+16.73 |
| F7.B4.L10 | ROSE MALLOW AVE | 42+79.53 |

| WATER SERVICE TABLE | | |
|---------------------|-----------------|------------|
| FILING, BLOCK, LOT | STREET | STATIONING |
| F7.B1.L1 | SHASTA DAISY PT | 19+68.64 |
| F7.B1.L2 | SHASTA DAISY PT | 18+70.03 |
| F7.B1.L3 | SHASTA DAISY PT | 18+49.19 |
| F7.B1.L4 | SHASTA DAISY PT | 17+90.70 |
| F7.B1.L5 | SHASTA DAISY PT | 17+20.70 |
| F7.B1.L6 | SHASTA DAISY PT | 16+50.70 |
| F7.B1.L7 | SHASTA DAISY PT | 15+80.70 |
| F7.B1.L8 | SHASTA DAISY PT | 15+12.51 |
| F7.B1.L9 | SHASTA DAISY PT | 14+50.21 |
| F7.B1.L10 | SHASTA DAISY PT | 13+81.74 |
| F7.B1.L11 | SHASTA DAISY PT | 12+77.71 |
| F7.B1.L12 | SHASTA DAISY PT | 12+07.71 |
| F7.B1.L13 | SHASTA DAISY PT | 11+22.90 |
| F7.B1.L14 | SHASTA DAISY PT | 10+60.90 |
| F7.B2.L1 | SHASTA DAISY PT | 19+70.69 |
| F7.B2.L2 | SHASTA DAISY PT | 17+36.15 |
| F7.B2.L3 | SHASTA DAISY PT | 16+38.62 |
| F7.B2.L4 | SHASTA DAISY PT | 15+63.62 |
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| F7.B2.L6 | SHASTA DAISY PT | 13+81.74 |
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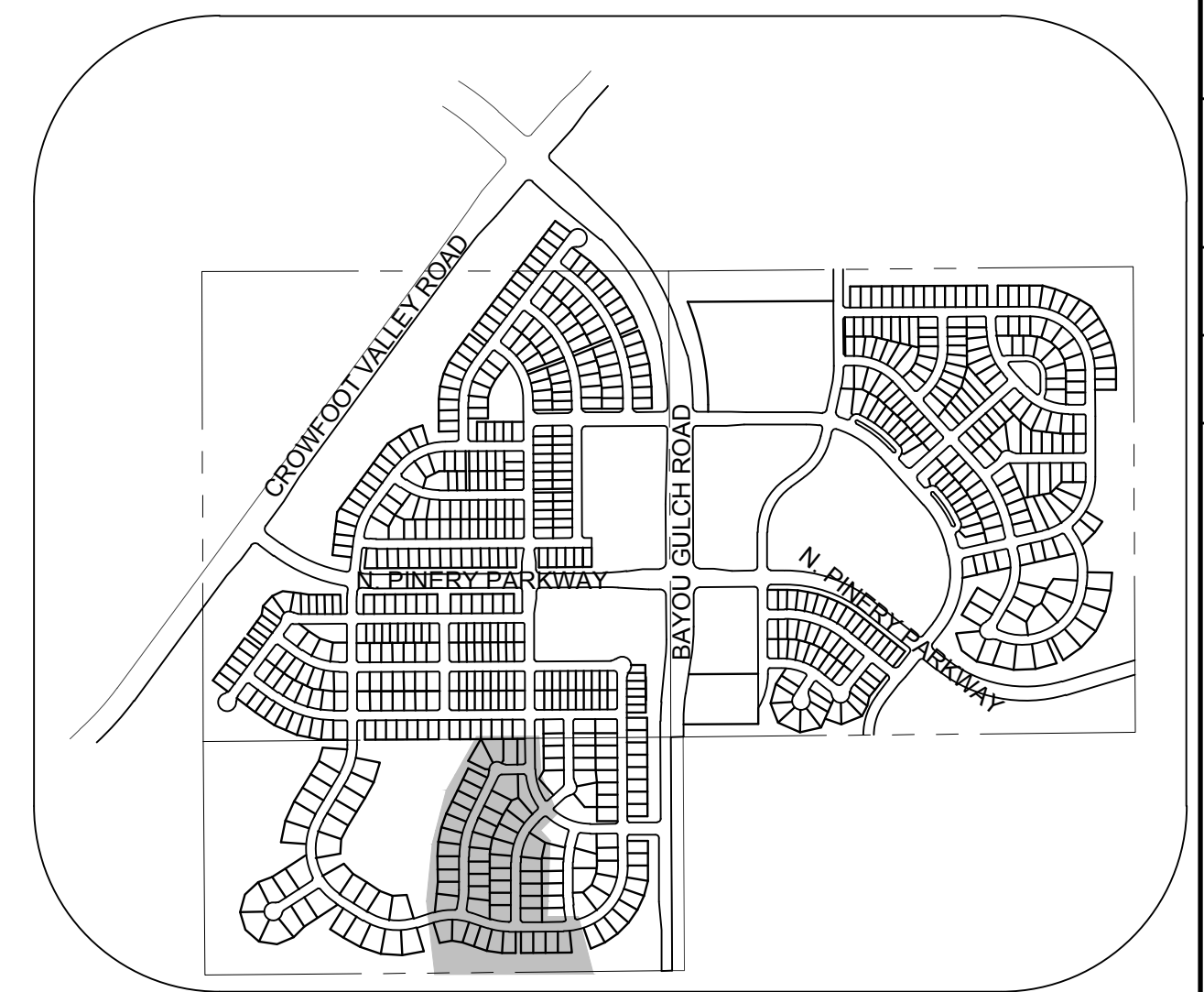


APPROVED
Feb 20 2020
**PARKER WATER AND
SANITATION DISTRICT**

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TOWN OF PARKER, DIRECTOR OF ENGINEERING _____ DATE _____



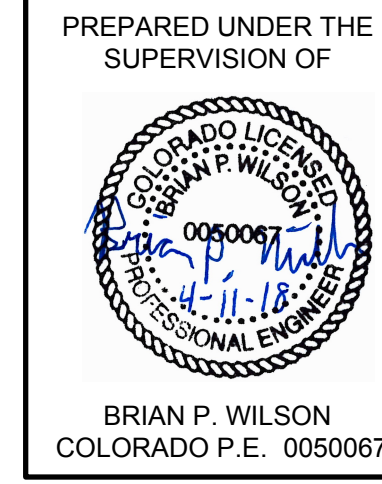
| KEYMAP N.T.S. LEGEND | |
|----------------------|---------------------------------------|
| ② | BLOCK NUMBER |
| Ⓐ | LOT TYPE |
| 6 | LOT NUMBER |
| ⊗ | PROPOSED BUTTERFLY VALVE |
| ⊞ | PROPOSED CAP WITH END OF LINE BLOWOFF |
| ⊞ | PROPOSED REDUCER |
| ⊞ | PROPOSED VALVE |
| ⊞ | PROPOSED FIRE HYDRANT |
| ⊞ | PROPOSED WL FITTING WITH THRUST BLOCK |
| ⊞ | PROPOSED FLARED END SECTION |
| ⊞ | PROPOSED LOW POINT BLOW-OFF |
| ⊞ | PROPOSED AIR VALVE |
| ⊞ | FUTURE PHASE VALVE |
| ⊞ | FUTURE FIRE HYDRANT |
| ⊞ | PROPOSED LIGHT POLE |
| ⊞ | PROPOSED SIDEWALK |
| ⊞ | PROPOSED SIDEWALK RAMP |
| 10.00 | EXISTING ELEVATION |
| 10.00 | PROPOSED DESIGN ELEVATION |
| ⊞ | PROPOSED STORM DRAIN INLET |
| ⊞ | PROPOSED STORM DRAIN MANHOLE |
| △ | PROPOSED RANGE POINT |
| --- | CENTERLINE |
| --- | RIGHT-OF-WAY |
| --- | PROPERTY LINE |
| --- | EDGE OF PAVEMENT |
| → | PROPOSED DIRECTION OF FLOW |
| 1.0% | PROPOSED SLOPE & DIRECTION |
| 5615 | EXISTING 5' CONTOUR |
| 5616 | EXISTING 1' CONTOUR |
| 5620 | PROPOSED 5' CONTOUR |
| 5607 | PROPOSED 1' CONTOUR |
| --- | PROPOSED STORM DRAIN |
| --- | PROPOSED SEWER LINE WITH MANHOLE |
| --- | PROPOSED WATER LINE |
| --- | PROPOSED WATER LATERAL W/ METER |
| --- | SECTION LINE |
| --- | FILING BOUNDARY |
| --- | EXISTING FIBER OPTIC LINE |
| --- | EXISTING OVERHEAD POWER |
| --- | EXISTING TELEPHONE LINE |

| ABBREVIATIONS | |
|---------------|---------------------------------|
| AD | ANGLE DIFFERENCE |
| AV | AIR VAC RELEASE VALVE |
| BVC | BEGIN VERTICAL CURVE |
| BVP | BEGIN VERTICAL PROFILE |
| CBO | CAP WITH BLOW OFF |
| CRR | CURB RETURN RADIUS |
| EL | ELEVATION |
| EP | EDGE OF PAVEMENT |
| EVC | END VERTICAL CURVE |
| EVP | END VERTICAL PROFILE |
| FG | FINISHED GROUND |
| FH | FIRE HYDRANT |
| FL | FLOW LINE |
| GV | GATE VALVE |
| HCR | HANDICAP CURB RAMP |
| HP | HIGH POINT |
| INV | INVERT |
| K | CURVATURE COEFFICIENT |
| LF | LINEAR FEET |
| MH | MANHOLE |
| N.T.S. | NOT TO SCALE |
| PVC | POLYVINYL CHLORIDE |
| PVI | PT. OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENT |
| RCBC | REINFORCED CONCRETE BOX CULVERT |
| RCP | REINFORCED CONCRETE PIPE |
| ROW | RIGHT OF WAY |
| SC | SANITARY CAP |
| SD | STORM DRAIN |
| SL | SECTION LINE |
| SS | SANITARY SEWER |
| STA | STATION |
| T.O.P. | TOP OF PIPE |
| UE | UTILITY EASEMENT |
| VC | VERTICAL CURVE |
| WL | WATER LINE |
| WLC | WATER LINE CONNECTION |
| WSE | WATER SURFACE ELEVATION |

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REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.
BY: _____ DATE _____
(DISTRICT REPRESENTATIVE)

APPROVED FOR CONSTRUCTION:
PARKER WATER AND SANITATION DISTRICT
BY: _____ DATE _____
(DISTRICT ENGINEER)



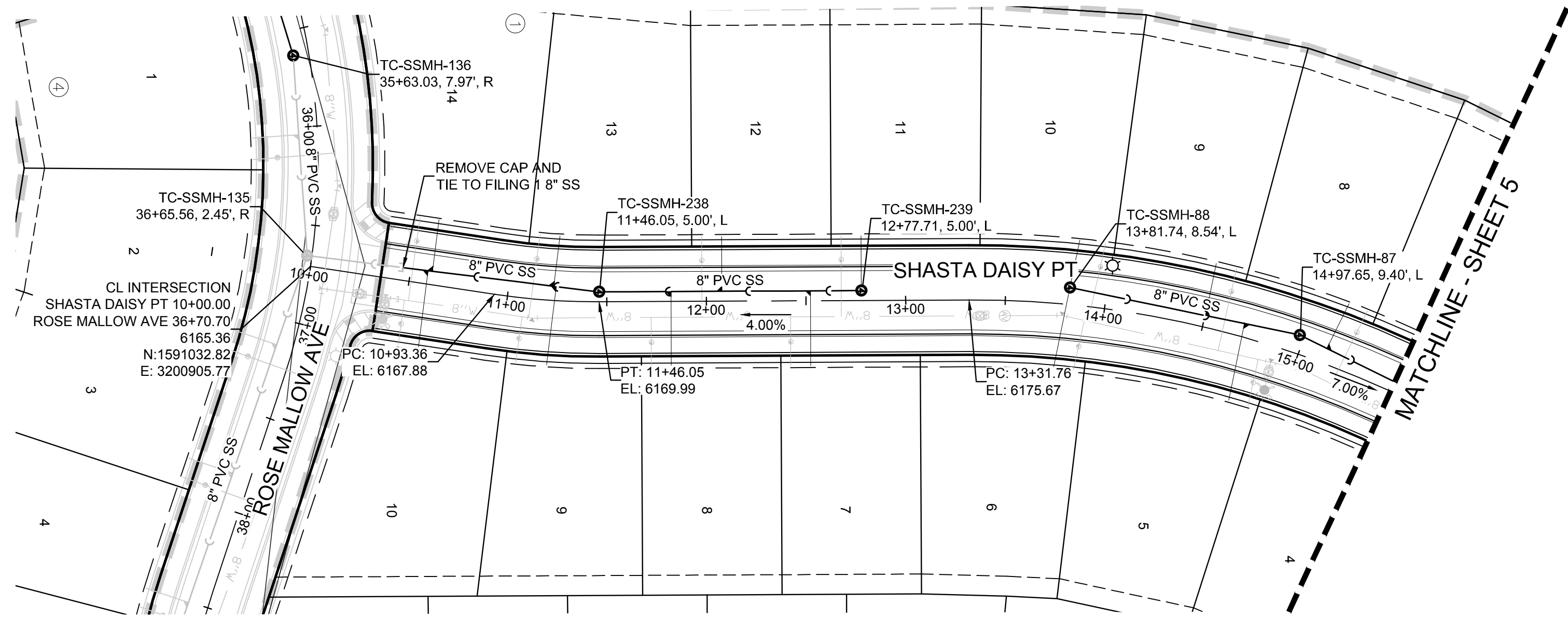
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DATE: 02/12/2020
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE _____
(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENT OF NFPA 24 WHEN SUBMITTING FOR REVIEW.)

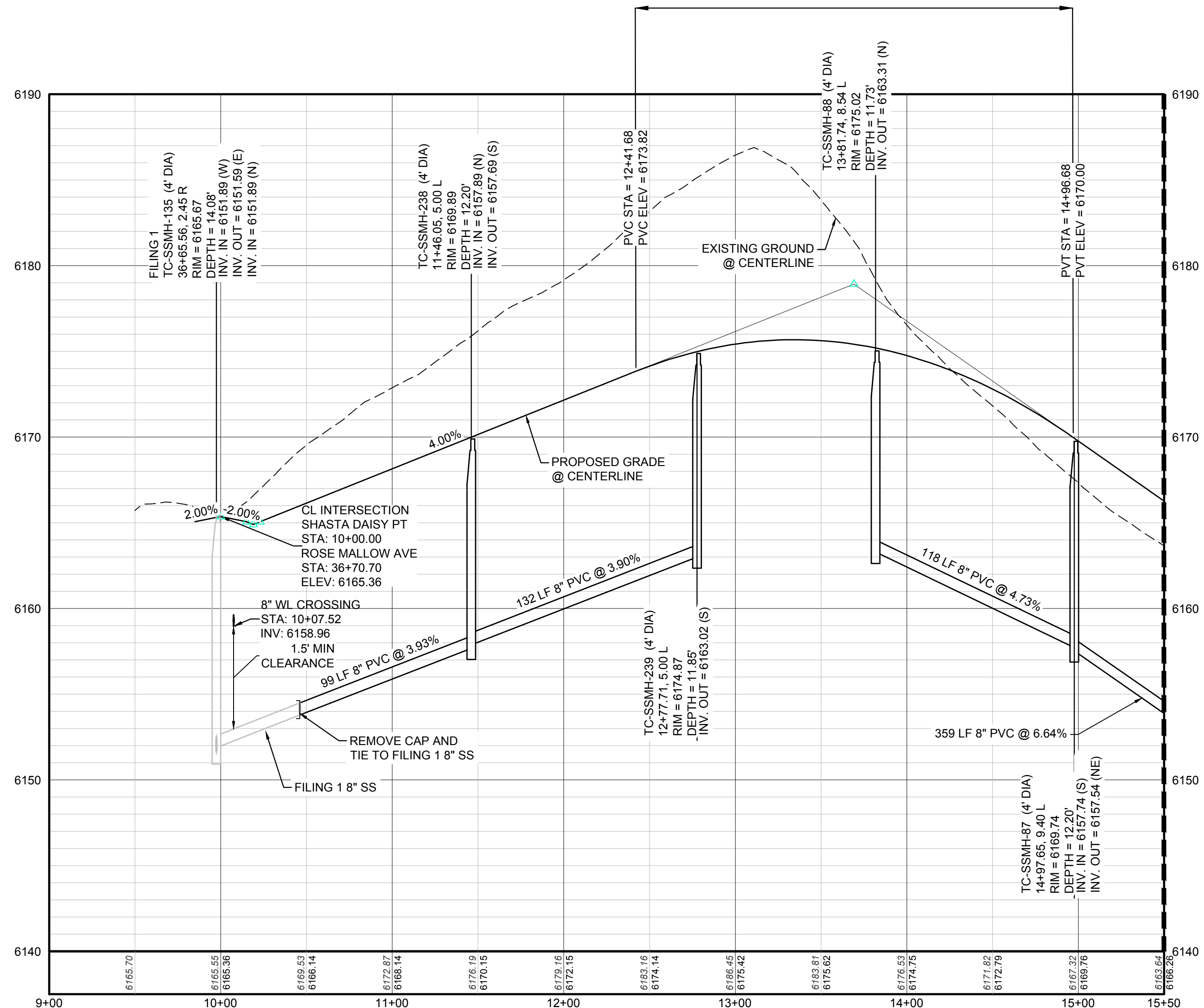
CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCC 1-800-922-1987
UTILITY NOTIFICATION CENTER OF COLORADO

| | | | | | |
|---|-----------|-------------|----------|-------------------|------|
| SCALE: | JLR | AS SHOWN | FILE NO: | 8130283701 | |
| DRAWN BY: | JLR | CHECKED BY: | JLU | DATE: AUGUST 2017 | |
| SHEET NUMBER | 3 | | | | |
| TRAILS AT CROWFOOT FILING 7 CONSTRUCTION DRAWINGS AREA UTILITY PLAN | | | | | |
| HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112 | | | | | |
| 10338 E. Dry Creek Rd. Suite 6410 Englewood, Colorado 80151 Tel: (720) 482-9526 Fax: (720) 482-9546 | | | | | |
| CVL CONSULTANTS | | | | | |
| No. | Revisions | Date | Init. | Appr. | Date |

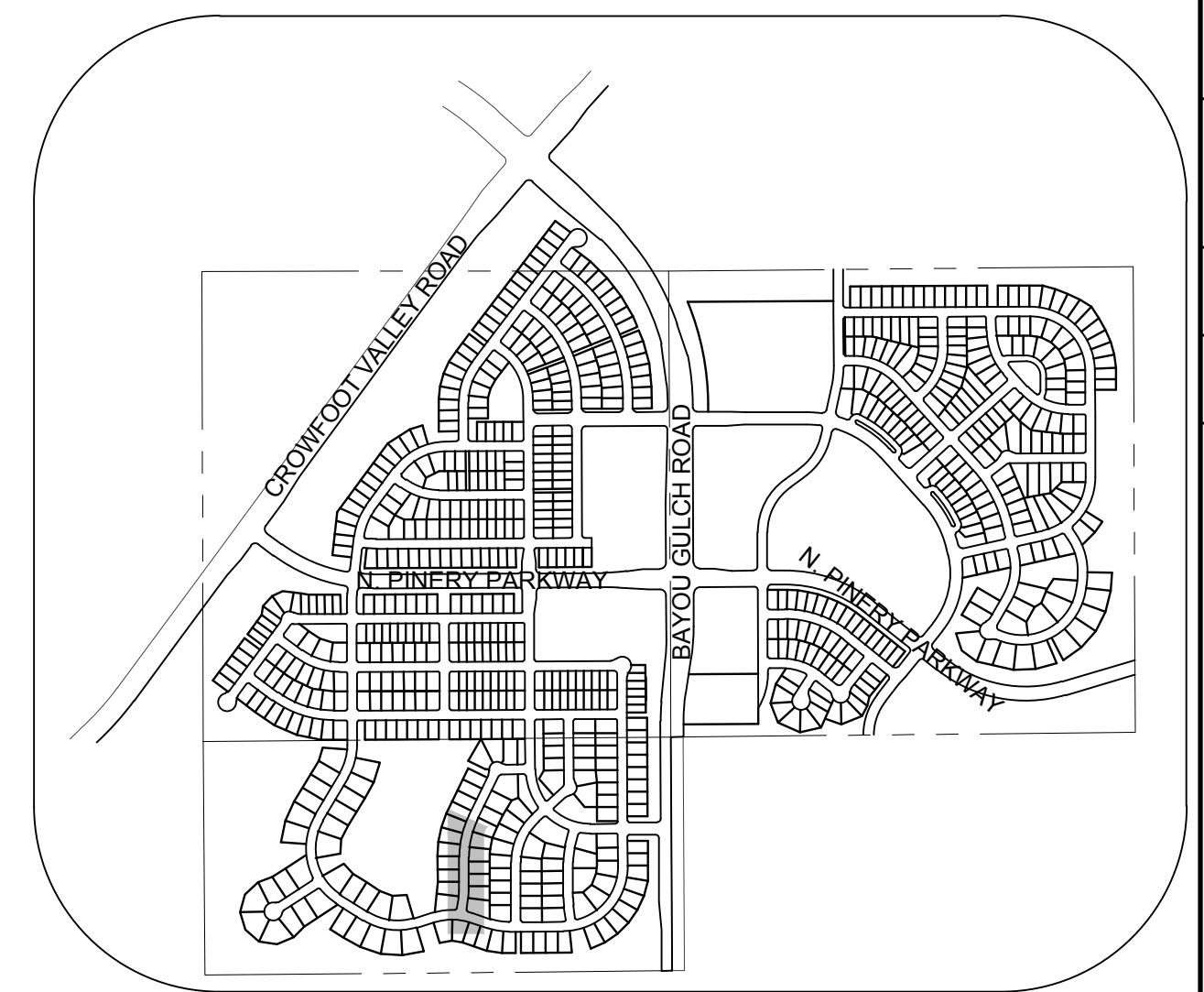
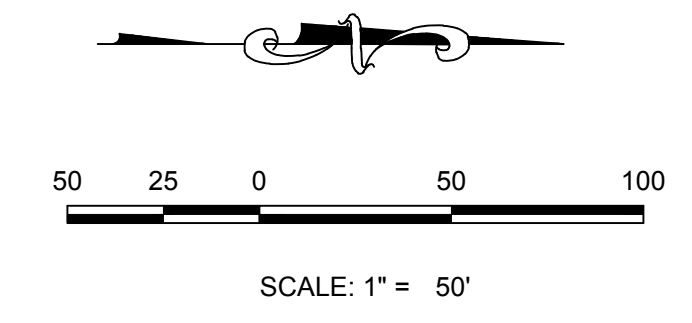


PLAN: SHASTA DAISY PT STA: 9+00.00 TO 15+50.00
HORIZONTAL SCALE: 1" = 50'

HP ELEV = 6175.67
HP STA = 13+34.46
PVI ELEV = 6176.92
PVI STA = 13+69.18
AD = -11.00%
K = 23.17
255.0' VC



PROFILE: SHASTA DAISY PT STA: 9+00.00 TO 15+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



KEYMAP
N.T.S.

LEGEND

| | | | |
|-------|---------------------------------------|------|----------------------------------|
| ② | BLOCK NUMBER | △ | PROPOSED RANGE POINT |
| Ⓐ | LOT TYPE | --- | CENTERLINE |
| 6 | LOT NUMBER | --- | RIGHT-OF-WAY |
| ⊗ | PROPOSED BUTTERFLY VALVE | --- | PROPERTY LINE |
| ⌈ | PROPOSED CAP WITH END OF LINE BLOWOFF | --- | EDGE OF PAVEMENT |
| ⊗ | PROPOSED REDUCER | → | PROPOSED DIRECTION OF FLOW |
| ⊗ | PROPOSED VALVE | 1.0% | PROPOSED SLOPE & DIRECTION |
| ⊗ | PROPOSED FIRE HYDRANT | 5615 | EXISTING 5' CONTOUR |
| ⊗ | PROPOSED WL FITTING WITH THRUST BLOCK | 5616 | EXISTING 1' CONTOUR |
| ⊗ | PROPOSED FLARED END SECTION | 5620 | PROPOSED 5' CONTOUR |
| ⊗ | PROPOSED LOW POINT BLOW-OFF | 5607 | PROPOSED 1' CONTOUR |
| ⊗ | PROPOSED AIR VALVE | --- | PROPOSED STORM DRAIN |
| ⊗ | FUTURE PHASE VALVE | --- | PROPOSED SEWER LINE WITH MANHOLE |
| ⊗ | FUTURE FIRE HYDRANT | --- | PROPOSED SEWER LATERAL |
| ⊗ | PROPOSED LIGHT POLE | --- | PROPOSED WATER LINE |
| ⊗ | PROPOSED SIDEWALK | --- | PROPOSED WATER LATERAL W/ METER |
| ⊗ | PROPOSED SIDEWALK RAMP | --- | SECTION LINE |
| 10.00 | EXISTING ELEVATION | --- | FILING BOUNDARY |
| 10.00 | PROPOSED DESIGN ELEVATION | --- | EXISTING FIBER OPTIC LINE |
| ⊗ | PROPOSED STORM DRAIN INLET | --- | EXISTING OVERHEAD POWER |
| ⊗ | PROPOSED STORM DRAIN MANHOLE | --- | EXISTING TELEPHONE LINE |

ABBREVIATIONS

| | | | |
|-----------|------------------------|--------|---------------------------------|
| AD | ANGLE DIFFERENCE | MH | MANHOLE |
| AV | AIR VAC RELEASE VALVE | N.T.S. | NOT TO SCALE |
| BVC | BEGIN VERTICAL CURVE | PVC | POLYVINYL CHLORIDE |
| BVP | BEGIN VERTICAL PROFILE | PVI | PT. OF VERTICAL INTERSECTION |
| CBO | CAP WITH BLOW OFF | PVT | POINT OF VERTICAL TANGENT |
| CRR | CURB RETURN RADIUS | RCBC | REINFORCED CONCRETE BOX CULVERT |
| ELEVATION | ELEVATION | RCP | REINFORCED CONCRETE PIPE |
| EP | EDGE OF PAVEMENT | ROW | RIGHT OF WAY |
| EVC | END VERTICAL CURVE | SC | SANITARY CAP |
| EVP | END VERTICAL PROFILE | SD | STORM DRAIN |
| FG | FINISHED GROUND | SL | SECTION LINE |
| FH | FIRE HYDRANT | SS | SANITARY SEWER |
| FL | FLOW LINE | STA | STATION |
| GV | GATE VALVE | T.O.P. | TOP OF PIPE |
| HCR | HANDICAP CURB RAMP | UE | UTILITY EASEMENT |
| HP | HIGH POINT | VC | VERTICAL CURVE |
| INV | INVERT | WL | WATER LINE |
| K | CURVATURE COEFFICIENT | WLC | WATER LINE CONNECTION |
| LF | LINEAR FEET | WSE | WATER SURFACE ELEVATION |

APPROVED
Feb 20 2020
PARKER WATER AND SANITATION DISTRICT

PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

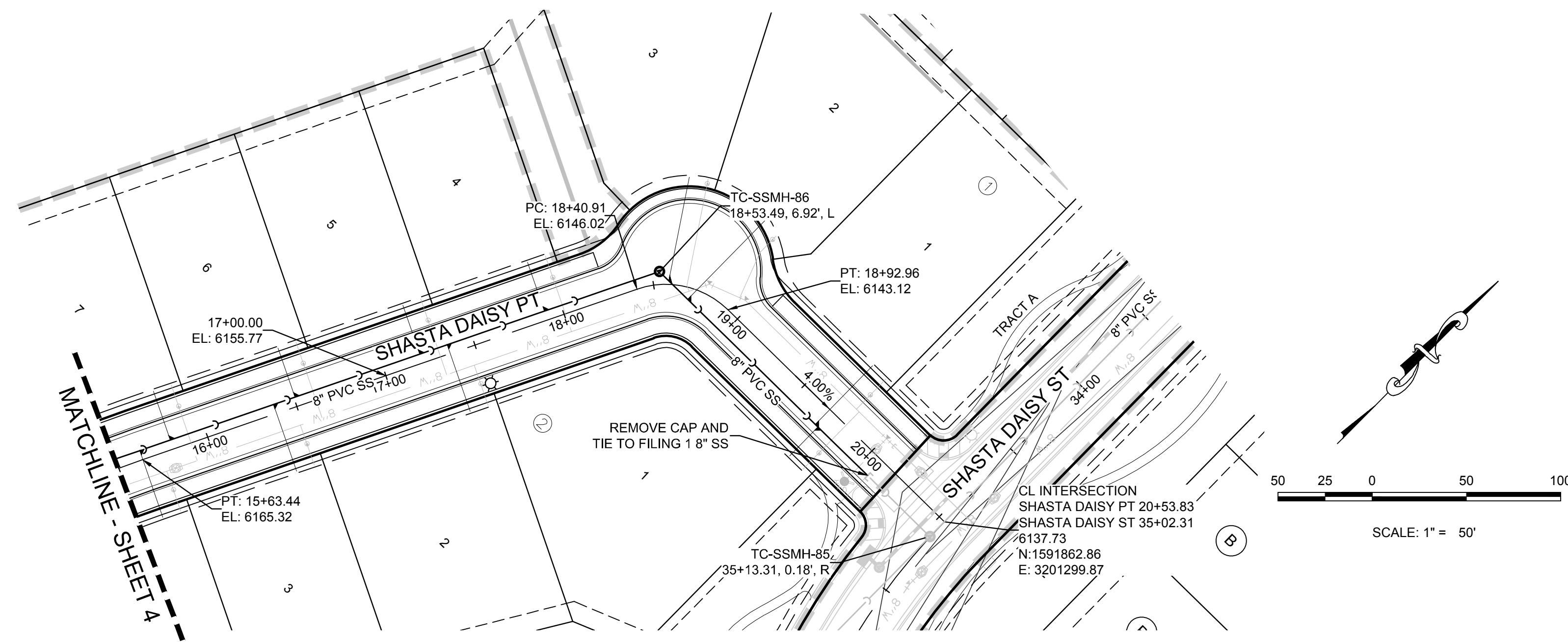
N:\PROJECTS\SSR\BENCH\ENGINEERING\SSR\BENCH\WATER AND SANITATION\SANITARY PLAN AND PROFILE\SHASTA DAISY TERRACE SANITARY DWG. CODYA. 3/26/2018.4:32 PM

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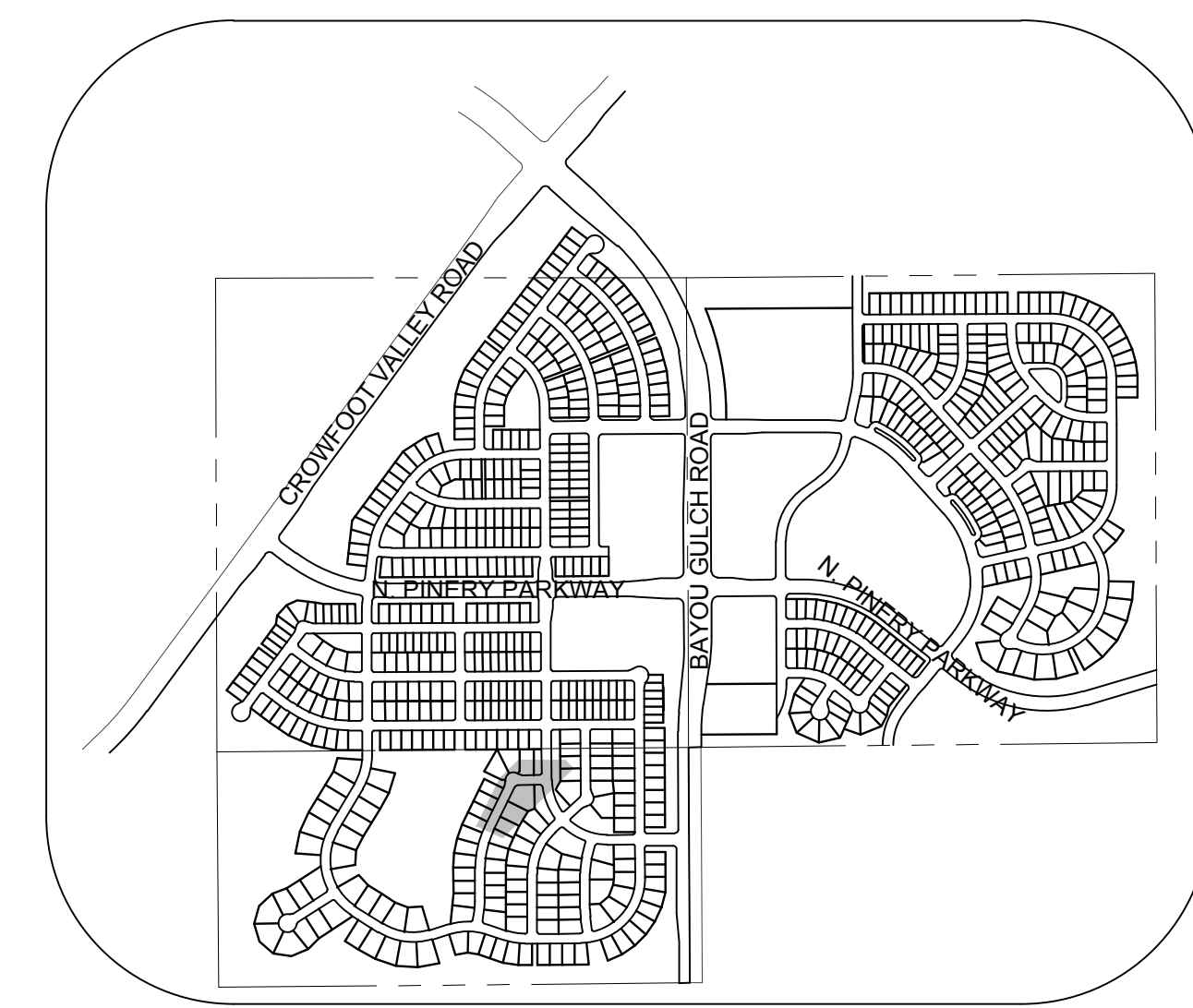
BENCHMARK
THE DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

| | | | | | | | | |
|--------------|---|-----------------|----------------|-------------------|--|------|-------|------|
| SHEET NUMBER | DRAWN BY: KJD | SCALE: AS SHOWN | CHECKED BY: JJ | DATE: AUGUST 2017 | Revisions | Date | Appr. | Date |
| | | | | | No. | | | |
| 4 | TRAILS AT CROWFOOT FILING 7 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN AND PROFILE SHASTA DAISY POINT | | | | 10339 E. Dry Creek Rd. Suite 410 Englewood, Colorado 80150 Tel: (720) 482-9526 Fax: (720) 482-9546 HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112 | | | |

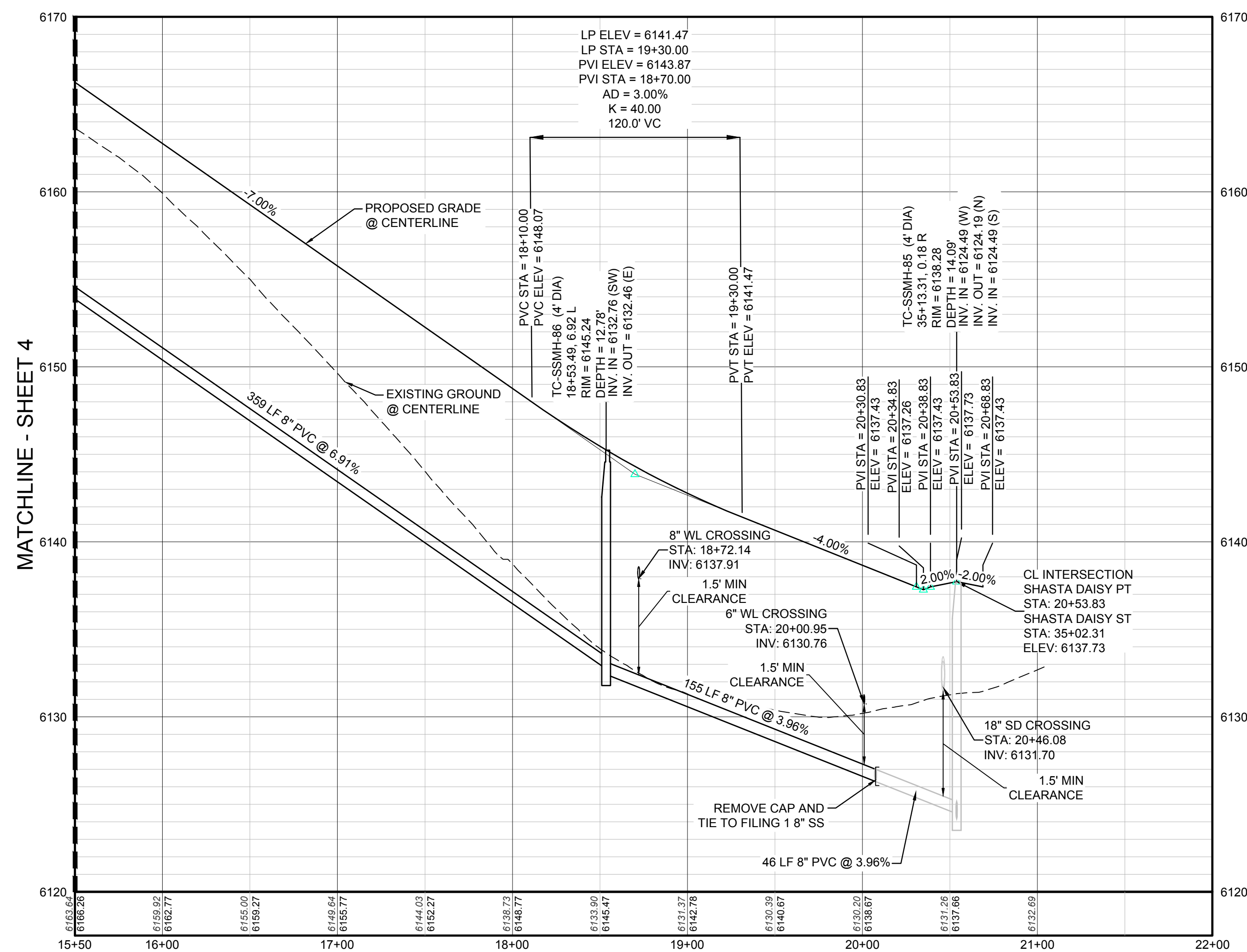


PLAN: SHASTA DAISY PT STA: 15+50.00 TO 22+00.00
HORIZONTAL SCALE: 1" = 50'



KEYMAP
N.T.S.
LEGEND

| | | | |
|-------|---------------------------------------|------|----------------------------------|
| ② | BLOCK NUMBER | △ | PROPOSED RANGE POINT |
| Ⓐ | LOT TYPE | --- | CENTERLINE |
| 6 | LOT NUMBER | --- | RIGHT-OF-WAY |
| ⊕ | PROPOSED BUTTERFLY VALVE | --- | PROPERTY LINE |
| ⌈ | PROPOSED CAP WITH END OF LINE BLOWOFF | --- | EDGE OF PAVEMENT |
| ⌋ | PROPOSED REDUCER | → | PROPOSED DIRECTION OF FLOW |
| ⊗ | PROPOSED VALVE | 1.0% | PROPOSED SLOPE & DIRECTION |
| ⊕ | PROPOSED FIRE HYDRANT | 5615 | EXISTING 5' CONTOUR |
| ⊕ | PROPOSED WL FITTING WITH THRUST BLOCK | 5616 | EXISTING 1' CONTOUR |
| ⊕ | PROPOSED FLARED END SECTION | 5620 | PROPOSED 5' CONTOUR |
| ⊕ | PROPOSED LOW POINT BLOW-OFF | 5607 | PROPOSED 1' CONTOUR |
| ⊕ | PROPOSED AIR VALVE | --- | PROPOSED STORM DRAIN |
| ⊗ | FUTURE PHASE VALVE | --- | PROPOSED SEWER LINE WITH MANHOLE |
| ⊕ | FUTURE FIRE HYDRANT | --- | PROPOSED SEWER LATERAL |
| ⊕ | PROPOSED LIGHT POLE | --- | PROPOSED WATER LINE |
| --- | PROPOSED SIDEWALK | --- | PROPOSED WATER LATERAL W/ METER |
| --- | PROPOSED SIDEWALK RAMP | --- | SECTION LINE |
| 10.00 | EXISTING ELEVATION | --- | FILING BOUNDARY |
| 10.00 | PROPOSED DESIGN ELEVATION | --- | EXISTING FIBER OPTIC LINE |
| ⊕ | PROPOSED STORM DRAIN INLET | --- | EXISTING OVERHEAD POWER |
| ⊕ | PROPOSED STORM DRAIN MANHOLE | --- | EXISTING TELEPHONE LINE |



PROFILE: SHASTA DAISY PT STA: 15+50.00 TO 22+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

ABBREVIATIONS

| | | | |
|------|------------------------|--------|---------------------------------|
| AD | ANGLE DIFFERENCE | MH | MANHOLE |
| AV | AIR VAC RELEASE VALVE | N.T.S. | NOT TO SCALE |
| BVC | BEGIN VERTICAL CURVE | PVC | POLYVINYL CHLORIDE |
| BVP | BEGIN VERTICAL PROFILE | PVI | PT. OF VERTICAL INTERSECTION |
| CBO | CAP WITH BLOW OFF | PVT | POINT OF VERTICAL TANGENT |
| CRR | CURB RETURN RADIUS | RCBC | REINFORCED CONCRETE BOX CULVERT |
| ELEV | ELEVATION | RCP | REINFORCED CONCRETE PIPE |
| EP | EDGE OF PAVEMENT | ROW | RIGHT OF WAY |
| EVC | END VERTICAL CURVE | SC | SANITARY CAP |
| EVP | END VERTICAL PROFILE | SD | STORM DRAIN |
| FG | FINISHED GROUND | SL | SECTION LINE |
| FH | FIRE HYDRANT | SS | SANITARY SEWER |
| FL | FLOW LINE | STA | STATION |
| GV | GATE VALVE | T.O.P. | TOP OF PIPE |
| HCR | HANDICAP CURB RAMP | UE | UTILITY EASEMENT |
| HP | HIGH POINT | VC | VERTICAL CURVE |
| INV | INVERT | WL | WATER LINE |
| K | CURVATURE COEFFICIENT | WLC | WATER LINE CONNECTION |
| LF | LINEAR FEET | WSE | WATER SURFACE ELEVATION |

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BENCHMARK
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PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

10339 E. Dry Creek Rd., Suite 410, Englewood, CO 80110
Tel: (720) 482-9526 Fax: (720) 482-9546

CVL CONSULTANTS

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 7 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
SHASTA DAISY POINT

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: KJD
CHECKED BY: JJ
DATE: AUGUST 2017

SHEET NUMBER: 5

| No. | Revisions | Date | Appr. | Date |
|-----|-----------|------|-------|------|
| | | | | |

ALUMINUM STEP

CONCRETE WALL SECTION

STEPS TO BE HOOKED BEHIND REINFORCING WHEN CONCRETE SECTIONS ARE CAST.

TYPICAL INSTALLATION

TOE POCKET DETAILS

STANDARD EXTRUDED ALUMINUM MANHOLE STEP

NOTES:

- ALUMINUM ALLOY SPECIFICATIONS:
 - FED. SPEC. QQ-A-200/9 (ALUMINUM-MAGNESIUM-SILICATE ALLOY)
 - MINIMUM TENSILE STRENGTH=38,000 p.s.i.
 - MINIMUM YIELD STRENGTH=35,000 p.s.i.
 - MINIMUM ELONGATION=10% IN 2"
- MINIMUM LOAD CAPACITY (APPLIED AT CENTER OF STEP)
 - 1,000 lb. WITH 4" PROJECTION FROM WALL
 - 1,500 lb. WITH 4" PROJECTION FROM WALL
- WEIGHT PER STEP=2.25 POUNDS
- STEPS TO BE CAST, UNALTERED, IN MANHOLE WALL IN STRAIGHT LINE, VERTICALLY, AT THE SAME TIME THE BARREL OR CONE SECTIONS ARE CAST.
- VERTICAL SPACING BETWEEN STEPS SHALL BE CONSISTENT IN EACH INDIVIDUAL MANHOLE.
- TOE POCKETS ARE REQUIRED IN STORM SEWER MANHOLES IF TOP OF BENCH IS MORE THAN 18" ABOVE INVERT. TOE POCKETS ARE NOT REQUIRED IN SANITARY SEWER MANHOLES UNLESS OTHERWISE SPECIFIED.

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|-------|-------|
| APPROVED: | PVR | 01/16 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

POLYPROPYLENE REINFORCED PLASTIC STEP

NOTES:

- THE CAST ALUMINUM MANHOLE STEP SHALL BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
 - ALLOY DESIGNATION: 6061 T6
 - MIN. TENSILE STRENGTH: 40 K.S.I.
 - MIN. YIELD STRENGTH: 20 K.S.I.
 - MIN. SHEAR STRENGTH: 27.45 K.S.I.
 - ELONGATION: 10% IN 2"
 - BRINELL HARDNESS: 70
- MINIMUM LOAD CAPACITY, STEP SPACING AND ALIGNMENT, TOE POCKET DETAILS AND OTHER APPLICABLE NOTES OR DETAILS SPECIFIED FOR EXTRUDED ALUMINUM MANHOLE STEP SHALL ALSO APPLY TO THIS STANDARD.
- MIN. WT. = 2.0 LB.

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|-------|-------|
| APPROVED: | PVR | 01/16 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP

CAST ALUMINUM MANHOLE STEP

NOTES:

- THE CAST ALUMINUM MANHOLE STEP SHALL BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
 - ALLOY DESIGNATION: 6061 T6
 - MIN. TENSILE STRENGTH: 40 K.S.I.
 - MIN. YIELD STRENGTH: 20 K.S.I.
 - MIN. SHEAR STRENGTH: 27.45 K.S.I.
 - ELONGATION: 10% IN 2"
 - BRINELL HARDNESS: 70
- MINIMUM LOAD CAPACITY, STEP SPACING AND ALIGNMENT, TOE POCKET DETAILS AND OTHER APPLICABLE NOTES OR DETAILS SPECIFIED FOR EXTRUDED ALUMINUM MANHOLE STEP SHALL ALSO APPLY TO THIS STANDARD.
- MIN. WT. = 2.0 LB.

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|-------|-------|
| APPROVED: | PVR | 01/16 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
CAST ALUMINUM MANHOLE STEP

MARKER POST DETAIL

STEEL PIPE STENCILED IDENTIFICATION MARKS ON POSTS SHALL FACE THE APPURTENANCE WITH 2" STENCILS INDICATING TYPE OF APPURTENANCE (MH, 12" VALVE, ETC.) AND THE DISTANCE IN FEET AND INCHES FROM POST.

REDWOOD POST ROUTER LETTERS AND NUMBERS INTO POST. PAINT LETTERS AND NUMBERS BLACK.

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|-------|-------|
| APPROVED: | PVR | 01/16 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
MARKER POST DETAIL

TYPICAL TRENCH DETAIL

NOTES:

- Slating or benching of trench side walls, where permitted shall be in accordance with applicable Federal, State and Local safety regulations.
- Trench shall be graded and staked as necessary to assure safe working conditions or to protect adjacent utilities, structures, etc. (Unless otherwise specified on the plans, no permission will be made for the replacement or relocation of curb and gutter, utilities, structures, etc. outside the maximum limits of excavation as shown on the contractor shall be responsible for protection of same.)
- If dimension T_2 is $\leq 4'$, then existing asphalt pavement shall be removed and replaced up to the gutter. Maximum asphalt top surface T_2 shall then be based on this actual width.

TABLE I

| STREET WIDTH | ASPHALT BASE COURSE THICKNESS (INCHES) | ASPHALTIC WEARING SURFACE (INCHES) | TOTAL THICKNESS (INCHES) |
|----------------|--|------------------------------------|--------------------------|
| UP TO 36' | 4" | 2" | 6" |
| 36' TO 44' | 4" | 3" | 7" |
| 44' TO 48' | 5" | 3" | 8" |
| WIDER THAN 48' | 6" | 3" | 9" |

TABLE II

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|------|------|
| APPROVED: | PVR | 5/98 | 1/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
SEWER TRENCHING AND BEDDING DETAIL

CONCRETE ARCH

CONCRETE CRADLE

TABLE II

| NOMINAL DIMENSION (D) | MINIMUM THICKNESS (t) | MIN. WIDTH OF CRADLE (B _c) |
|-----------------------|-----------------------|--|
| 18" & smaller | 6" | B _c + 8" |
| 21" to 24" | 6" | B _c + 8" |
| 27" to 33" | 8" | B _c + 8" |
| 36" to 42" | 10" | 1.25 B _c |
| 48" & larger | 1/4 D | 1.25 B _c |

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|------|-------|
| APPROVED: | PVR | 7/98 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING DETAIL - CLASS "A"

CLASS "B" BEDDING

TABLE IV

| PIPE SIZE - D | MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE |
|---------------|--|
| 18" & SMALLER | 6" |
| 21" TO 36" | 6" |
| 42" TO 60" | 6" |
| 66" TO 96" | 8" |
| 104" & LARGER | 12" |

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|------|-------|
| APPROVED: | PVR | 3/98 | 10/16 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING CLASS "B"

CLASS "B" BEDDING

TABLE IV

| PIPE SIZE - D | MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE |
|---------------|--|
| 18" & SMALLER | 6" |
| 21" TO 36" | 6" |
| 42" TO 60" | 6" |
| 66" TO 96" | 8" |
| 104" & LARGER | 12" |

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|------|------|
| APPROVED: | PVR | 5/98 | 2/02 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING CLASS "B"

CLASS "B" BEDDING

TABLE IV

| PIPE SIZE - D | MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE |
|---------------|--|
| 18" & SMALLER | 6" |
| 21" TO 36" | 6" |
| 42" TO 60" | 6" |
| 66" TO 96" | 8" |
| 104" & LARGER | 12" |

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------------|------|------|------|
| APPROVED: | PVR | 5/98 | 2/02 |
| DIRECTOR OF ENGINEERING | | | |

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING CLASS "B"

TYPE I CONCRETE ENCASEMENT FOR SANITARY SEWERS

GENERAL NOTES FOR TYPE I, II, III ENCASEMENT

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED, BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
 - TYPE I & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST TO FEET EACH SIDE OF WATER MAIN.
 - UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I & II ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAIL DETAIL SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF B_c & $d_c \leq 6'$.
 - CONCRETE CLASS "B" BEDDING IF d_c & $d_c > 6'$ (IF $d_c > 6'$ FOR TYPE III ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
 - SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
 - THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS. IN CERTAIN SITUATIONS THE REQUIRED DIMENSION T_2 IS EXTREMELY LARGE. PIER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY BE REQUIRED, IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAIL DETAIL SEPARATELY ON PLAN AND PROFILE DRAWINGS.

TABLE I

| SCALE | NONE | DATE | 2/98 |
|-------------------|------|------|------|
| APPROVED: | JFN | 5/98 | 1/16 |
| DISTRICT ENGINEER | | | |

PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASEMENT TYPE I

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UTILITY NOTIFICATION CENTER OF COLORADO

APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

10333 E. Dry Creek Rd.
Denver, CO 80231
Tel: (720) 482-9526
Fax: (720) 482-9548

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILMING 7 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
CHECKED BY: JJ
DATE: AUGUST 2017

FILE NO: 8130283701

SHEET NUMBER: 10

DATE: AUGUST 2017

NO. Revisions

INIT. Date

APPR. Date

MECHANICAL JOINT RESTRAINT

WEDGE DETAIL BOLT HOLE DETAIL

| NOMINAL PIPE SIZE | NO. OF BOLTS | NO. OF WEDGES | K2 INCHES | K1 INCHES | F INCHES | M INCHES |
|-------------------|--------------|---------------|-----------|-----------|----------|----------|
| 4" | 2 | 2 | | | | |
| 6" | 3 | 3 | 11.12 | 9.5 | 7.00 | 0.88 |
| 8" | 4 | 4 | 13.37 | 11.75 | 8.75 | 1.00 |
| 10" | 5 | 5 | 15.62 | 14.00 | 11.20 | 1.00 |
| 12" | 6 | 6 | 17.88 | 16.25 | 13.30 | 1.25 |
| 14" | 7 | 7 | 20.13 | 18.50 | 15.40 | 1.50 |
| 16" | 8 | 8 | 22.38 | 20.75 | 17.50 | 1.75 |
| 18" | 9 | 9 | 24.63 | 23.00 | 19.60 | 2.00 |
| 20" | 10 | 10 | 26.88 | 25.25 | 21.70 | 2.25 |
| 24" | 14 | 14 | 35.63 | 34.00 | 29.00 | 3.00 |

NOTES:
1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.

**PARKER WATER & SANITATION DISTRICT
MECHANICAL JOINT RESTRAINT DETAILS**

SCALE: NONE DATE: 2/96

APPROVED: 2/90
PVR 12/07
DIRECTOR OF ENGINEERING 1/16

2016 REVISION SHEET W3.17

11-1/4", 22-1/2", 45" & 90" BENDS DEAD END

TEE

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

| SIZE OF PIPE | 11-1/4" BENDS | 22-1/2" BENDS | 45" BENDS | 90" BENDS | TEE OR DEAD END |
|--------------|---------------|---------------|-----------|-----------|-----------------|
| 4" | 1.00 | 1.20 | 1.00 | 1.80 | 1.50 |
| 6" | 1.00 | 1.45 | 1.25 | 2.00 | 2.00 |
| 8" | 1.00 | 1.70 | 1.50 | 2.25 | 2.25 |
| 10" | 1.00 | 1.95 | 1.75 | 2.50 | 2.50 |
| 12" | 1.00 | 2.20 | 2.00 | 2.75 | 2.75 |
| 14" | 1.00 | 2.45 | 2.25 | 3.00 | 3.00 |
| 16" | 1.00 | 2.70 | 2.50 | 3.25 | 3.25 |
| 18" | 1.00 | 2.95 | 2.75 | 3.50 | 3.50 |
| 20" | 1.00 | 3.20 | 3.00 | 3.75 | 3.75 |
| 24" | 1.00 | 3.70 | 3.50 | 4.25 | 4.25 |

NOTES:
1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
2. WATER HAMMER: 1" C.P. 16", 20" AND 24" WATER HAMMER = 70 PSI.
3. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

**PARKER WATER & SANITATION DISTRICT
CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION**

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.18

24" DIAMETER RING AND COVER

HALF PLAN

TYPICAL CROSS SECTION

NOTES:
1. Coating Specifications: ASTM A-48 With A Minimum Tensile Strength of 20 KSI (Class 20)
2. All Castings to be Dipped in Asphalt Base Coat (Or Approved Lead)

**PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER**

SCALE: NONE DATE: 6/20

APPROVED: 12/07
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.19

ACCESS MANHOLE AND AIR VALVE ASSEMBLY

NOTES:
1. USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPES.
2. RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY (SEE DETAIL SHEET W6.3).
3. SEE SHEET W3.6 FOR CONCRETE MANHOLE BASE BEAMS AND AIR/VACUUM VALVE DETAILS.

**PARKER WATER & SANITATION DISTRICT
ACCESS MANHOLE ASSEMBLY**

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.20

STANDARD TRENCH SECTION

STREET CUT PATCH

NOTE: MINIMUM COVER TO BE BELOW OFFICIAL STREET GRADE.

| PIPE DIAMETER | MINIMUM WIDTH | MAXIMUM WIDTH |
|---------------|---------------|---------------|
| 4" | 1'-4" | 2'-4" |
| 6" | 1'-6" | 2'-6" |
| 8" | 1'-8" | 2'-8" |
| 10" | 2'-0" | 3'-0" |
| 12" | 2'-2" | 3'-2" |
| 14" | 2'-4" | 3'-4" |
| 16" | 2'-6" | 3'-6" |
| 18" | 2'-8" | 3'-8" |
| 20" | 3'-0" | 4'-0" |
| 24" | 3'-6" | 4'-6" |

**PARKER WATER & SANITATION DISTRICT
TYPICAL TRENCH SECTION PIPE PROTECTION**

SCALE: NONE DATE: 2/96

APPROVED: 5/98
PVR 2/02
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.1

PIPE BEDDING

(a) Installation of Bedding and Pipes: After completion of the trench excavation and proper preparation of the foundation, six inches (6") of bedding material shall be placed on the trench bottom for support under the pipe. Bed holes shall be dug deep enough to provide a minimum of two inches (2") of clearance between the soil and bedding material. All pipe shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade, and the joint is made, the bedding material shall be carefully placed and tamped under the fullness of the pipe and in the previously dug bed holes.

Tamping is herein defined as the act of placing approved bedding material under the fullness of the pipe, paying particular attention to voids, bed holes, and sump holes. The purpose of tamping is to ensure uniform support for the pipe.

The limits of bedding shall be from six inches (6") below the bottom of the pipe to twelve inches (12") above the top of the pipe. Approved bedding may then be installed to the groundline. See Chapter 2 of these Standards for details and composition of bedding.

Composition of bedding is not required. The only requirement is sufficient tamping to achieve uniform support under the pipe. See Sheet W4.1 of the Standard Details for a typical trench cross section.

(b) Bedding Material: The bedding material shall be a clean well-graded sand or spongy sand and shall conform to the following limits when tested by means of laboratory tests:

Well-Graded Sand for (24-inch or large diameter)

| Sieve Size | Total Percent Passing by Weight |
|------------|---------------------------------|
| 3/8 inch | 100 |
| No. 4 | 70-100 |
| No. 6 | 35-83 |
| No. 16 | 20-80 |
| No. 30 | 5-60 |
| No. 50 | 2-30 |
| No. 100 | 1-10 |
| No. 200 | 0-3 |

Spongy Sand for use with 20-inch or smaller

| Sieve Size | Total Percent Passing by Weight |
|------------|---------------------------------|
| 3/8 inch | 100 |
| No. 200 | 0-3 |

If approved by the District, fines from the trench walls and spoils pile may be used to provide uniform support for the pipe. No rock or stone larger than that allowed by the sieve analysis, or any other detrital materials, shall be placed closer to the pipe than six inches (6"). Approved bedding materials shall be stockpiled on the jobsite to be used in the event natural materials become unsatisfactory. The District reserves the right to require the use of the specified bedding material at any time.

**PARKER WATER & SANITATION DISTRICT
PIPE BEDDING**

SCALE: NONE DATE: 2/96

APPROVED: 5/98
PVR 2/02
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.2

WATERLINE ENCASEMENT

PLAN VIEW

PROFILE

TYPICAL SECTION

NOTES:
1. ALL CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3,000 PSI USING TYPE I PORTLAND CEMENT AND 3/4" AGGREGATE. ALL CONCRETE SHALL HAVE 5-7% ENTRAINED AIR CONTENT AND A MAXIMUM SLUMP OF 4".
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
3. ALL REINFORCEMENT SHALL HAVE 2" MIN. CONCRETE COVER.
4. THE SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY PRIOR TO FORMING THE STRUCTURE.
5. PIPE SHALL BE WRAPPED WITH FELT LAYER BEFORE ENCASEMENT.

**PARKER WATER & SANITATION DISTRICT
WATERLINE ENCASEMENT**

SCALE: NONE DATE: 5/20

APPROVED: 1/16
PVR 10/16
DIRECTOR OF ENGINEERING

2016 REVISION SHEET W4.3

BORED CROSSINGS BENEATH CONDUITS

PLAN FOR PERPENDICULAR CROSSING

PLAN FOR ANGLE CROSSING

PROFILE

FORMULA FOR FINDING C:
 $C = B + (2)(1.5) \left[\frac{B}{2} + A + F \right]$

FORMULA FOR FINDING L:
 $L = \frac{C}{\sin \phi}$

**PARKER WATER & SANITATION DISTRICT
BORED CROSSINGS BENEATH CONDUITS**

SCALE: NONE DATE: 2/96

APPROVED: 2/00
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.4

APPROVED
Feb 20 2020
PARKER WATER AND SANITATION DISTRICT

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10338 E. Dry Creek Rd.
Suite 410
Englewood, CO 80150
Tel: (720) 482-9526
Fax: (720) 482-9548

CVL CONSULTANTS

HR 935 LLC
7253 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILM 7 CONSTRUCTION DRAWINGS
WATER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JU
DATE: AUGUST 2017

SHEET NUMBER: 15

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