

# ADVENTHEALTH PARKER EXPANSION

CROWN POINT FILING 1 AMMENDMENT 30, LOT 1, TRACT A & B  
SITUATED IN THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN,  
TOWN OF PARKER, COUNTY OF DOUGLAS, STATE OF COLORADO



### ENGINEER'S STATEMENT

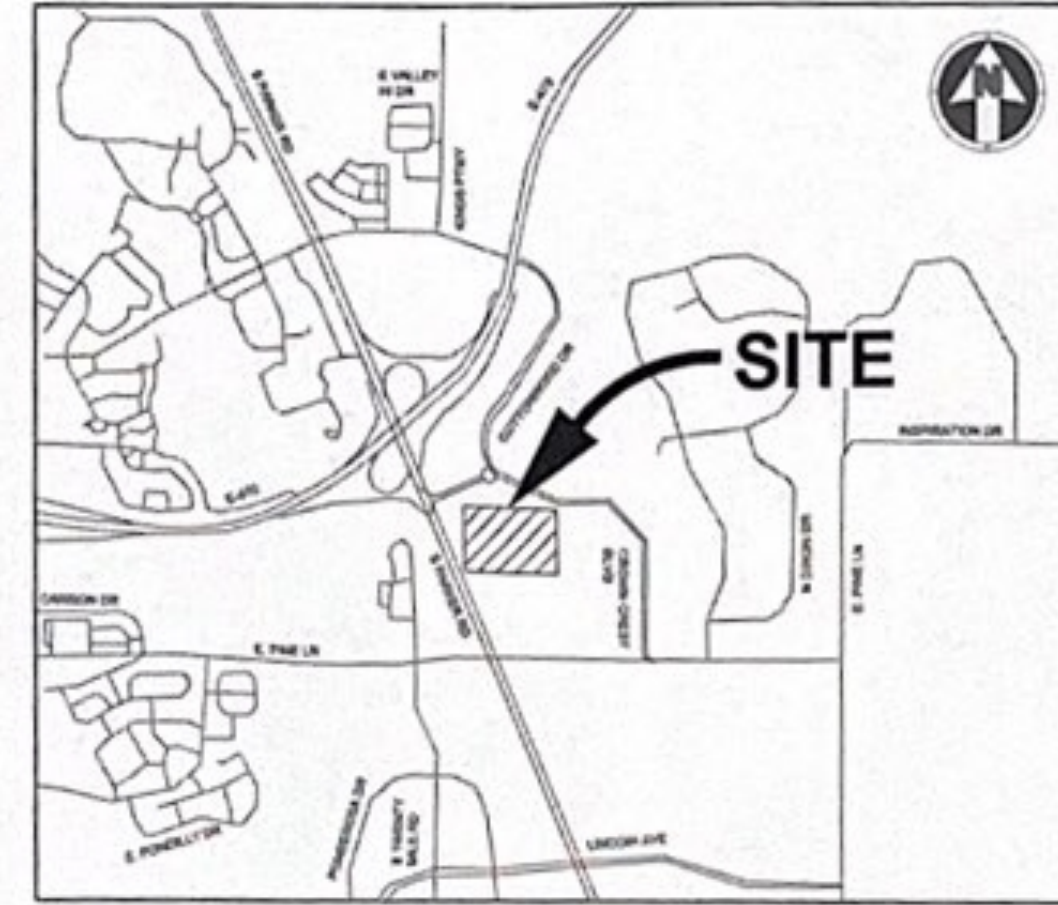
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF COLORADO.



MEGAN HUERTER VOGT  
REGISTERED PROFESSIONAL ENGINEER  
COLORADO NO. 47666

12/18/24

DATE SIGNED



VICINITY MAP  
SCALE: 1"=2000'

Sheet Number	Sheet Title
A-C500	WATER AND SANITARY COVER SHEET
A-C501	WATER AND SANITARY NOTES AND LEGEND
A-C511	UTILITY PLAN
A-C512	UTILITY PLAN
A-C531	SANITARY PLAN AND PROFILE
A-C532	SANITARY PLAN AND PROFILE
A-C533	WATER PLAN AND PROFILE
A-C551	WATER AND SANITARY DETAILS
A-C552	WATER AND SANITARY DETAILS
A-C111*	DEMOLITION PLAN
A-C112*	DEMOLITION PLAN

SHEET LIST NOTE: DEMOLITION PLANS INCLUDED FOR REFERENCE\*

### GENERAL NOTES :

- NO VERTICAL CONSTRUCTION ON THIS SITE WILL BE ALLOWED UNTIL SUCH TIME THAT CURB, GUTTER, AND FIRST LIFT ASPHALT ARE INSTALLED. A SITE INSPECTION WILL BE REQUIRED TO ENSURE THAT THIS REQUIREMENT IS MADE PRIOR TO ALLOWING VERTICAL CONSTRUCTION TO COMMENCE

### FIRE FLOW BLOCK

TOTAL FIRE FLOW REQUIRED FOR THIS SITE IS 1,500 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE  
THIS FLOW MUST BE PROVIDED FROM A MINIMUM OF 1 FIRE HYDRANTS  
INDIVIDUALLY EACH FIRE HYDRANT MUST SUPPLY 1500 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE

CODE USED FOR ANALYSIS: 2021 IFC WITH APPENDICES B, C AND D

OCCUPANCY TYPE: 1-2

CONSTRUCTION TYPE: 1A

FIRE FLOW CALCULATION AREA: 80,390 SF  
TOTAL BUILDING AREA: 186,225 SF

BUILDING IS ANTICIPATED TO BE CONSTRUCTED WITH AN AUTOMATED FIRE SPRINKLER SYSTEM (NFPA 13) SO FIRE FLOW REQUIREMENT HAS BEEN REDUCED BY 50%.

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

Fire Code Official or Designated Representative \_\_\_\_\_ Date \_\_\_\_\_

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

**COTTONWOOD WATER AND SANITATION DISTRICT SIGNATURE**  
THE DISTRICT ENGINEER MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL MULHERN MRE, INC. AT 303-649-9857. THE DISTRICT ENGINEER AND SUPPORTING STAFF WILL OBSERVE THE WORK FOR COMPLIANCE WITH THE DISTRICTS SPECIFICATIONS. CONSTRUCTION OBSERVATION ASSISTS IN QUALITY CONTROL IN ACHIEVING CONFORMANCE WITH THE DISTRICT SPECIFICATIONS, BUT DOES NOT GUARANTEE THE CONTRACTORS PERFORMANCE. SUCH CONSTRUCTION OBSERVATIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO CONSTRUCT FACILITIES IN ACCORDANCE WITH REGULATIONS. WORK NOT PERFORMED IN ACCORDANCE WITH THE DISTRICT SPECIFICATIONS AND CONTRACT FOR THIS PROJECT WILL NOT BE ACCEPTED.

REVIEWED FOR COTTONWOOD WATER & SANITATION DISTRICT

*Scott Barnett* 12/18/24  
DISTRICT ENGINEER DATE

MATERIALS LIST	
ITEM	QUANTITY
12" DIP	306 LF
8" DIP	74 LF
6" DIP	51 LF
4" DIP	137 LF
FIRE HYDRANT	1
4" WATER METER	1
12" GATE VALVE	2
8" GATE VALVE	1
6" GATE VALVE	2
4" GATE VALVE	1
12"x12" TEE	1
12"x8" TEE	1
12"x6" TEE	1
12"x4" TEE	1
45° BEND	1
22.5° BEND	2
11.25° BEND	1
VERTICAL BEND	4
10" PVC	923
4" MANHOLE	7
DUAL CLEANOUT	1

### BENCHMARK

DOUGLAS COUNTY CONTROL MONUMENT NO. 1.115026. 473.35± NORTH AND 1959.02± WEST | CORNER OF SECTION 3, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPLE MERIDIAN. 3-1/2" ALUMINUM CAP. ELEVATION 5759.78 (NAVD 88). AN ON SITE CONTROL POINT (200) HAS BEEN SET WITH AN ELEVATION OF 5825.42

### BASIS OF BEARING:

BEARINGS ARE BASED ON THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, BEING MONUMENTED ON THE SOUTH END BY A #6 REBAR WITH A 3.25" ALUMINUM CAP IN RANGE BOX "PLS 29412" AND ON THE NORTH END BY A #6 REBAR WITH A 3.25" ALUMINUM CAP "LS 9329". SAID LINE HAVING A BEARING OF NORTH 00°07'01" WEST, 2678.56 FEET AS DEPICTED ON THE CROWN POINT F#1, 4TH AMENDMENT PLAT. THE BEARINGS SHOWN ON THE SURVEY ARE BASED ON THE CROWN POINT FILING NO. 1, 17TH AMENDMENT. ON SITE CONTROL POINTS HAVE BEES SET. POINTS 200 AND 2201 WITH A BEARING OF N53°47'17" AND A DISTANCE OF 1,170.67'.

### OWNER INFORMATION

ADVENTHEALTH PARKER  
9395 CROWN CREST BLVD.  
PARKER, CO. 80138  
303-269-4014

### DESIGN INFORMATION

ARCHITECT: BOULDER ASSOCIATES  
PHONE: 303-499-7795

ARCHITECT: SMITHGROUP  
PHONE: 303-832-3272

CIVIL ENGINEER: S. A. MIRO, INC  
PHONE: 303-741-3737

LANDSCAPE ARCHITECT: OXBOW DESIGN COLLABORATION  
PHONE: 720-465-6168

STRUCTURAL ENGINEER: MGA STRUCTURAL ENGINEERS, INC.  
PHONE: 719-635-4473

MEPT ENGINEERS: CATOR RUMA & ASSOCIATES CO  
PHONE: 303-232-6200

FIRE PROTECTION: TLH FIRE  
PHONE: 303-517-1775

### AGENCY LIST

CORE ELECTRIC COOPERATIVE  
PO DRAWER A  
5496 US HWY 85  
SEDALIA, CO 80135  
303-688-3100  
CONTACT: BROOKS KAUFMAN

GAS-XCEL ENERGY  
2070 SOUTH VALENTIA STREET  
DENVER, CO. 80231  
1-800-628-2121  
CONTACT: DESIGN MANAGER

TOWN OF PARKER FIRE & LIFE SAFETY  
20120 E MAINSTREET  
PARKER, CO 80138  
303-805-3163  
CONTACT: RANDY CAPRA

TOWN OF PARKER  
PLANNING AND BUILDING DEPT.  
20120 E. MAIN STREET  
PARKER, CO 80134  
303-841-2332  
CONTACT: PAUL WORKMAN

TOWN OF PARKER-PUBLIC WORKS  
20120 E. MAINSTREET  
PARKER, CO 80134  
303-840-9546  
CONTACT: MIKE WAUGH

COTTONWOOD WATER AND SANITATION DISTRICT  
58 INVERNESS DRIVE EAST, SUITE 100  
ENGLEWOOD, CO 80112  
303-792-9509  
CONTACT: SCOTT BARNETT P.E.

CABLE-COMCAST  
6650 S. TUSCON WAY  
ENGLEWOOD, CO. 80112  
303-603-5605  
CONTACT: KEVIN YOUNG

TELEPHONE - CENTURY LINK  
LOCAL NETWORK OPERATIONS  
9750 E. COSTILLA AVENUE  
ENGLEWOOD, CO 80112  
303-792-1840  
CONTACT: KAREN CAIME

DOUGLAS COUNTY HEALTH DEPARTMENT  
410 S WILCOX  
CASTLE ROCK, CO 80104  
720-643-2400  
CONTACT: MICHAEL HILL

CROWN POINT ARCHITECTURAL  
CONTROL COMMITTEE  
27905 MEADOW DRIVE, SUITE 11  
EVERGREEN, CO 80439 303-674-7856  
CONTACT: TIM LEONARD

PROJECT: ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138

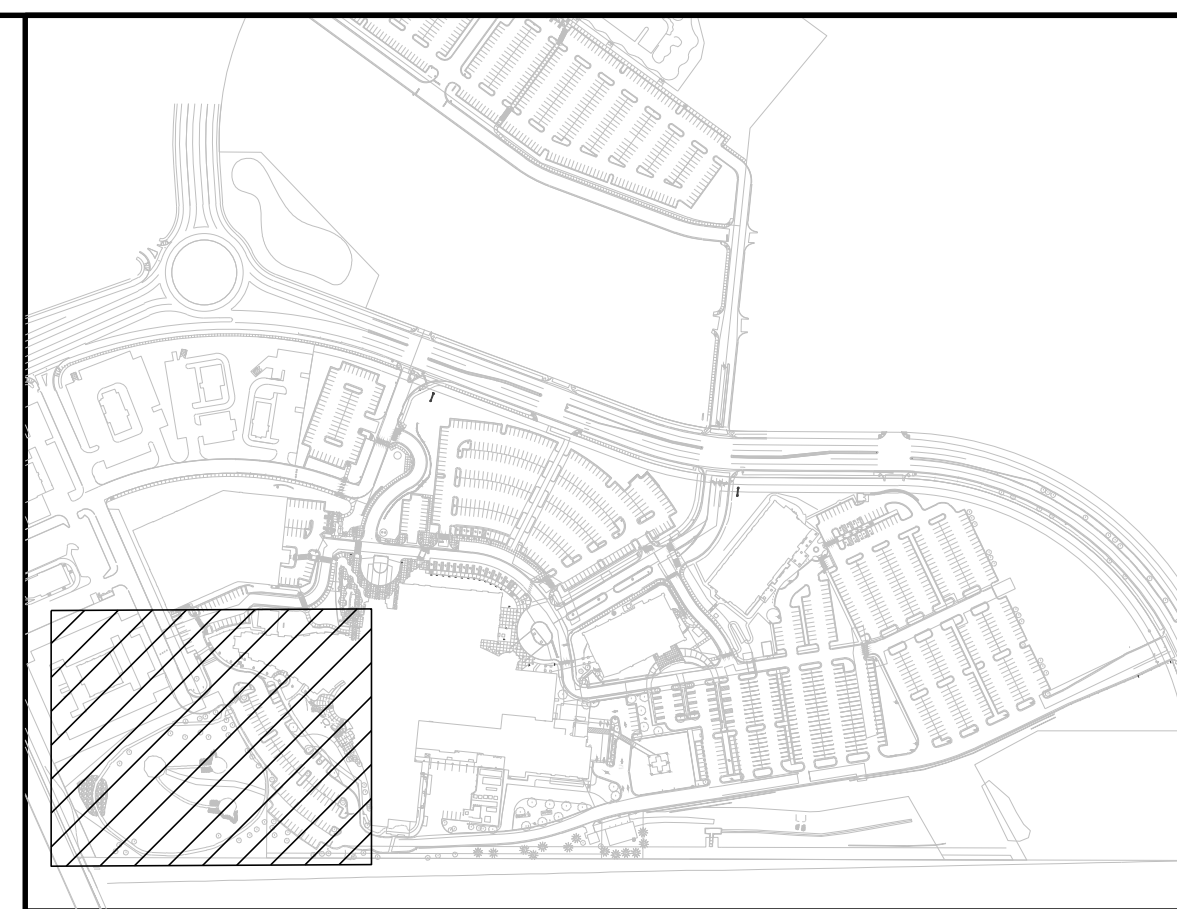
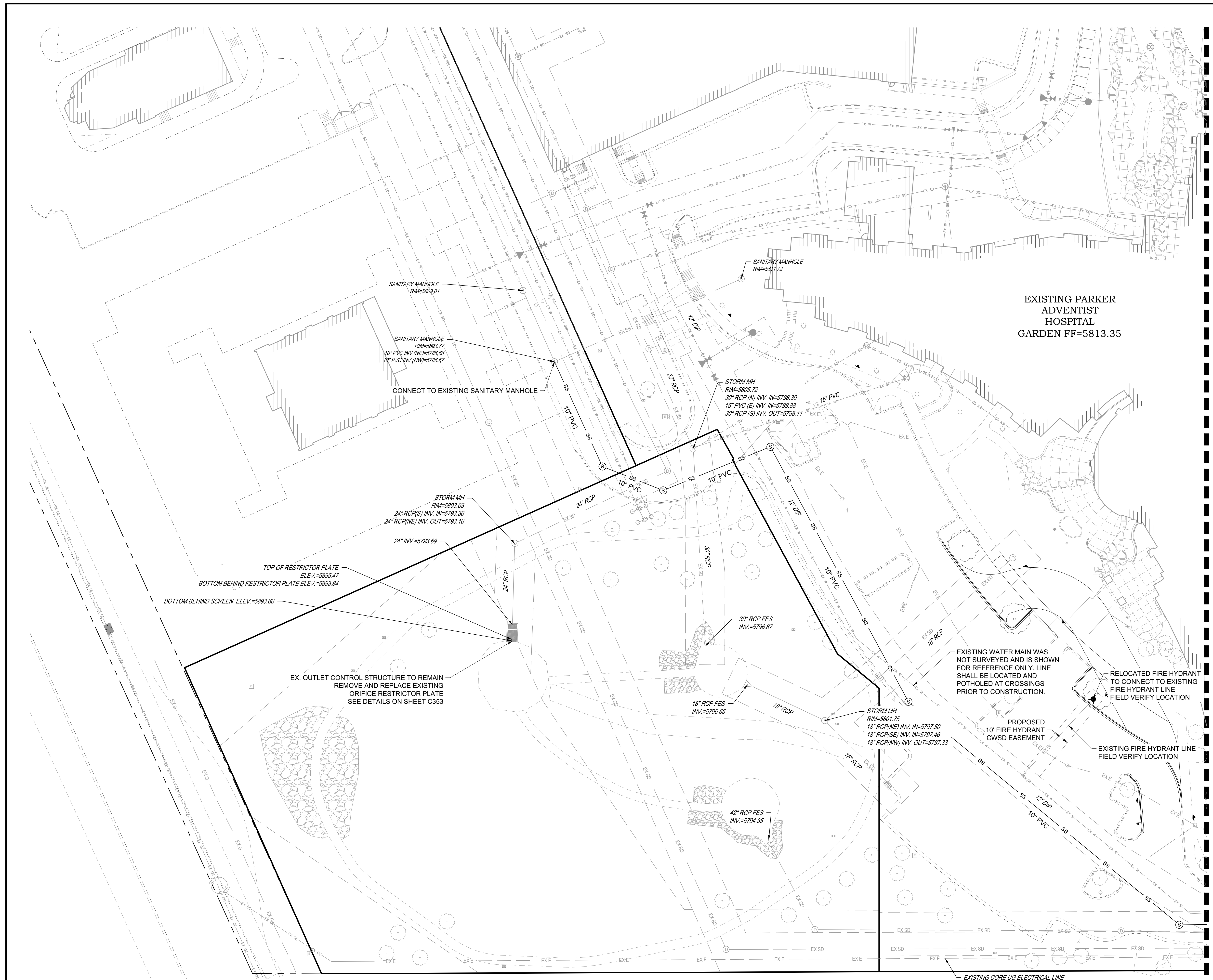
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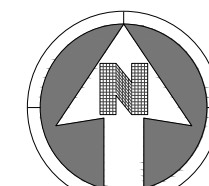
DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO: 23079  
DRAWING NUMBER:

**A-C500**





KEYMAP  
NTS



30 0 30  
SCALE: 1" = 30'

NOTES:

- SEE SHEET A-C501 FOR UTILITY NOTES AND LEGEND.

SEE SHEET A-C512

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CIVIL + STRUCTURAL  
CONSULTING ENGINEERS  
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Denver, CO 80237  
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DATE	DESCRIPTION
06/03/2024	1ST TOWN SUBMITTAL
08/16/2024	2ND TOWN SUBMITTAL
10/10/2024	3RD TOWN SUBMITTAL

NO.	DESCRIPTION
1	
2	
3	

PROJECT: **ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138**

DRAWING TITLE: **UTILITY PLAN**

FILE PATH: J:\Jobs\23079 AHP Expansion\05 CAD\Plans and Details\C511-UTIL-PLAN.dwg C511 - 12/17/2024



DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO. 23079

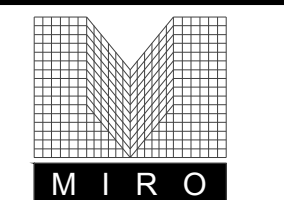
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**A-C511**

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.

Fire Code Official or Designated Representative \_\_\_\_\_ Date \_\_\_\_\_

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

EXISTING CORE UG ELECTRICAL LINE  
SKETCHED IN PER CORE MARKUP  
NOT SURVEYED  
LOCATE IN FIELD PRIOR TO CONSTRUCTION



**S. A. MIRO, INC.**  
CIVIL + STRUCTURAL  
CONSULTING ENGINEERS

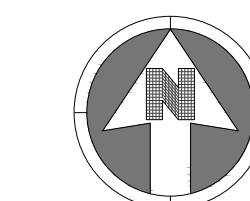
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NTS

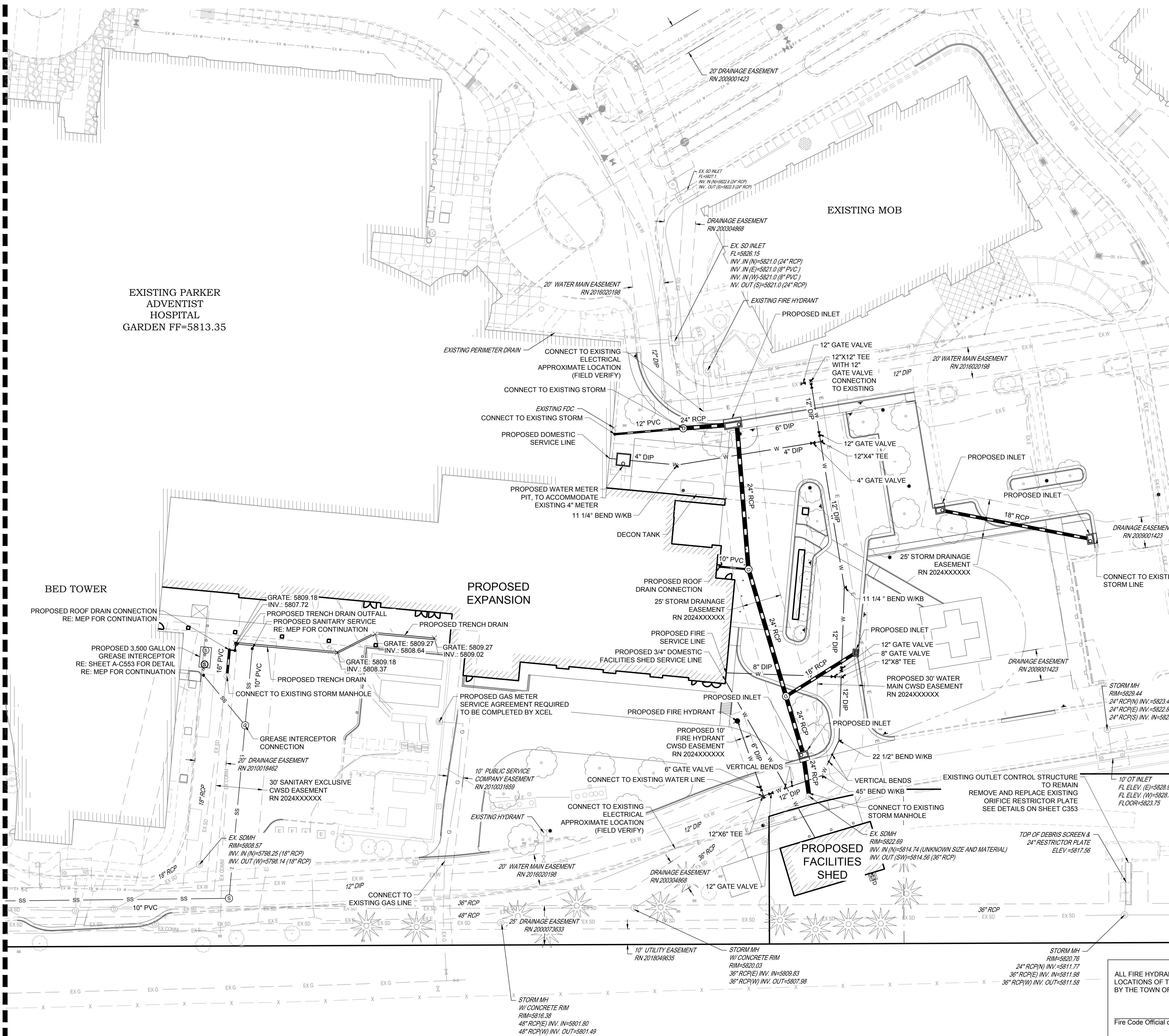


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SCALE: 1" = 30'

**NOTES:**

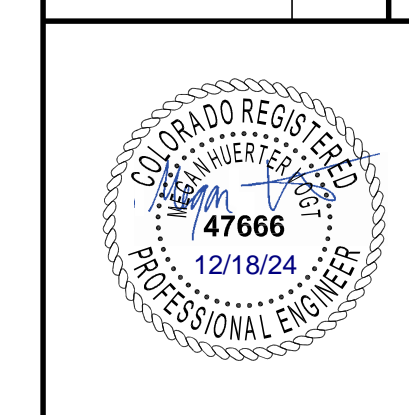
- SEE SHEET A-C501 FOR UTILITY NOTES AND LEGEND.

SEE SHEET A-C511



DATE	DESCRIPTION
06/03/2024	1ST TOWN SUBMITTAL
08/16/2024	2ND TOWN SUBMITTAL
10/10/2024	3RD TOWN SUBMITTAL

NO.	DESCRIPTION
1	
2	
3	



DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO. 23079

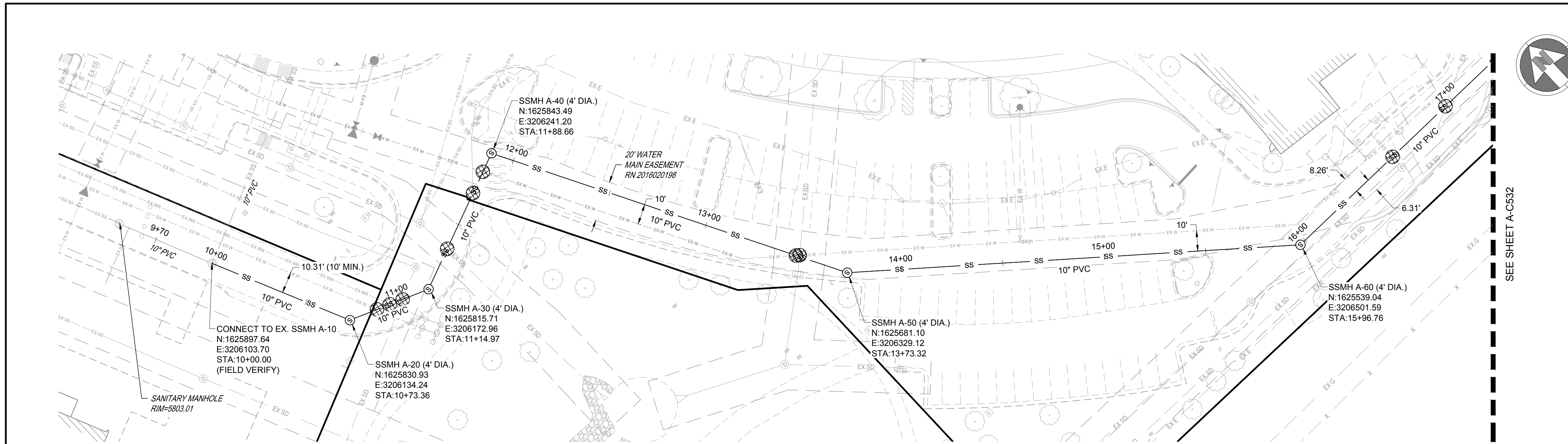
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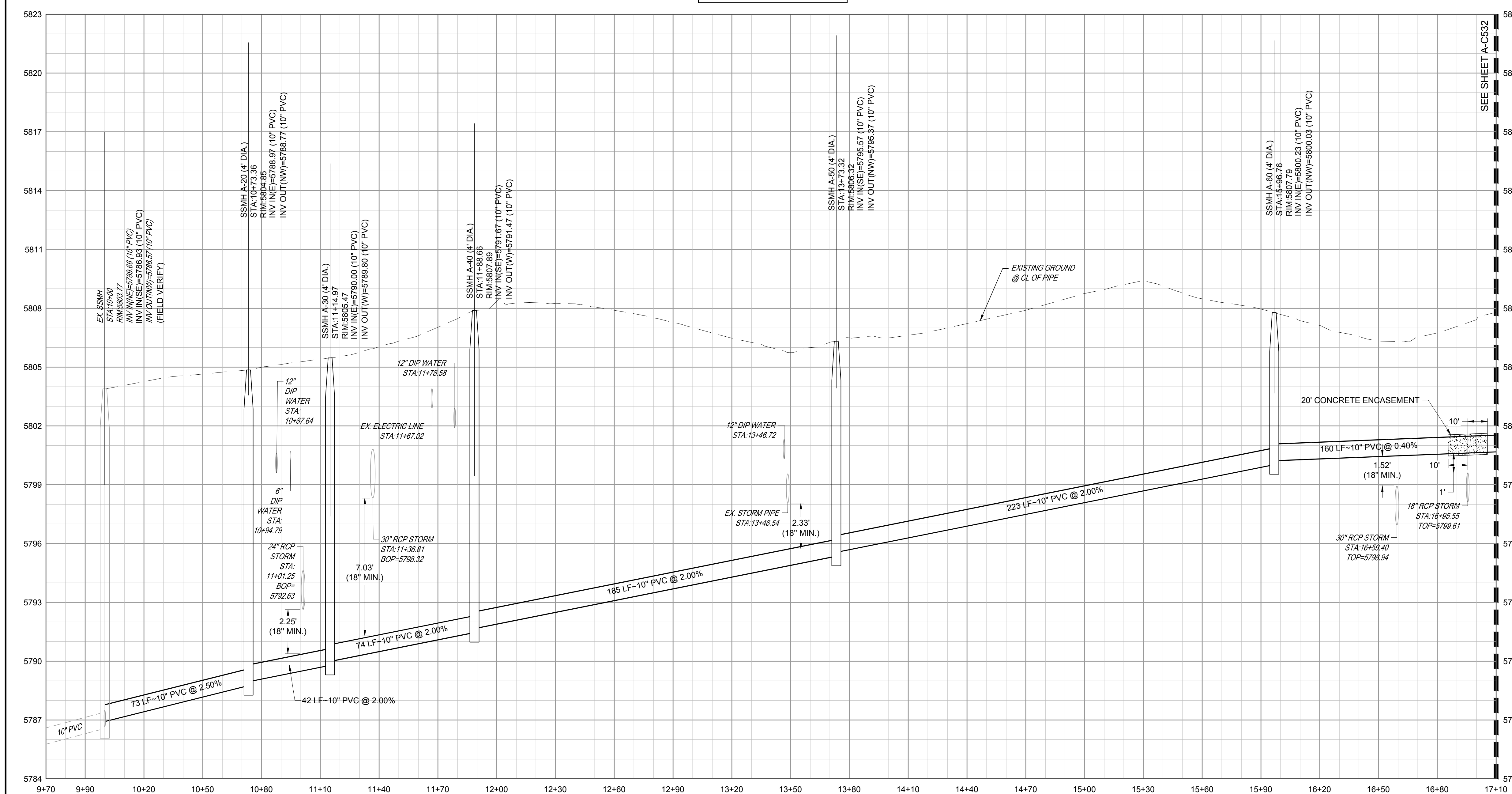
(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENTS OF NFPA 24 WHEN SUBMITTING FOR REVIEW.)

PROJECT: ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138  
DRAWING TITLE: UTILITY PLAN  
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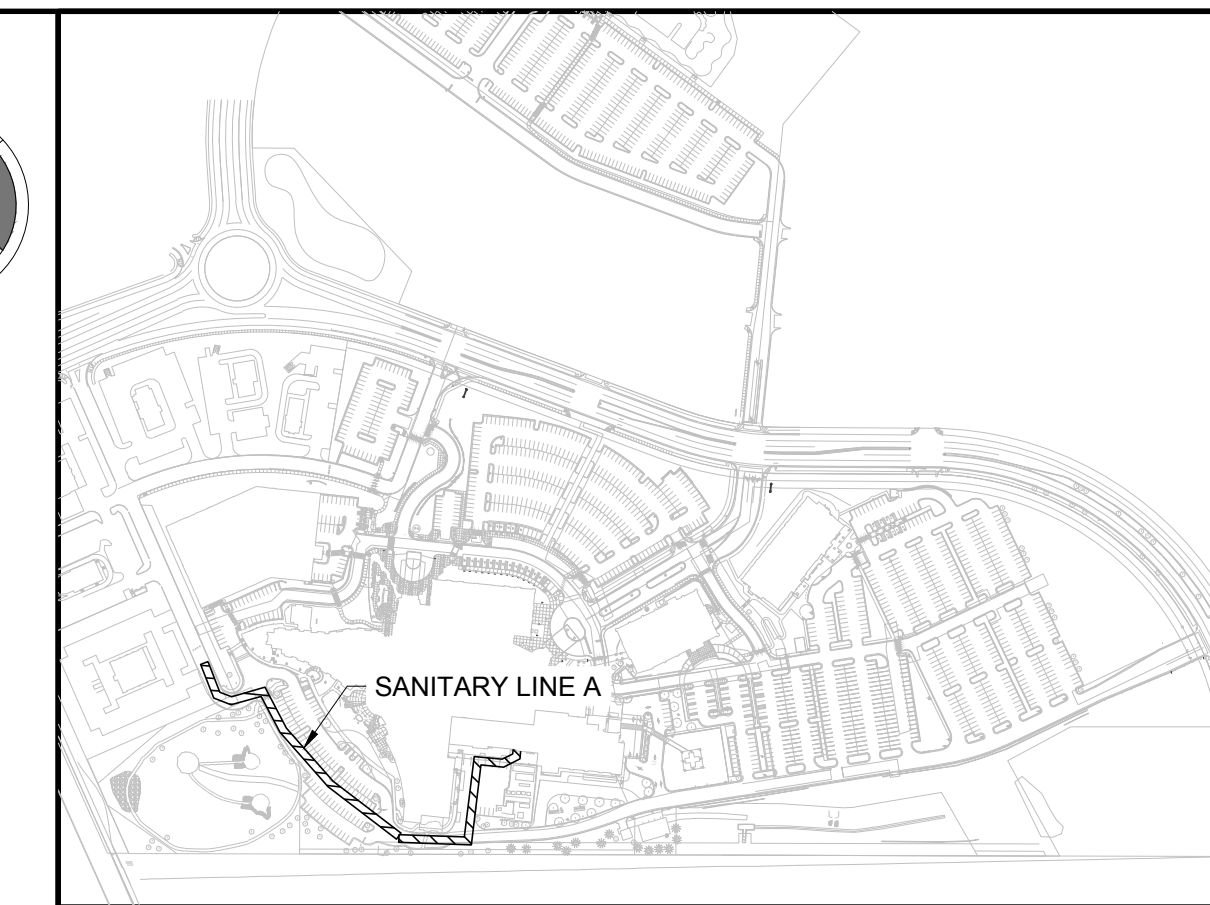


SANITARY LINE A PLAN

VERTICAL SCALE: 1"=3'  
HORIZONTAL SCALE: 1"=30'



SANITARY LINE A PROFILE



KEYMAP  
NTS  
SCALE: 1"=30'

- NOTES:
- SEE SHEET A-C501 FOR SANITARY NOTES AND LEGEND.
  - ALL EXISTING DRY UTILITIES ARE ASSUMED TO BE 3' DEEP TO TOP OF PIPE.
  - ALL EXISTING WATER LINES ARE ASSUMED TO BE 4.5' DEEP TO TOP OF PIPE.
  - THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS IMMEDIATELY.
  - ALL SANITARY SEWER MAINS TO BE SDR 35 PVC (GREEN), UNLESS SPECIFIED OTHERWISE.

LEGEND:

UTILITY CROSSING

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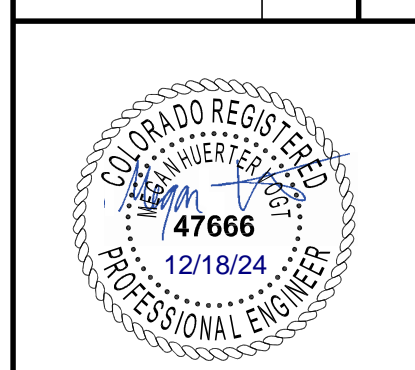
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PROJECT: **ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138**

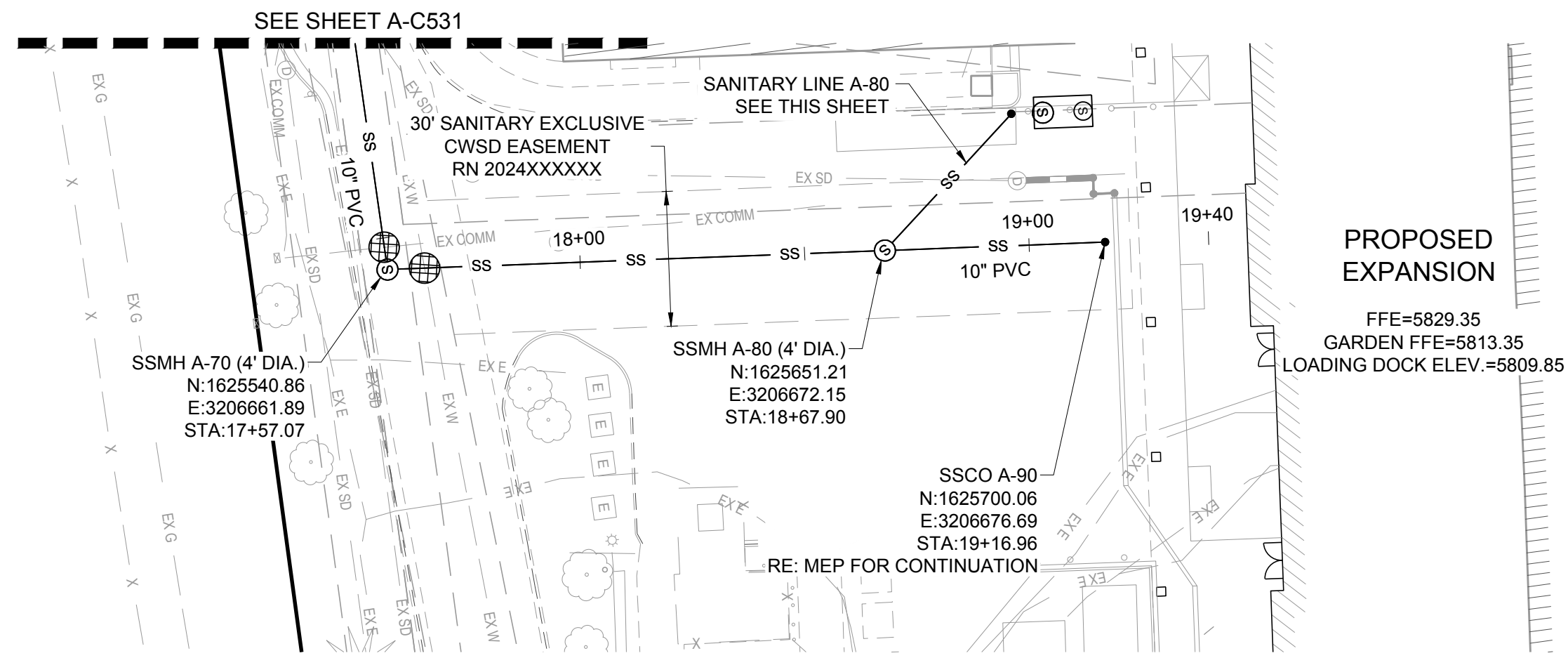
DRAWING TITLE: **SANITARY PLAN AND PROFILE**

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DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO. 23079

DRAWING NUMBER:  
**A-C531**



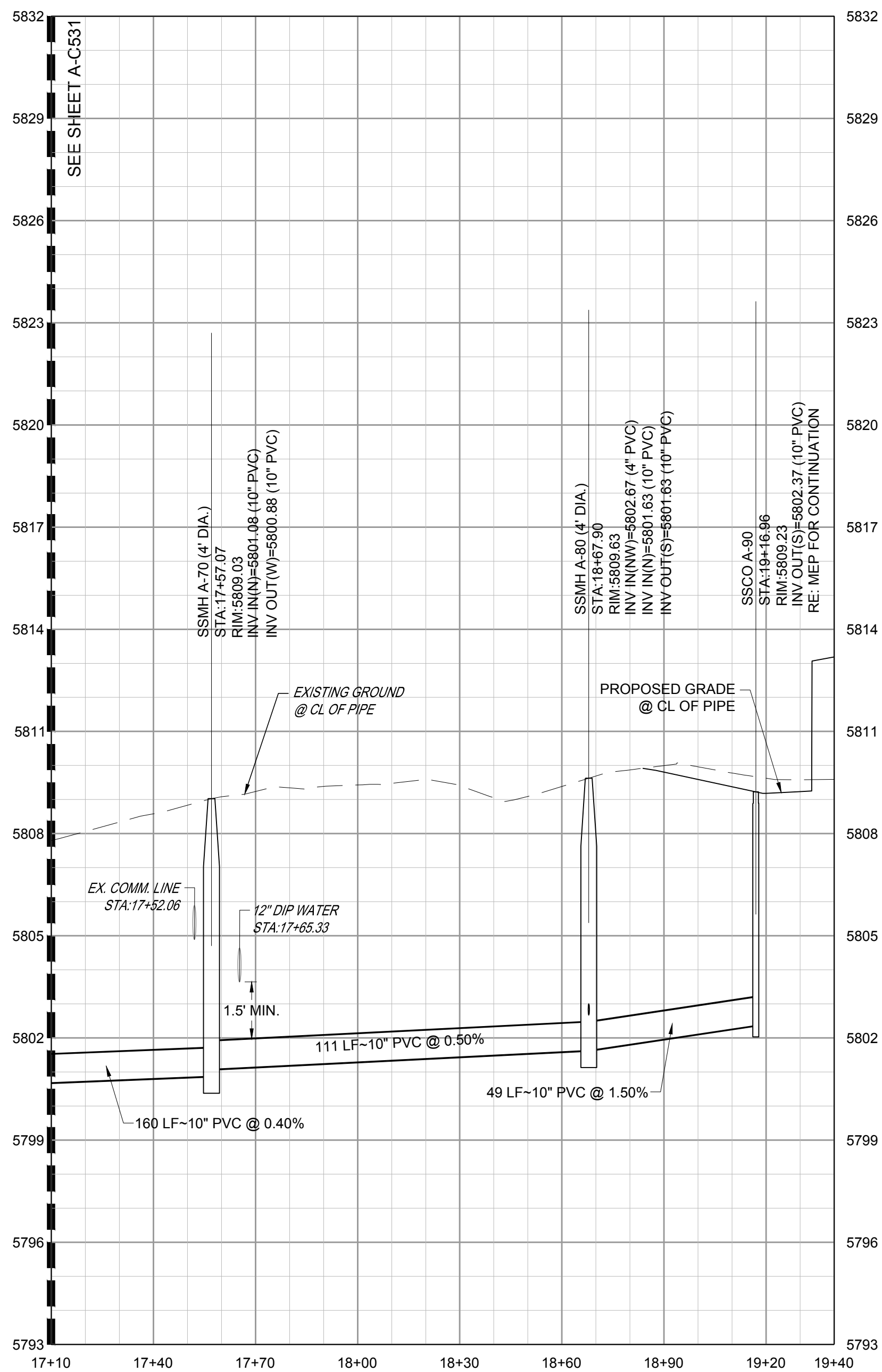
EXISTING PARKER ADVENTIST HOSPITAL

PROPOSED EXPANSION

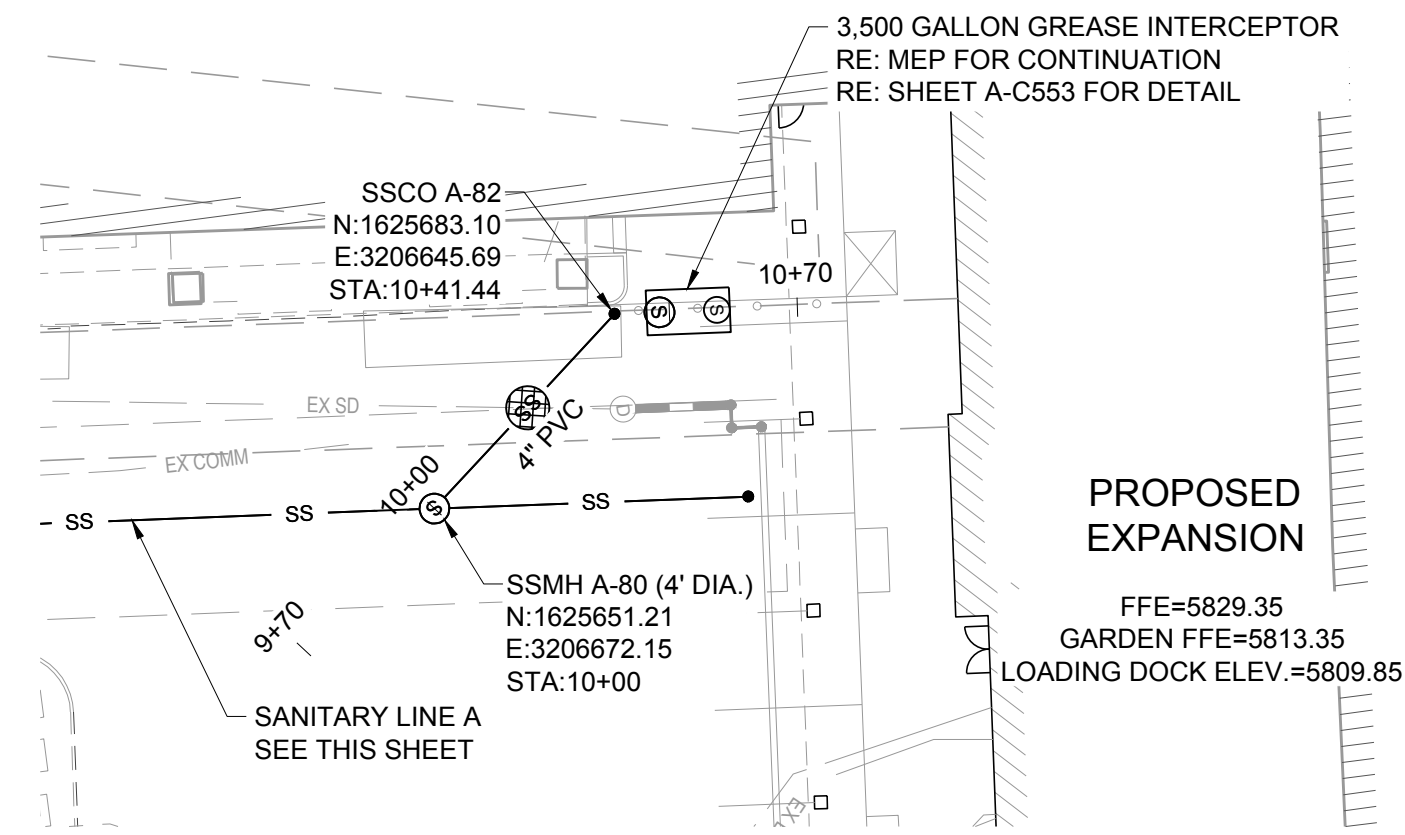
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GARDEN FFE=5813.35  
LOADING DOCK ELEV.=5809.85

SANITARY LINE A PLAN (CONTINUED)

VERTICAL SCALE: 1"=3'  
HORIZONTAL SCALE: 1"=30'



SANITARY LINE A PROFILE (CONTINUED)

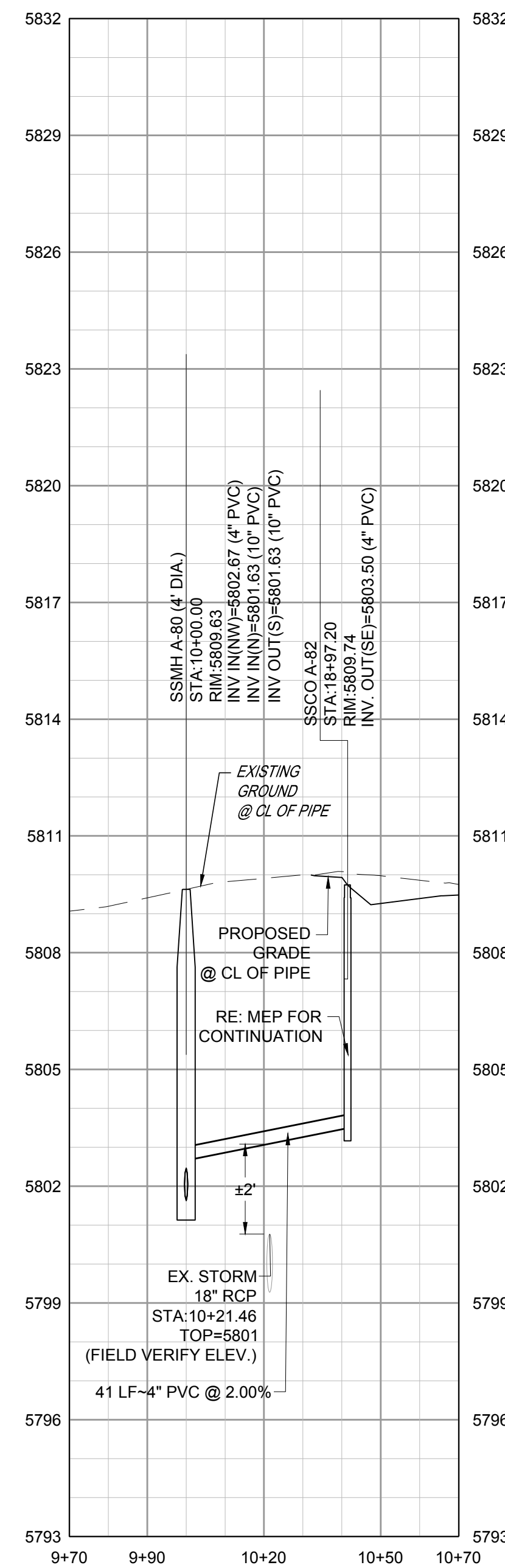


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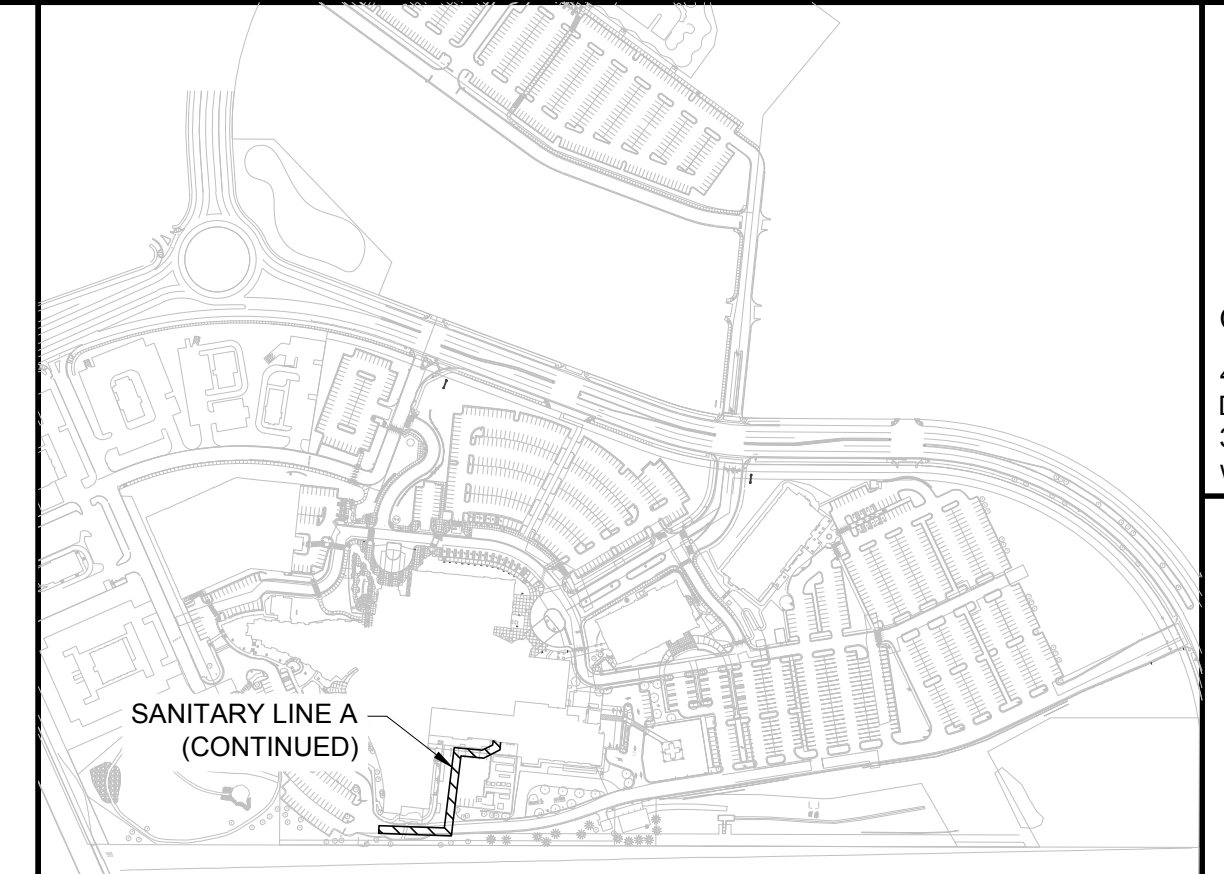
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GARDEN FFE=5813.35  
LOADING DOCK ELEV.=5809.85

SANITARY LINE A-80 PLAN

VERTICAL SCALE: 1"=3'  
HORIZONTAL SCALE: 1"=30'

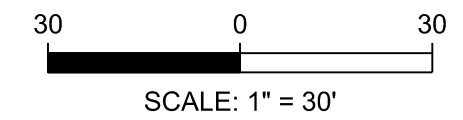


SANITARY LINE A-80 PROFILE



KEYMAP

NTS



NOTES:

- SEE SHEET A-C501 FOR SANITARY NOTES AND LEGEND.
- ALL EXISTING DRY UTILITIES ARE ASSUMED TO BE 3' DEEP TO TOP OF PIPE.
- ALL EXISTING WATER LINES ARE ASSUMED TO BE 4.5' DEEP TO TOP OF PIPE.
- THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS IMMEDIATELY.
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LEGEND:

UTILITY CROSSING

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3	3RD TOWN SUBMITTAL	10/10/2024

PROJECT: **ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138**

DRAWING TITLE: **SANITARY PLAN AND PROFILE**

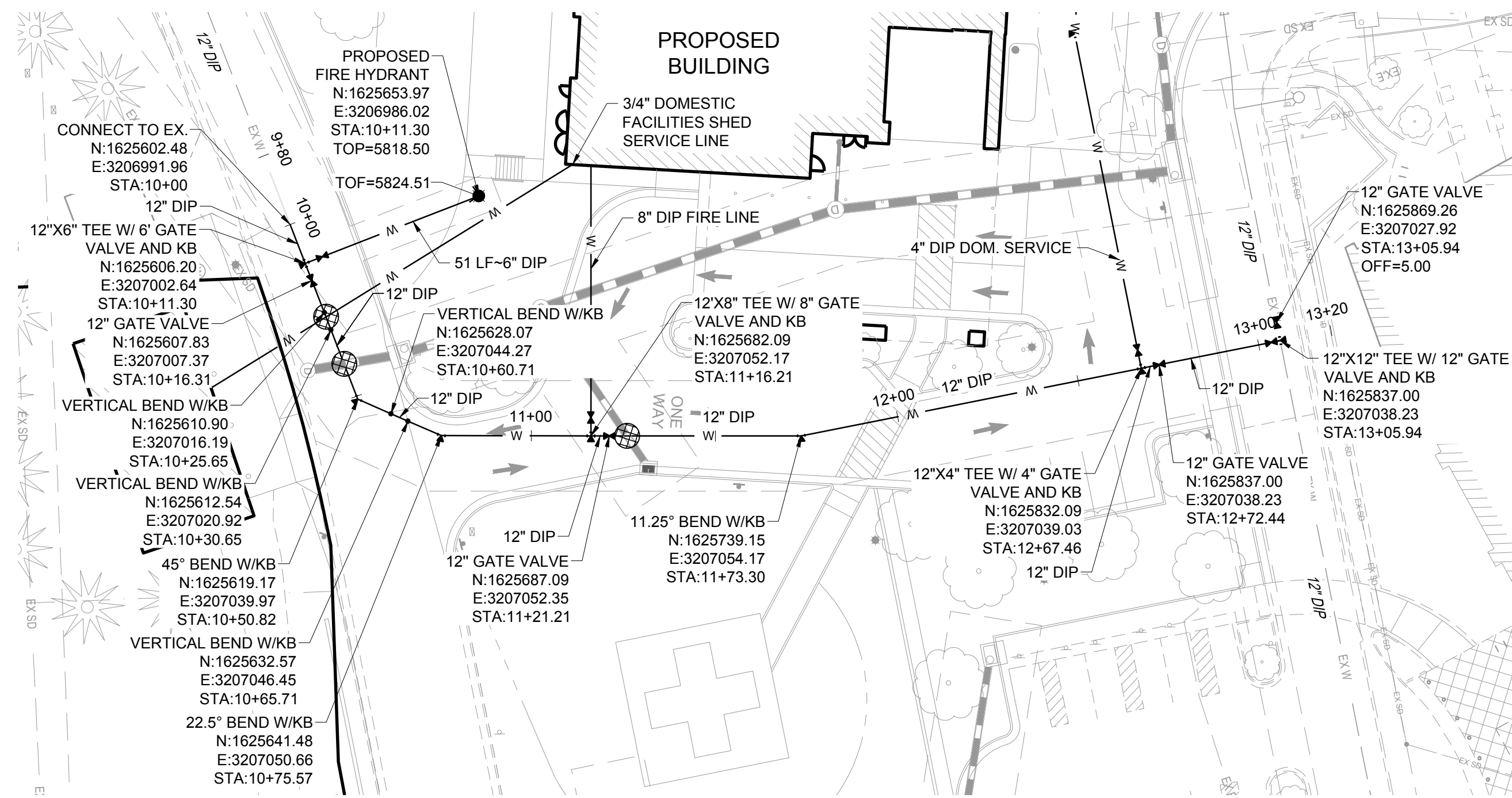
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DESIGNED BY: R/JH  
DRAWN BY: E/DS  
CHECKED BY: M/HV  
MIRO JOB NO. 23079

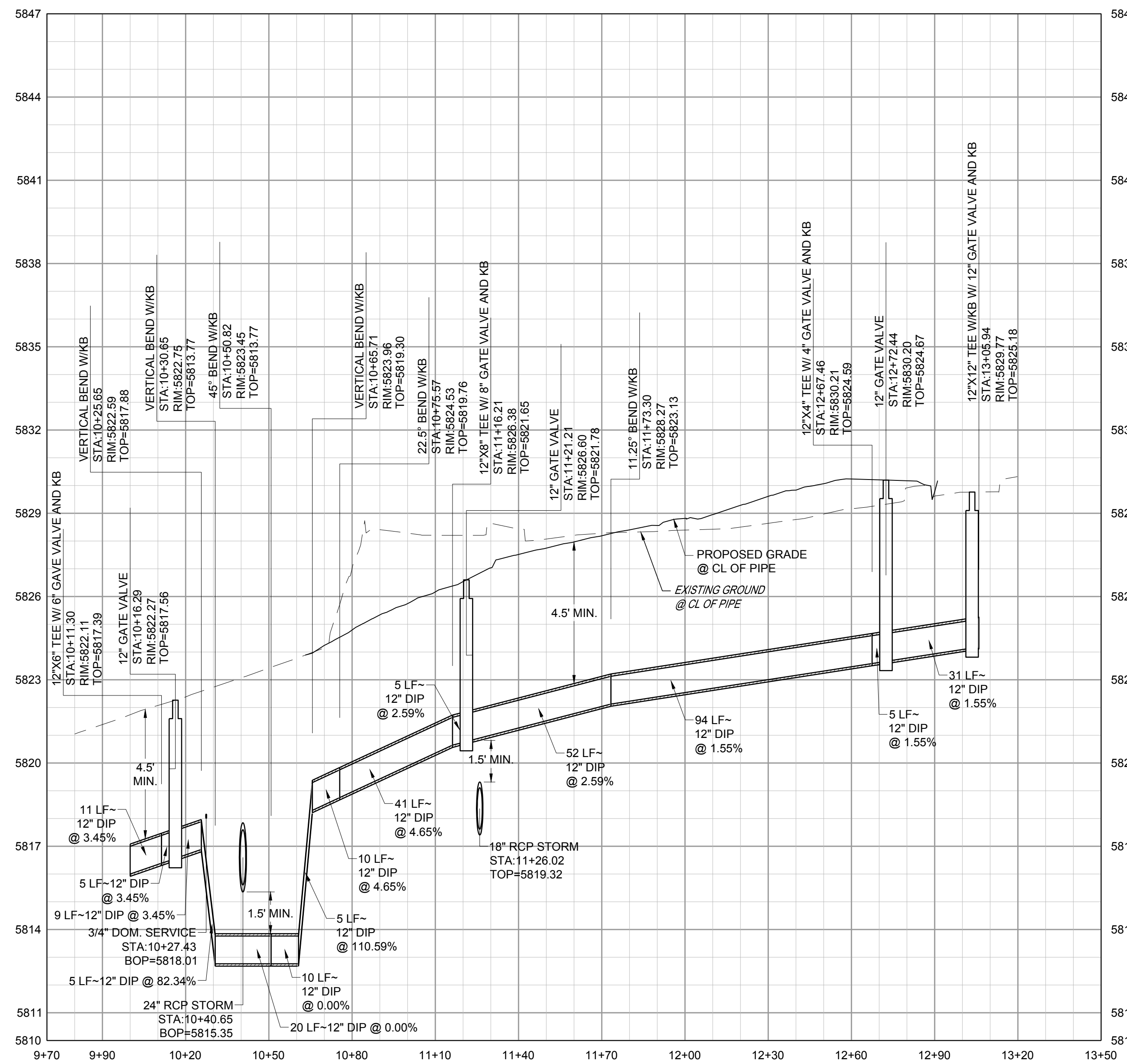
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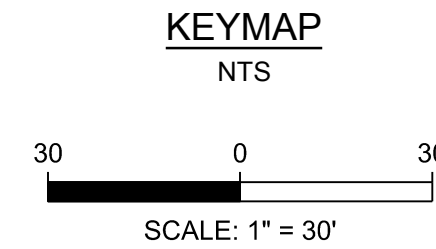
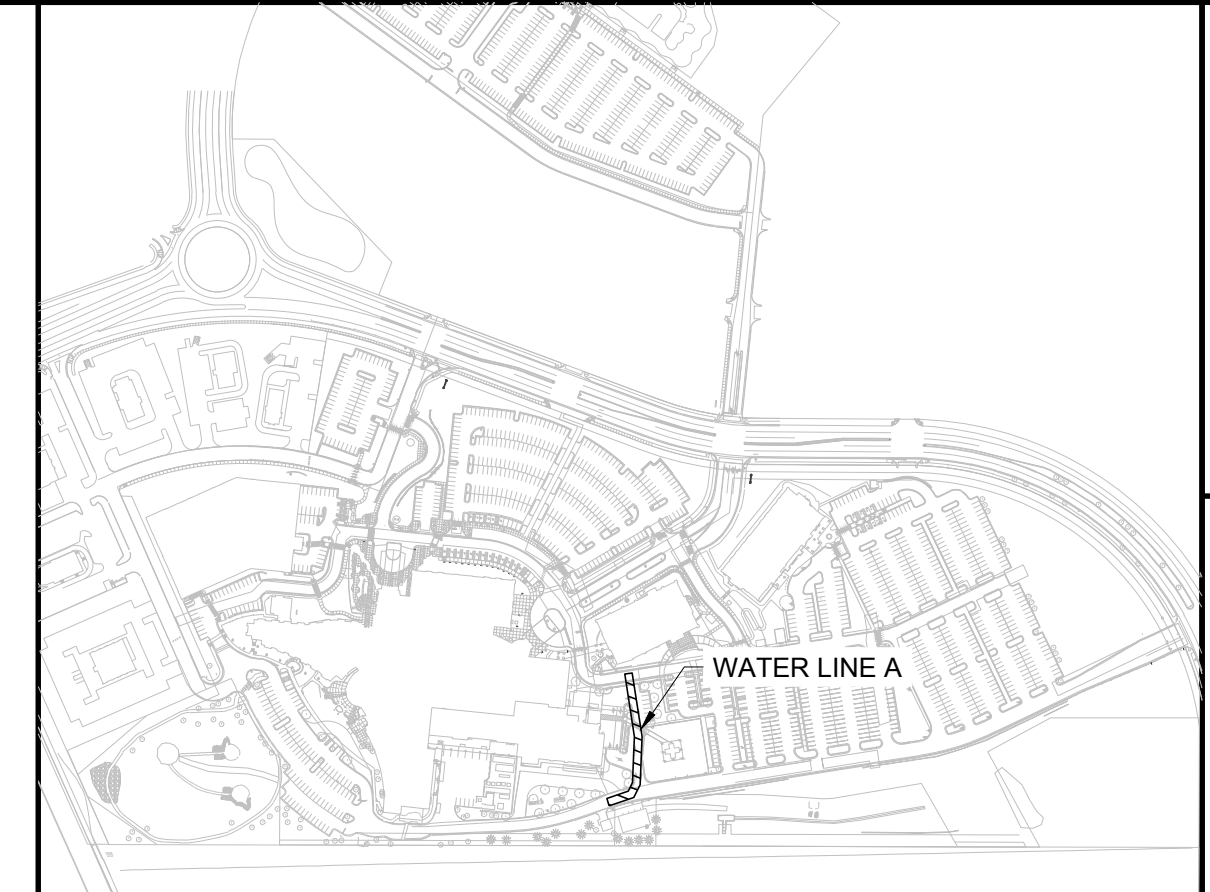
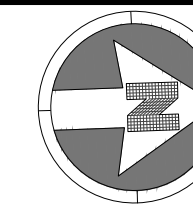


WATER LINE A PLAN

VERTICAL SCALE: 1"=3'  
HORIZONTAL SCALE: 1"=30'



WATER LINE A PROFILE



- NOTES:**
- SEE SHEET A-C501 FOR WATER NOTES AND LEGEND.
  - ALL EXISTING DRY UTILITIES ARE ASSUMED TO BE 3' DEEP TO TOP OF PIPE.
  - ALL EXISTING WATER LINES ARE ASSUMED TO BE 4.5' DEEP TO TOP OF PIPE.
  - THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS IMMEDIATELY.
  - ALL MECHANICAL BENDS, TEES, AND PLUGS WILL REQUIRE A CONCRETE THRUST BLOCK, AS PER CWSO STANDARDS.

**LEGEND:**

UTILITY CROSSING

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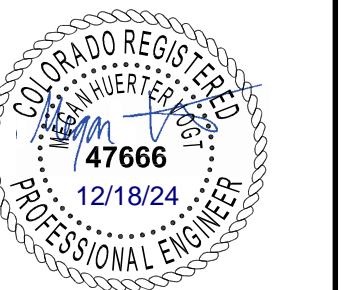
**811**  
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DATE	DESCRIPTION
06/03/2024	1ST TOWN SUBMITTAL
08/16/2024	2ND TOWN SUBMITTAL
10/10/2024	3RD TOWN SUBMITTAL

PROJECT: **ADVENTHEALTH PARKER EXPANSION  
PARKER, CO 80138**

DRAWING TITLE: **WATER PLAN AND PROFILE**

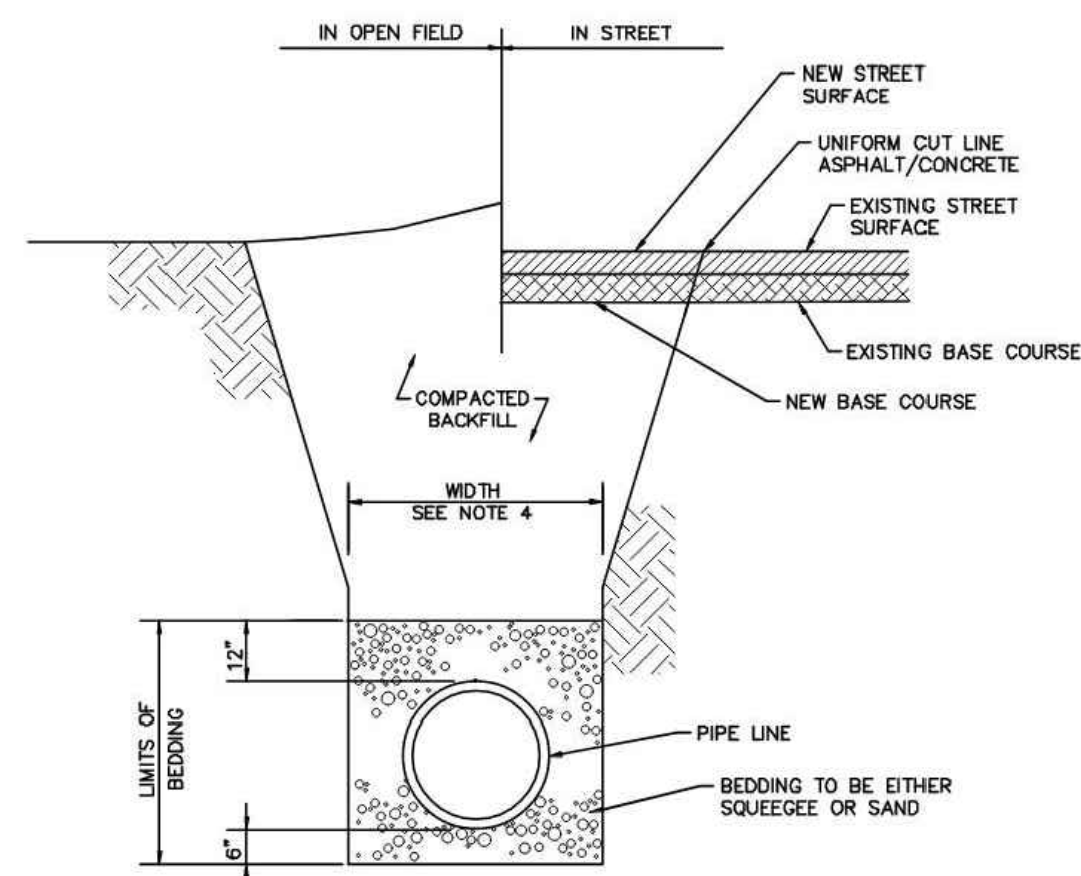
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DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO. 23079

DRAWING NUMBER:

**A-C541**

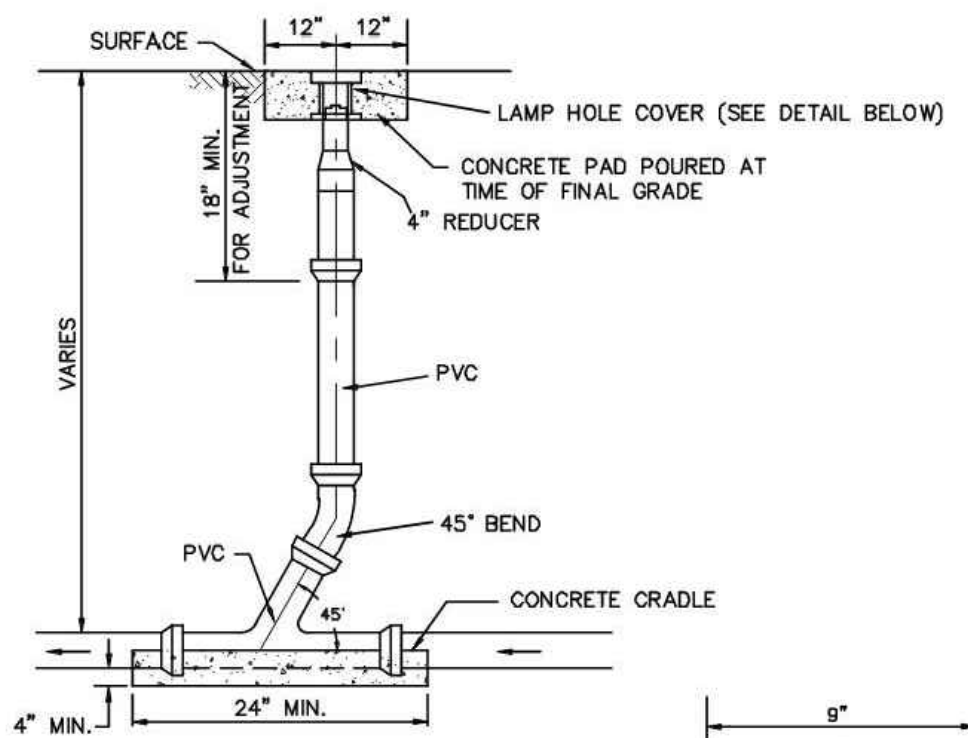


- NOTES:**
- MINIMUM COVER TO BE 4.5' BELOW OFFICIAL STREET GRADE.
  - TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
  - PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
  - TRENCH WIDTH SHALL NOT BE MORE THAN 10" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.
  - SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 P.S.I. CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
  - COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 70% RELATIVE DENSITY TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 90% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.

**Cottonwood**  
Water & Sanitation District

STANDARD BEDDING

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-14

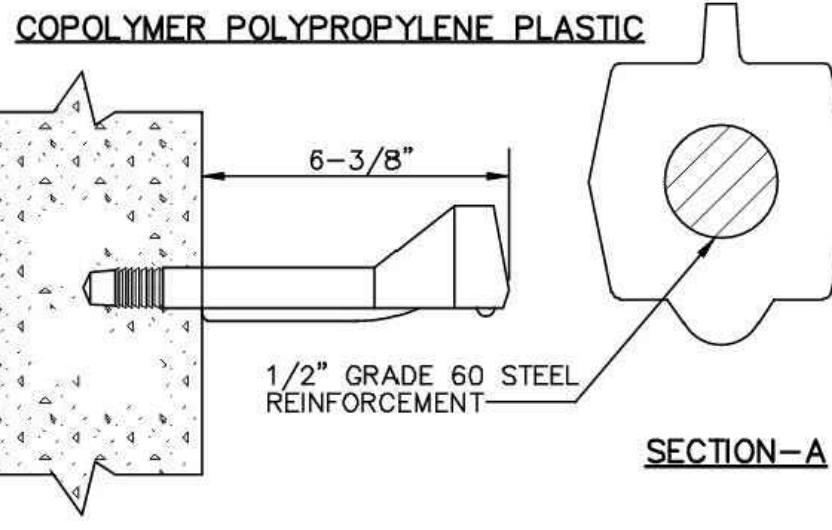
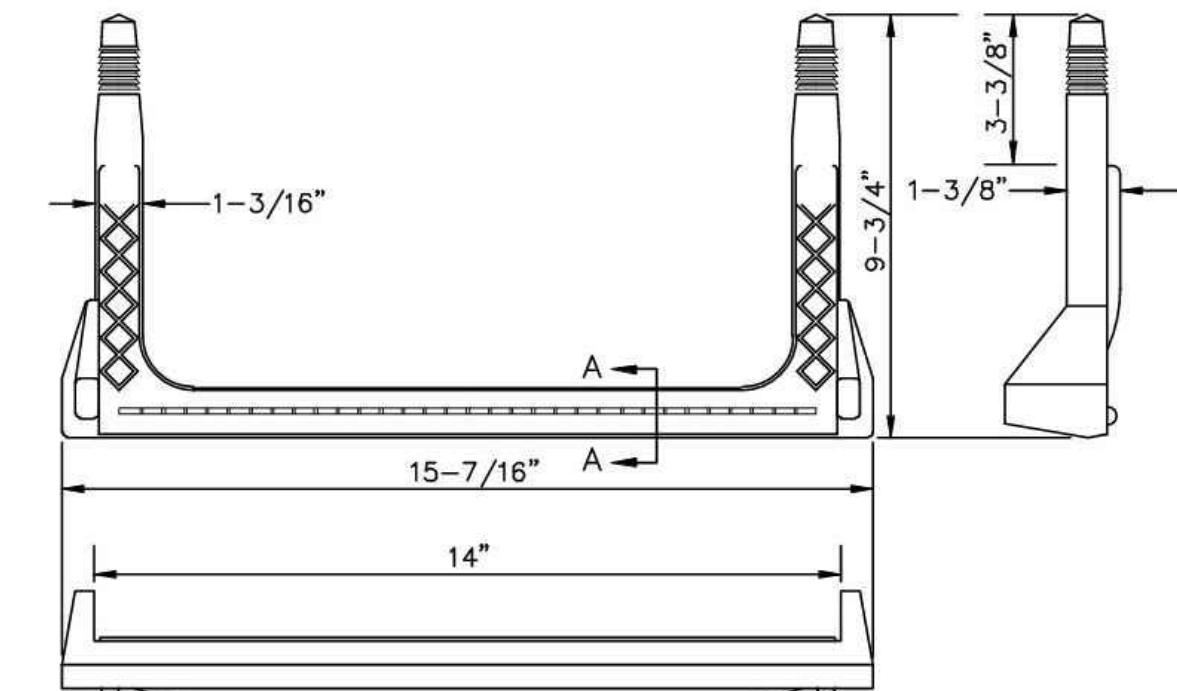


- NOTES:**
- COVER SHALL HAVE A LOCKING LID MARKED "SEWER".
  - TYLER SERIES 6855 SLIP TYPE TOP SECTION, D & L SUPPLY SERIES M8055 OR EQUIV.
  - I.D. = 6 1/8".

**Cottonwood**  
Water & Sanitation District

IN-LINE CLEANOUT

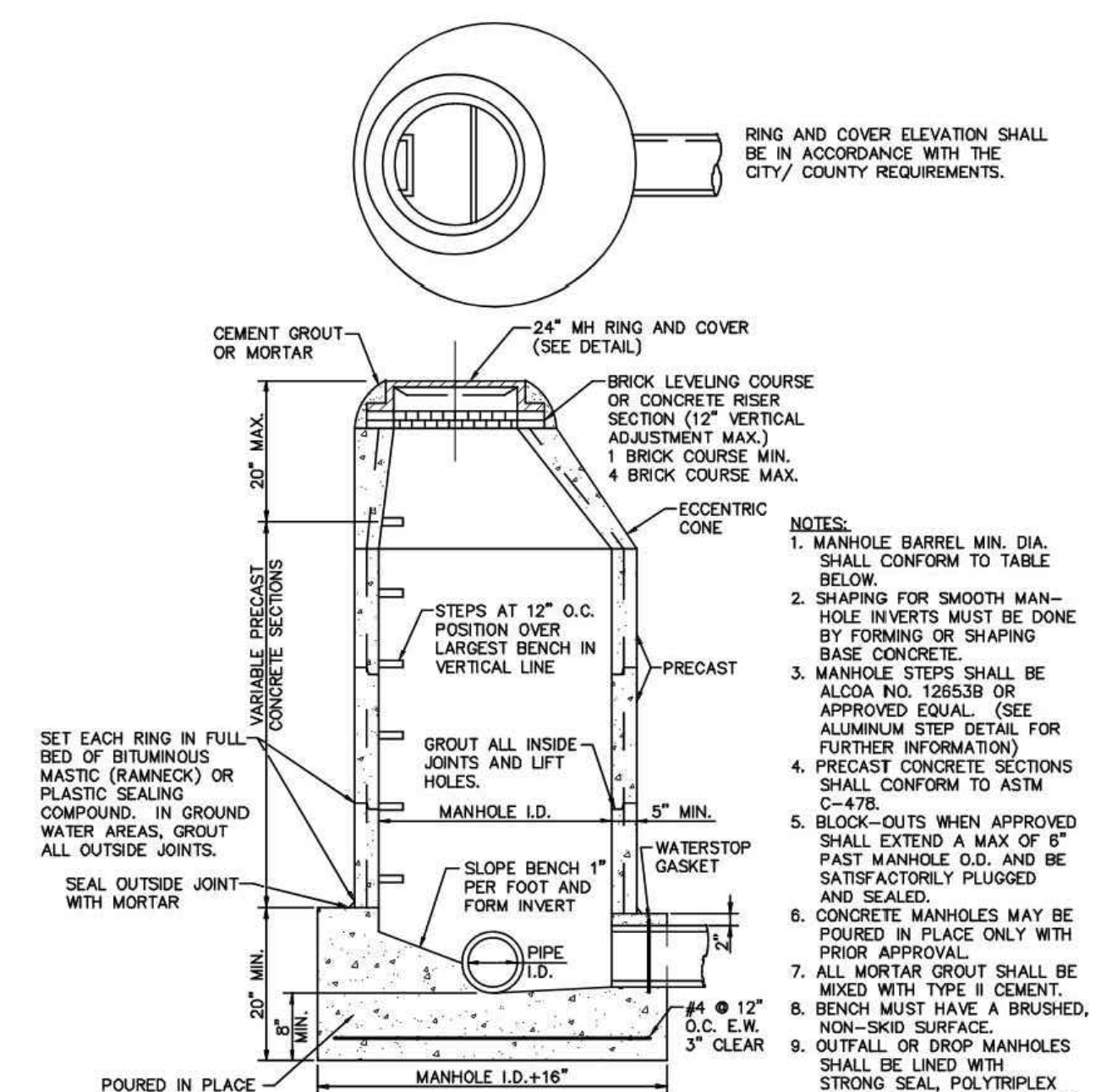
ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-10



**Cottonwood**  
Water & Sanitation District

PLASTIC STEP

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-5

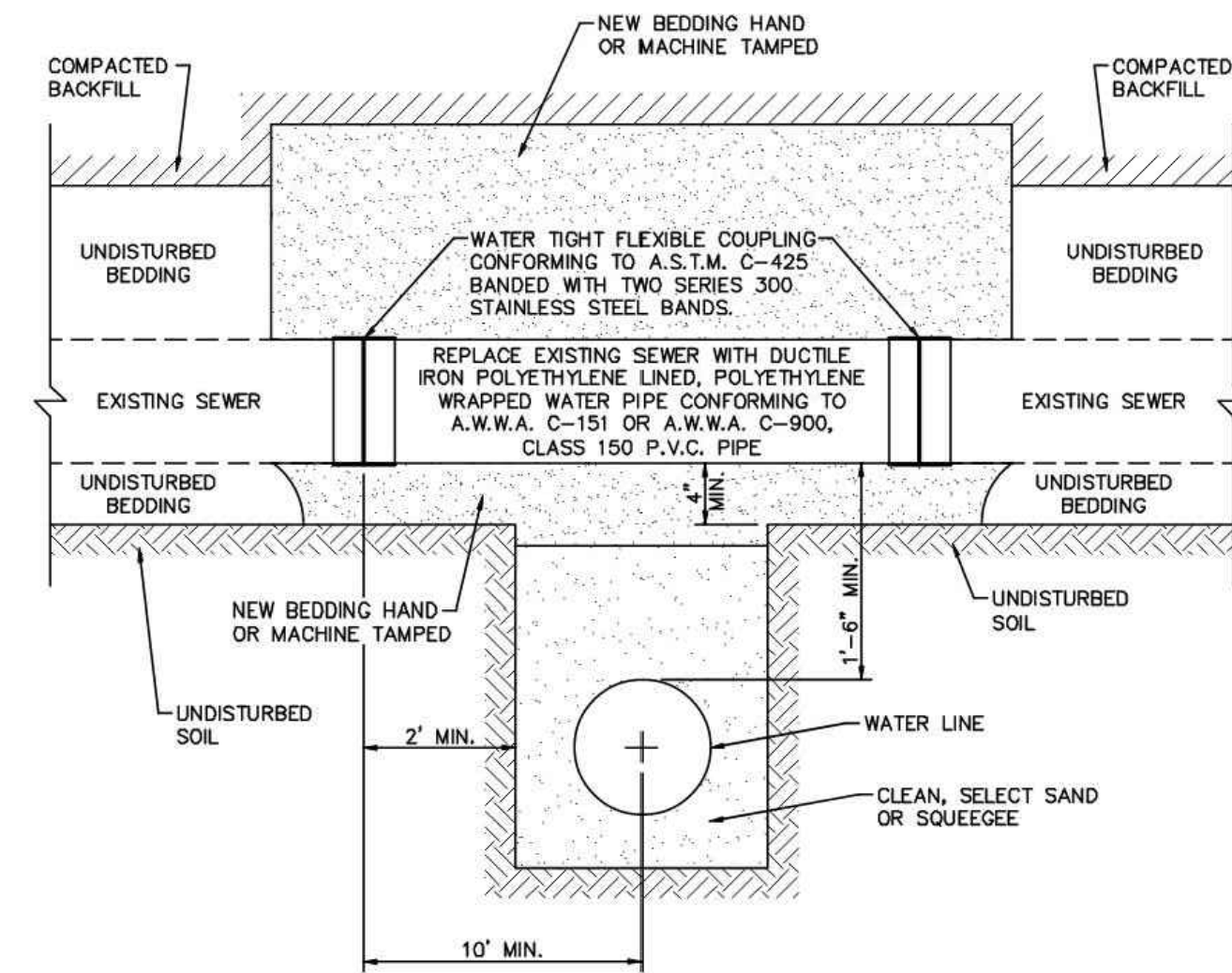


- NOTES:**
- MANHOLE BARREL MIN. DIA. SHALL CONFORM TO TABLE BELOW.
  - SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
  - MANHOLE STEPS SHALL BE ALCOA NO. 12853B OR APPROVED EQUAL. (SEE ALUMINUM STEP DETAIL FOR FURTHER INFORMATION)
  - PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478.
  - BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 6" PAST MANHOLE O.D. AND BE SATISFACTORILY PLUGGED AND SEALED.
  - CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PROOF APPROVAL.
  - ALL MORTAR GROUT SHALL BE MIXED WITH TYPE II CEMENT.
  - BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.
  - CUTFALL OR DROP MANHOLES SHALL BE LINED WITH STRONG SEAL, POLYTRIFLEX SEWER SHIELD, OR AN APPROVED EQUAL, COATED WITH 20 MIL. MIN. APPLIED IN 4-7 MIL. LAYERS, PER MANUFACTURER'S SPECIFICATIONS.
  - PRE-CAST CONCRETE BASES SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE DISTRICT.

**Cottonwood**  
Water & Sanitation District

PRECAST MANHOLE

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-2

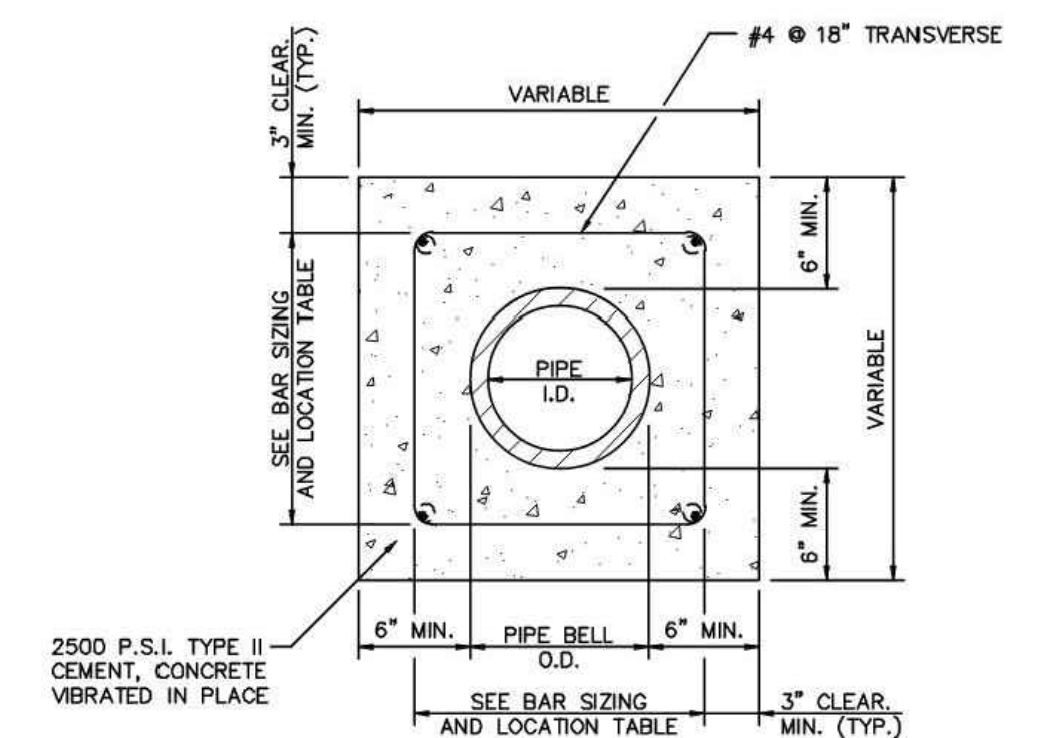


- NOTES:**
- THIS STANDARD APPLIES ONLY FOR NON-PRESSURIZED SANITARY SERVICE TAPS AND SANITARY SEWERS EIGHT (8) INCH AND SMALLER. SANITARY SEWERS MAY NOT BE CUT WITHOUT THE EXPRESSED CONSENT OF THE DISTRICT. A DISTRICT REPRESENTATIVE WILL BE ON SITE DURING CONSTRUCTION.
  - DUCTILE IRON PIPE USED TO REPLACE SECTION OF SANITARY SEWER SHALL BE PLACED IN A TRENCH, BEDDED, BACKFILLED AND COMPACTION IN ACCORDANCE WITH THE DISTRICT SPECIFICATIONS.

**Cottonwood**  
Water & Sanitation District

SEWER CROSSING

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-28



**REINFORCEMENT STEEL**

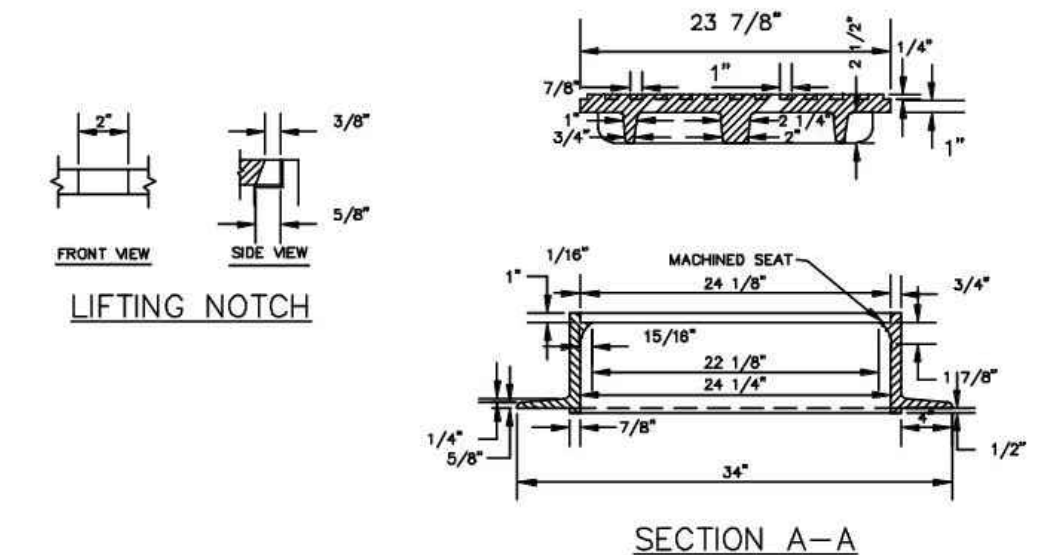
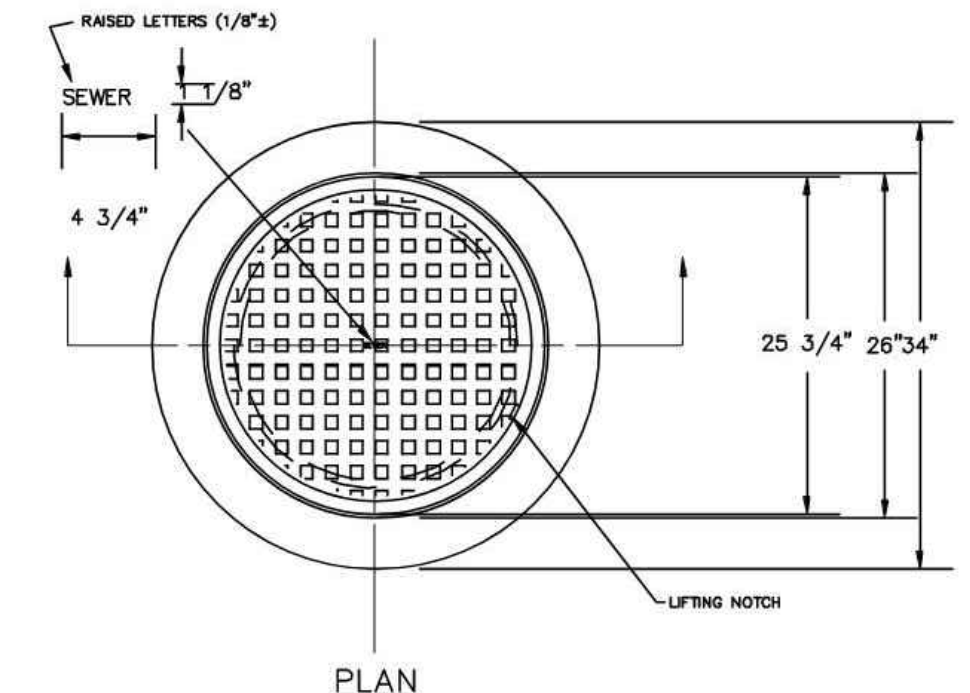
PIPE I.D.	LONGITUDINAL BARS	LOCATION
4 IN.	4-NO. 4 BARS	1 EACH CORNER
6 IN.	4-NO. 4 BARS	1 EACH CORNER
8 IN.	4-NO. 4 BARS	1 EACH CORNER
10 IN.	8-NO. 4 BARS	3 EACH SIDE
12 IN.	8-NO. 4 BARS	3 EACH SIDE
15 IN.	8-NO. 4 BARS	3 EACH SIDE
18 IN.	8-NO. 4 BARS	3 EACH SIDE
21 IN.	12-NO. 4 BARS	4 EACH SIDE
24 IN.	12-NO. 4 BARS	4 EACH SIDE
27 IN.	12-NO. 4 BARS	4 EACH SIDE
30 IN.	12-NO. 4 BARS	4 EACH SIDE
33 IN.	12-NO. 4 BARS	4 EACH SIDE
36 IN.	16-NO. 4 BARS	5 EACH SIDE

- NOTE:**
- THE DISTRICT SHALL REVIEW THIS DETAIL FOR USE ON A CASE BY CASE BASIS. SPECIAL ENCASMENTS MAY BE REQUIRED AT CREEK CROSSINGS AND CONDUIT CROSSINGS.

**Cottonwood**  
Water & Sanitation District

CONCRETE ENCASMENT

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-12

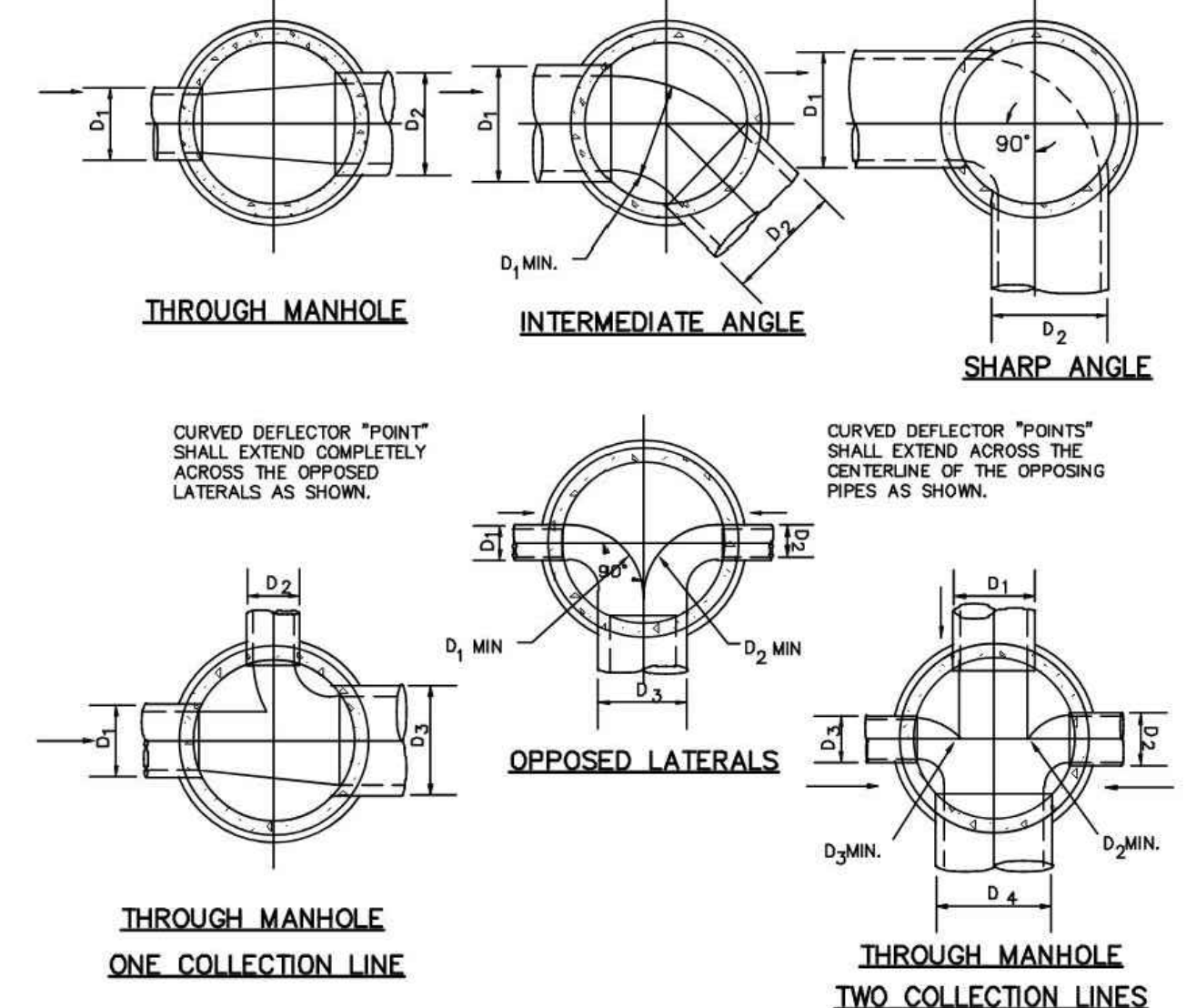


- NOTE:**
- CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 25 KSI (CLASS 25)
  - ALL CASTINGS TO BE DIPPED IN ASPHALT BASE PAINT (OR APPROVED EQUAL)
  - CASTINGS SHALL BE AS SPECIFIED BELOW OR EQUAL: (CAST IRON ONLY)
- MANUFACTURERS CAT. #  
NEENAH R-1706  
CASTINGS, INC. MH-400-24 C.I.  
HUTCHINSON FDRY. & STL. INC. MH-400

**Cottonwood**  
Water & Sanitation District

24" MANHOLE RING AND COVER

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-6



- NOTES:**
- PIPE INVERT ELEVATIONS AND DROP THROUGH MANHOLES SHALL BE IN CONFORMANCE WITH THE REVIEWED AND SIGNED CONSTRUCTION PLANS. THE INTENTION IS TO PROMOTE SMOOTH, NON-TURBULENT FLOW THROUGH THE MANHOLES BY KEEPING THE LARGER LINES LOWER IN THE MANHOLE AND BRINGING THE SMALLER LINES IN SLIGHTLY HIGHER.
  - MAXIMUM INSIDE DROP THROUGH ANY MANHOLE SHALL BE 12 INCHES.
  - MINIMUM DROP THROUGH ANY MANHOLE SHALL BE 0.2 FT.
  - ALL INVERT DEFLECTORS SHALL BE CURVED IN SHAPE TO PROVIDE SMOOTH FLOW TRANSITIONS AS SHOWN ON THIS DETAIL.
  - MINIMUM ANGLE BETWEEN THE CENTERLINE OF ANY INCOMING PIPE AND THE CENTERLINE OF THE OUTGOING PIPE SHALL BE 90 DEGREES.

**Cottonwood**  
Water & Sanitation District

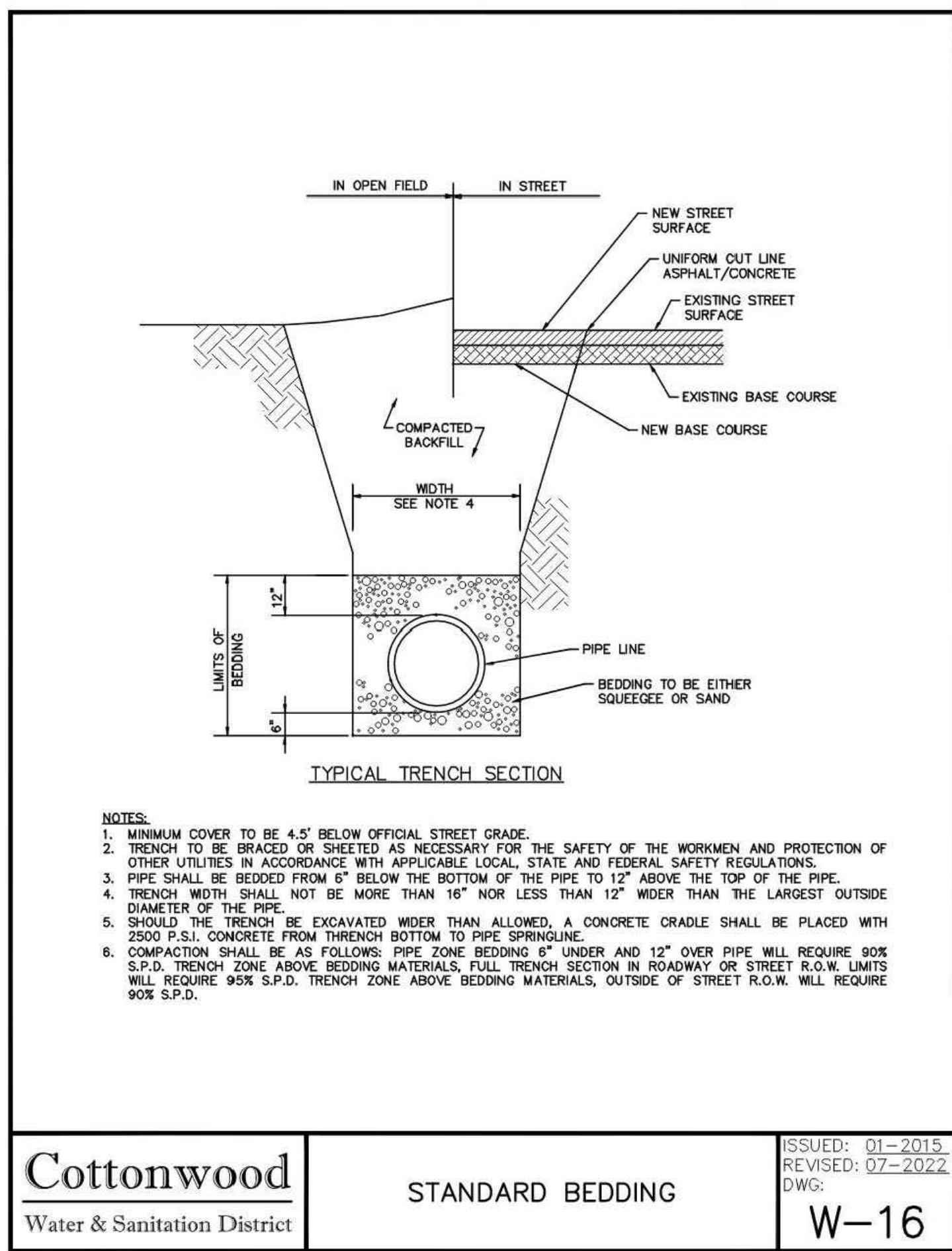
BASE AND DEFLECTOR

ISSUED: 07-2013  
REVISED: 07-2022  
DWG: S-3

DATE	DESCRIPTION
06/03/2024	1ST TOWN SUBMITTAL
08/16/2024	2ND TOWN SUBMITTAL
10/10/2024	3RD TOWN SUBMITTAL



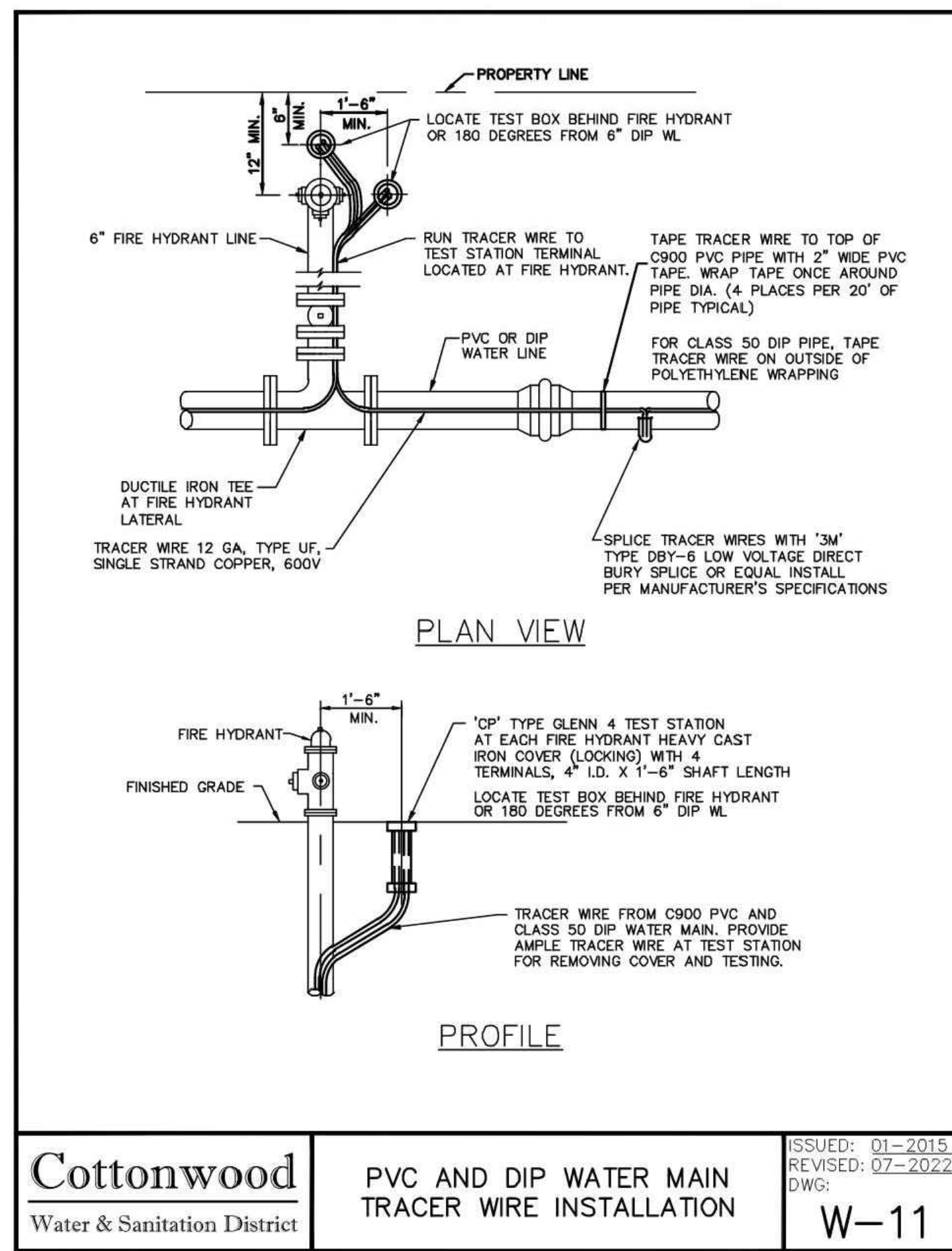
DESIGNED BY:	RJH
DRAWN BY:	EDS
CHECKED BY:	MHV
MIRO JOB NO.	23079



**Cottonwood**  
Water & Sanitation District

STANDARD BEDDING

ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-16



**Cottonwood**  
Water & Sanitation District

PVC AND DIP WATER MAIN TRACER WIRE INSTALLATION

ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-11

**ROD DIAMETER, GRADE & LENGTH OF RESTRAINED PIPE**

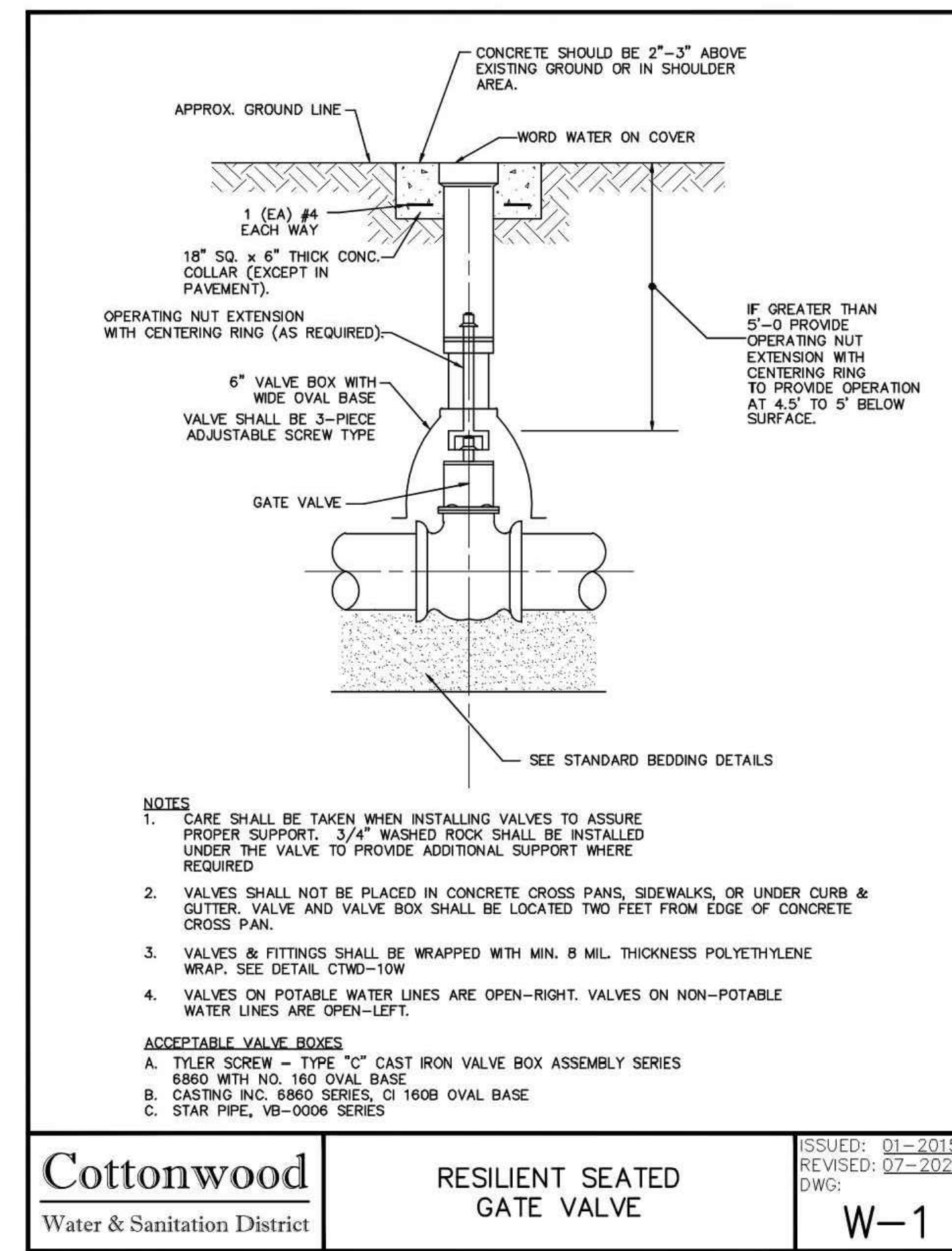
PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
	F	L	G	F	L	G	F	L	G	F	L	G	F	L	G	F	L	G	F	L	G
90° BEND, TEE, PLUG	3/4"	30'	MS 3/4"	45'	MS 3/4"	45'	MS 3/4"	60'	MS 3/4"	60'	MS 3/4"	60'	MS 3/4"	100'	MS 1 1/4"	132'	MS 1 1/4"	150'	MS 1 1/4"	150'	MS 1 1/4"
VALVE	3/4"	30'	MS 3/4"	45'	MS 3/4"	45'	MS 3/4"	60'	MS 3/4"	60'	MS 3/4"	60'	MS 3/4"	100'	MS 1 1/4"	132'	MS 1 1/4"	150'	MS 1 1/4"	150'	MS 1 1/4"
45° BEND	3/4"	15'	MS 3/4"	15'	MS 3/4"	15'	MS 3/4"	25'	MS 3/4"	25'	MS 3/4"	25'	MS 3/4"	30'	MS 3/4"	30'	MS 3/4"	30'	MS 3/4"	30'	MS 3/4"
22 1/2° BEND	3/4"	2'	MS 3/4"	4'	MS 3/4"	4'	MS 3/4"	5'	MS 3/4"	7'	MS 3/4"	7'	MS 3/4"	10'	MS 3/4"	10'	MS 3/4"	12'	MS 3/4"	12'	MS 3/4"
11 1/4° BEND	3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"	2'	MS 3/4"

**NOTES:**  
 1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.  
 2. CLAMPS, RODS & MEGALUGS NOT ALLOWED FOR 24" & LARGER PIPES.  
 3. D=DIAMETER, L=LENGTH, G=GRADE, MS=MILD STEEL, HS=HIGH STRENGTH.  
 4. MIN 4.5' GROUND COVER REQD.  
 5. BASED ON 150 PSI INTERNAL PRESSURE.  
 6. MS = MILD STEEL ROD ASTM A 36.  
 7. HS = HIGH STRENGTH ROD ASTM A 193 GRADE B7.  
 8. NUTS SHALL BE ASTM A 307 GRADE A OR B HEXAGON HEAVY SERIES. HS NUTS SHALL CONFORM TO MS-22.  
 9. SEE TIE ROD DETAIL DRAWING, ALSO, THE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.  
 10. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.  
 11. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.  
 12. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.  
 13. 12" AND SMALLER IN LINE VALVES AND TEES SHALL HAVE A MECHANICAL JOINT RESTRAINT DEVICE ON EACH SIDE OF THE FITTING OR VALVE. MECHANICAL JOINT RESTRAINT DEVICE SHALL BE PER MS-2.  
 14. A SECOND VALVE WILL BE REQD TO BE CLOSED WHEN EXCAVATING NEXT TO A EXIST VALVE.  
 15. ON PLUGS, TEES AND BENDS KICKBLOCK SHALL BE IN ADDITION TO RESTRAINT.  
 16. WHEN REDUCERS ARE USED ON VALVE INSTALLATIONS THE LENGTH OF RESTRAINT SHALL BE BASED ON THE SIZE OF THE PIPE NOT THE SIZE OF THE VALVE.

**Cottonwood**  
Water & Sanitation District

LENGTH OF RESTRAINED PIPE

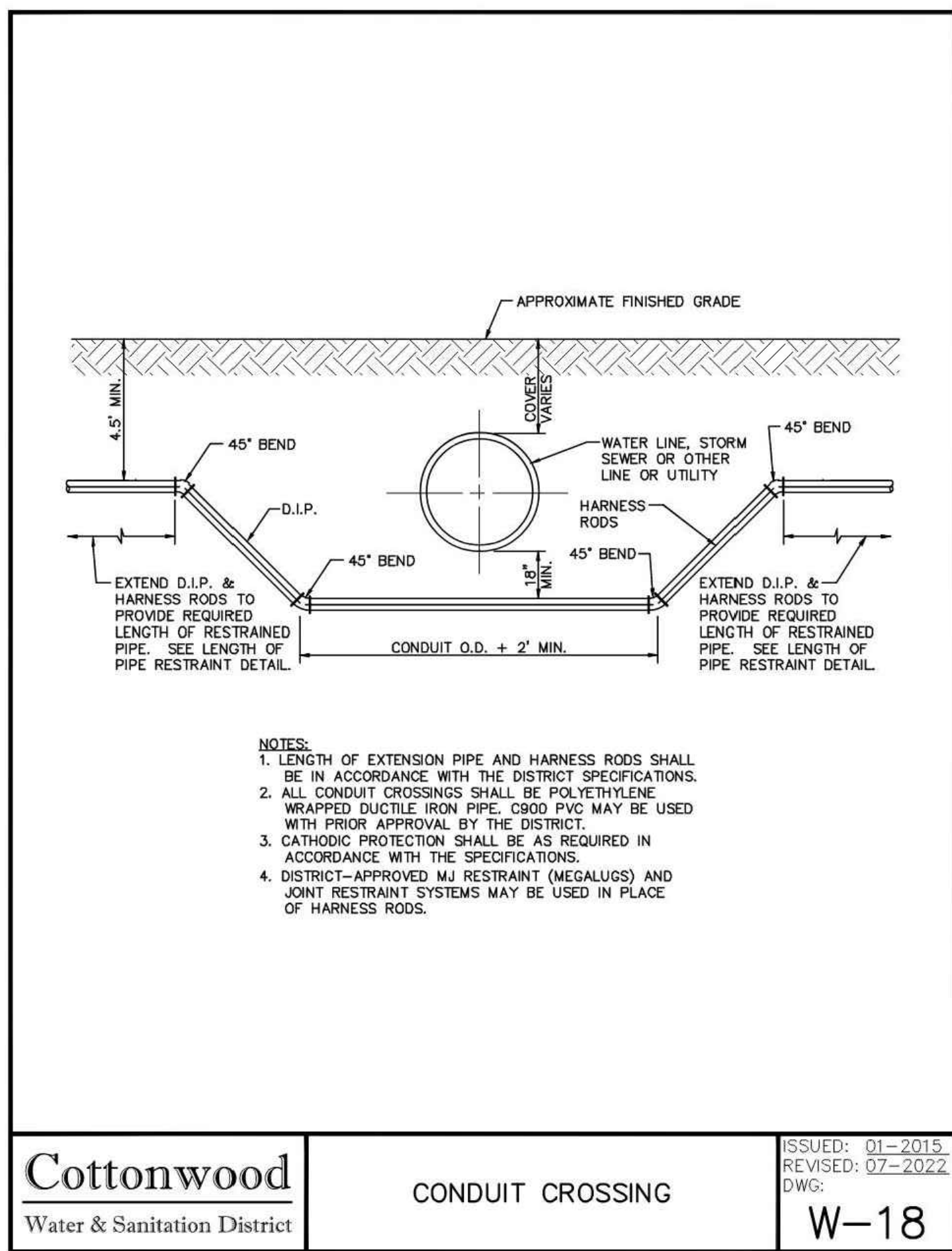
ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-9



**Cottonwood**  
Water & Sanitation District

RESILIENT SEATED GATE VALVE

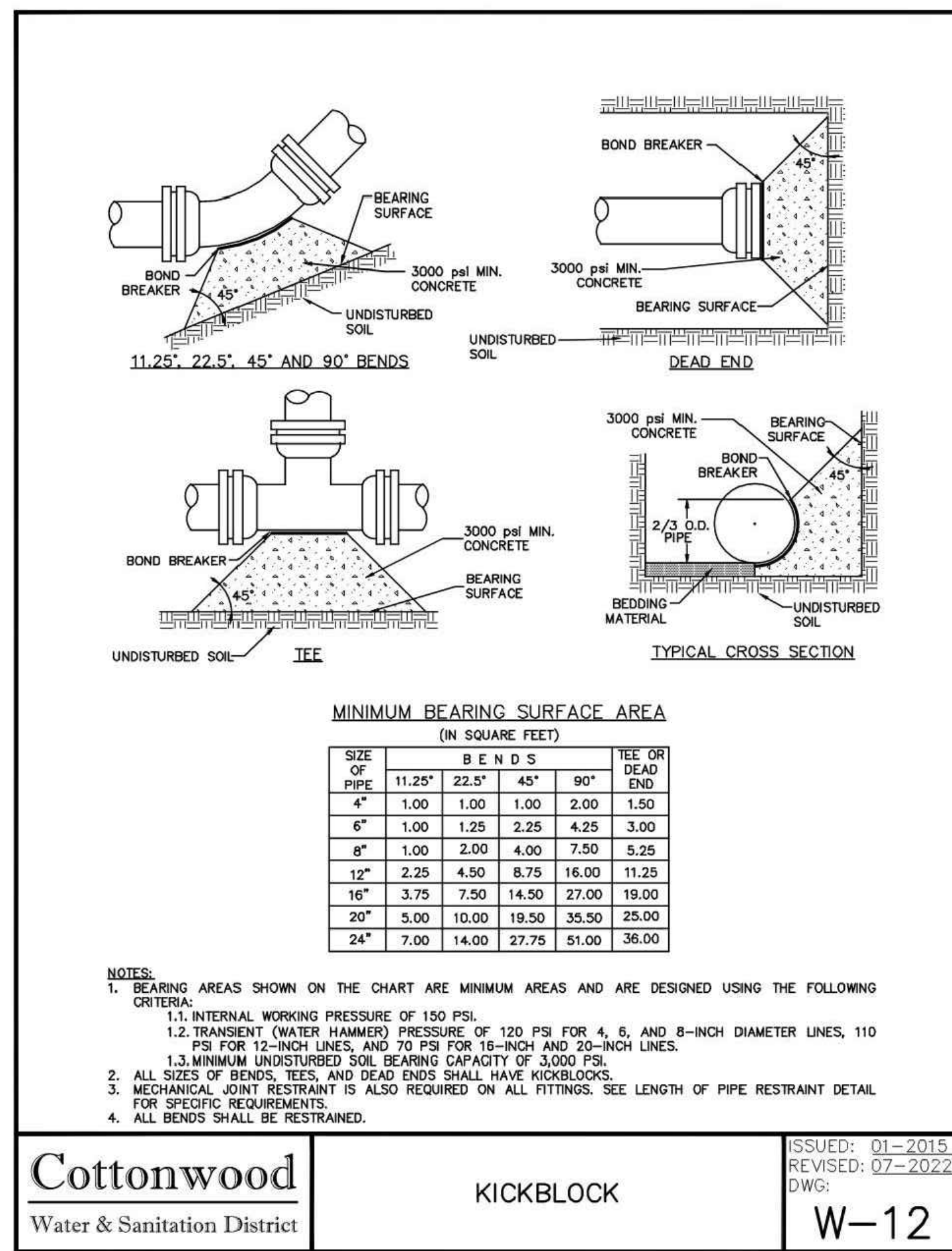
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REVISED: 07-2022  
DWG: W-1



**Cottonwood**  
Water & Sanitation District

CONDUIT CROSSING

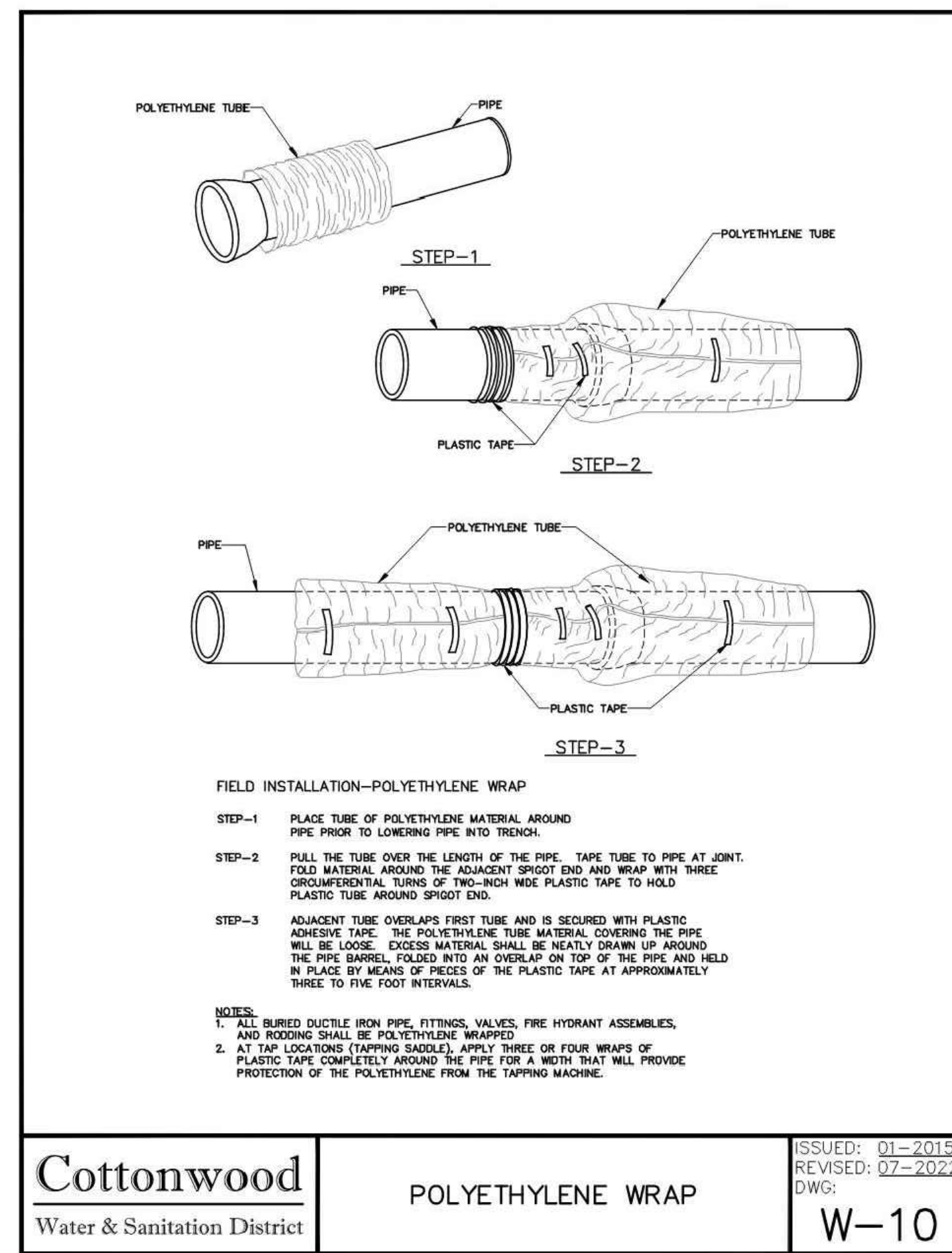
ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-18



**Cottonwood**  
Water & Sanitation District

KICKBLOCK

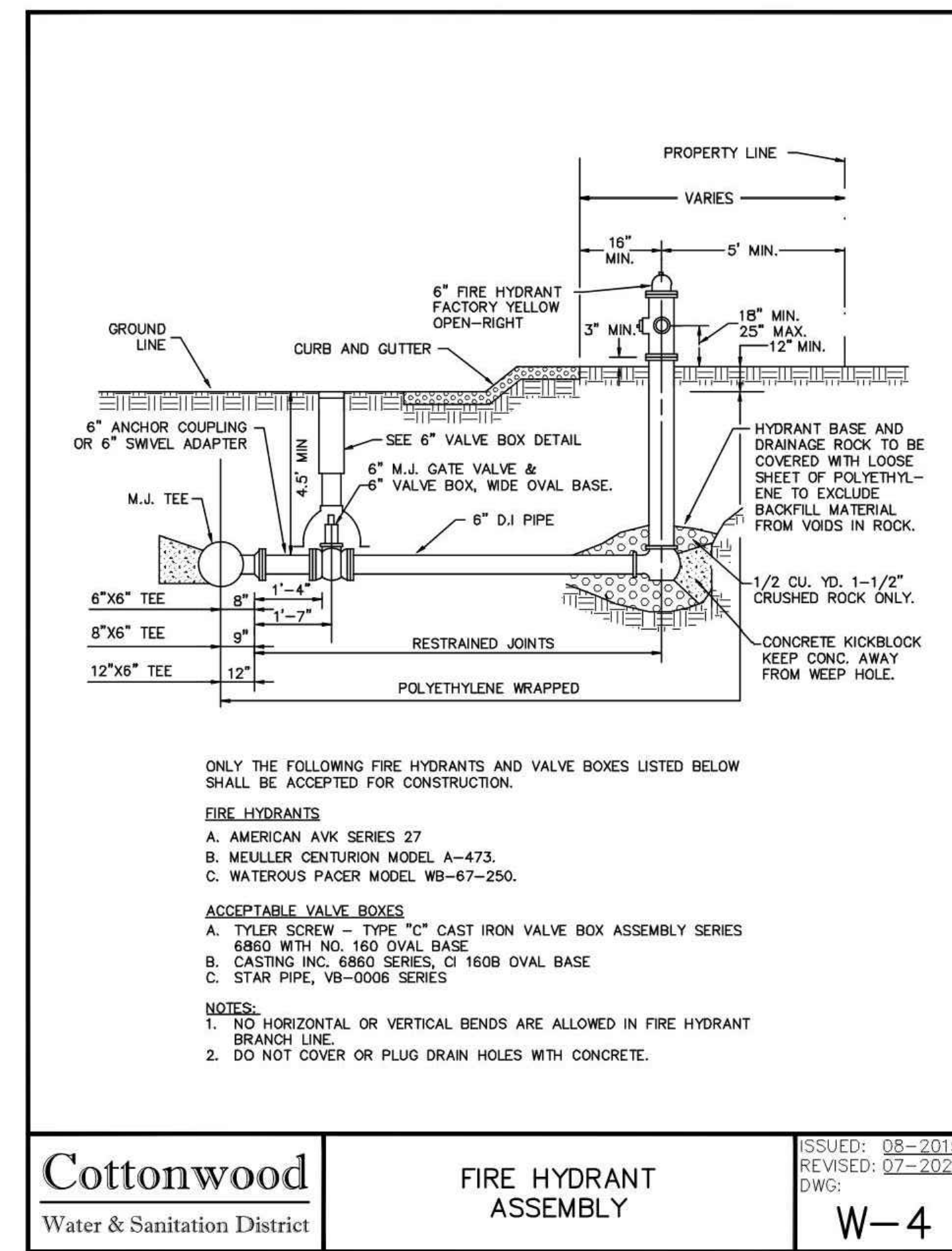
ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-12



**Cottonwood**  
Water & Sanitation District

POLYETHYLENE WRAP

ISSUED: 01-2015  
REVISED: 07-2022  
DWG: W-10



**Cottonwood**  
Water & Sanitation District

FIRE HYDRANT ASSEMBLY

ISSUED: 08-2015  
REVISED: 07-2022  
DWG: W-4

**M I R O**  
S. A. MIRO, INC.  
CIVIL + STRUCTURAL CONSULTING ENGINEERS  
4582 S. Ulster St., Suite 750  
Denver, CO 80237  
303-741-3737  
www.samiro.com

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DATE	DESCRIPTION
06/03/2024	1ST TOWN SUBMITTAL
08/16/2024	2ND TOWN SUBMITTAL
10/10/2024	3RD TOWN SUBMITTAL

NO. 1 2 3

**ADVENTHEALTH PARKER EXPANSION**  
**PARKER, CO 80138**  
PROJECT: WATER AND SANITARY DETAILS  
DRAWING TITLE: WATER AND SANITARY DETAILS  
FILE PATH: J:\Jobs\23079 AHP Expansion\05 CAD\Plans and Details\C551-WATR-SSEW-DTLS.dwg C552 - 12/17/2024

**PROFESSIONAL ENGINEER**  
47666  
12/18/24

DESIGNED BY: RJH  
DRAWN BY: EDS  
CHECKED BY: MHV  
MIRO JOB NO. 23079  
DRAWING NUMBER: A-C552

NO.	DESCRIPTION	DATE
1	1ST TOWN SUBMITTAL	06/03/2024
2	2ND TOWN SUBMITTAL	08/16/2024
3	3RD TOWN SUBMITTAL	10/10/2024

ISSUED: 01-2015  
 REVISED: 07-2022  
 DWG: W-19

PROJECT: **ADVENTHEALTH PARKER EXPANSION  
 PARKER, CO 80138**

DRAWING TITLE: **WATER AND SANITARY DETAILS**

FILE PATH: J:\Jobs\23079 AHP Expansion\05 CAD\Plans and Details\C551-WATR-SSEW-DTLS.dwg C553 - 12/17/2024



DESIGNED BY: RJH  
 DRAWN BY: EDS  
 CHECKED BY: MHV  
 MIRO JOB NO. 23079

DRAWING NUMBER:  
**A-C553**

**PLAN**

**SECTION**

**DETAIL A**

**DETAIL B**

**DETAIL C**

**GENERAL NOTES:**

- THESE STANDARD DETAILS SHALL ONLY BE CONSTRUED TO SHOW CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR GREASE INTERCEPTOR AND SHALL NOT BE USED FOR CONSTRUCTION. THE ARCHITECT/ENGINEER SHALL FURNISH STRUCTURAL DESIGN CRITERIA, HYDRAULIC LOADINGS, VOLUME & RETENTION TIME REQUIREMENTS AND DETAILED CONSTRUCTION DRAWINGS, INCLUDING SITE PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.
- SECONDARY TANK HAS VOLUME EQUAL TO 1/3 OF TOTAL CAPACITY.
- ALL PIPE AND FITTINGS TO BE SCHEDULE 40 PVC EXCEPT WHERE NOTED OTHERWISE AND SHALL BE 4" MINIMUM DIAMETER.
- WELLS, BOTTOM AND TOP SLAB TO BE REINFORCED THROUGHOUT. ADDITIONAL DIAGONAL REINFORCING TOP AND BOTTOM IS REQUIRED AROUND ACCESS OPENINGS. ALL REBAR SHALL HAVE A 3" MINIMUM COVER TO FACE OF CONCRETE.
- THICKNESS OF WALLS, BOTTOM AND TOP SLAB TO BE DETERMINED FROM STRUCTURAL LOADING REQUIREMENTS BY ARCHITECT/ENGINEER. CAST-IN-PLACE BOTTOM SLAB SHALL NOT BE LESS THAN 4" THICK.
- INLET AND OUTLET PIPE SIZES SHALL BE DETERMINED BY ARCHITECT/ENGINEER BUT SHALL NOT BE LESS THAN 4" DIAMETER (OUTLET PIPE INVERT TO BE 2" LOWER THAN INLET).
- REINFORCED CONCRETE BOTTOM SLAB SHOWN, (MAY BE INTEGRALLY CAST WITH PRE-CAST WALL SECTIONS AT CONTRACTOR'S OPTION).
- ALL JOINTS IN PRE-CAST SECTIONS TO BE SEALED WITH FLEXIBLE PLASTIC JOINT SEALING COMPOUND TO FED. SPEC. S-55-02210 (EXCEPT TOP SLAB).
- VENT PIPE MATERIALS AND LOCATION SHALL BE IN ACCORDANCE WITH THE PLUMBING CODE.
- ROUND OR CIRCULAR GREASE INTERCEPTOR WILL REQUIRE SPECIAL DESIGN AND APPROVAL.
- PRE-CAST CONCRETE SHAPES ARE SHOWN. CAST-IN-PLACE CONCRETE STRUCTURE IS OPTIONAL.
- PRE-CAST REINFORCED CONCRETE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM-C-478.
- DESIGN CRITERIA: (MINIMUM)  
 UNIT WEIGHT OF "SOIL" 120 PCF  
 EQUIVALENT FLUID PRESSURE 30 PCF  
 UNIFORM LOADS (IF APPLICABLE) HASTO H-20  
 CONCRETE STRENGTH (F'c) (TYPE II CEMENT) 4000 PSI  
 TOP SLAB MAY BE ONE PIECE OF MULTIPLE SEGMENT CONSTRUCTION AT CONTRACTOR'S OPTION.
- SUPPORT BRACKETS AND CLEAN-OUT PLUGS SHALL BE BRASS.
- OTHER VARIOUS COMBINATIONS OF TANK DIMENSIONS MAY BE SUBMITTED FOR APPROVAL, PROVIDED THAT ANY ALTERNATE DESIGN SHALL HAVE THE SAME BASIC PROPORTIONAL DIMENSIONS, COMPARABLE VOLUMES AND FUNCTIONAL CAPABILITIES AS THESE STANDARD DETAILS.
- DRAWINGS ARE NOT TO SCALE.
- REFER TO LITTLETON/ENGLEWOOD WASTEWATER TREATMENT PLANT FATS, OILS, AND GREASE POLICY FOR GREASE INTERCEPTOR SIZING.

ISSUED: 07-2013  
 REVISED: 07-2022  
 DWG: S-27

**NTS**

**NOTES:**

- DOMESTIC SERVICE LINE TO BE INSTALLED A MINIMUM OF 18" AND A MAXIMUM OF 36" ABOVE FLOOR SLAB.
- PROVIDE A MINIMUM OF 12" SEPARATION FROM WALL WITH 24" CLEAR SPACE IN FRONT OF DEVICE.
- MINIMUM AIR GAP REQUIRED TO MEET LOCAL CODE AND HEALTH STANDARDS. DIRECT DISCHARGE TO FLOOR DRAIN.
- CONTRACTOR TO SUBMIT OUT SHEETS FOR ALL MATERIALS TO THE WATER DISTRICT FOR APPROVAL PRIOR TO INSTALLATION. ALL MATERIALS MUST MEET HEALTH DEPT AND FIRE PROTECTION DISTRICT REQUIREMENTS.
- CONTACT WATER DISTRICT @ 303-646-8457 FOR METER INSPECTION.
- TO BE INSTALLED IN MECHANICAL ROOM WITH TEMPERATURE CONTROL DEVICE AND EXTERNAL DOOR ACCESS.
- KEYED FOR FFD AND WATER DISTRICT (NOX BVD).
- ALL PIPE, FITTINGS, AND APPURTENANCES MUST MEET LEAD-FREE REQUIREMENTS.

ISSUED: 10-2020  
 REVISED: 07-2022  
 DWG: W-30

**MAIN EXTENSION**

**EXISTING MAIN**

**LEGEND:**

- EXIST MAIN
- TAPPING SLEEVE
- TAPPING VALVE PLG X M
- DI PIPE FULLY RESTRAINED
- M OI, 2" FROM PL
- CONC KICKBLOCK
- M ANCHORING TEE
- POLYETHYLENE WRAPPED

ISSUED: 10-2014  
 REVISED: 07-2022  
 DWG: W-37

**NOTES:**

- THIS STANDARD APPLIES ONLY FOR NON-PRESSURIZED SANITARY SERVICE TAPS AND SANITARY SEWERS EIGHT (8) INCH AND SMALLER. SANITARY SEWERS MAY NOT BE CUT WITHOUT THE EXPRESSED CONSENT OF THE DISTRICT. A DISTRICT REPRESENTATIVE WILL BE ON SITE DURING CONSTRUCTION.
- DUCTILE IRON PIPE USED TO REPLACE SECTION OF SANITARY SEWER SHALL BE PLACED IN A TRENCH, BEDDED, BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE DISTRICT SPECIFICATIONS.

ISSUED: 01-2015  
 REVISED: 07-2022  
 DWG: W-19

**MECHANICAL JOINT RESTRAINT**

**WEDGE DETAIL**

**DIMENSIONS**

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
4"	2	2	9.13	7.50	4.90	0.50
6"	6	3	11.13	9.50	7.00	0.50
8"	6	4	13.38	11.75	9.15	0.62
10"	8	6	15.63	14.00	11.20	0.62
12"	8	8	17.88	16.25	13.30	0.75
4"	4	2	9.12	7.50	4.90	0.75
6"	6	3	11.12	9.50	7.00	0.88
8"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	8	17.88	16.25	13.30	1.25

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

**NOTES:**

- USE EBAA IRON "MEGALUG", SERIES 1100 (D.I.P.), SERIES 2000PVC (P.V.C.) OR APPROVED EQUAL.
- IF ENCASED IN CONCRETE, POLYETHYLENE WRAP MUST BE USED TO PREVENT CONCRETE INTRUSION INTO WEDGE PACKET.

ISSUED: 01-2015  
 REVISED: 07-2022  
 DWG: W-23