

GENERAL NOTES

1.

Profile design lines are based on centerline, as shown, unless otherwise noted.

2.

All new construction to conform to the specifications of El Paso County Planning and Community Development, Widefield Water and Sanitation District, and the Fountain Mutual Irrigation Company (FMIC). Any asphalt removed is to be replaced to meet the specifications of the El Paso County Planning and Community Development.

3.

For pavement design, curb and gutter, and sidewalks see Individual plan and profile sheets. Pavement design to be based on Resistance Value 'R' derived from Iriave tests and are to be approved by the Engineering Division of the El Paso County Planning and Community Development prior to work above subgrade.

4.

At intersections, all curb returns will have 20-foot radius unless otherwise noted.

5.

All existing utilities have been shown according to the best available information. The contractor is responsible for field location and verification prior to beginning work. If it appears that there could be a conflict with any utilities, whether indicated on the plans or not, the contractor is to notify the engineer and owner immediately. The contractor is responsible for the protection and repair (if necessary) of all utilities.

6.

A Pre-Construction meeting shall be held with the El Paso County Planning and Community Development and Widefield Water and Sanitation District prior to any construction.

7.

Approved plans, Engineering Criteria Manual, etc. is required to be on-site at all times during construction.

8.

All necessary permits, such as SWMP, ESQCP, Fugitive Dust, Access, C.O.E. 404, etc. shall be obtained prior to construction.

9.

All handicap ramps to be per El Paso County Standard SD_2-40.

10.

The contractor shall coordinate exact locations and layout with the El Paso County Planning and Community Development on the placement of any pedestrian ramps prior to construction of the curb. Pedestrian ramp locations are as shown on the plans.

11.

Where appropriate, neatly saw cut all existing concrete and asphalt. Repair/replace all disturbed existing items with like materials and thicknesses.

12.

All disturbed areas shall be revegetated with native grasses within 21 days of excavation per Erosion Control Plan.

13.

The prepared Erosion/Sediment Control Plan is to be considered a part of these plans and its requirements adhered to during the construction of this project.

14.

All storm and sanitary sewer pipe lengths and slopes are figured from center of manhole or bend. Pipe lengths are given as a horizontal length.

15.

All storm sewer bedding to be per CDD Standards.

16.

All storm sewer pipe shall be Class III B Wall unless otherwise shown on the storm sewer plan and profile sheets.

17.

All eyes and bends used in construction of storm sewer facilities shall be factory fabricated, unless approved by the El Paso County Development Services Department.

18.

Construction and materials used in all storm and sanitary sewer manholes shall be per specifications. Storm sewer radial deflections to be grouted or installed per manufacturer's recommendations.

19.

Storm sewer manholes sizes as follows unless otherwise shown:
18" thru 36" use 48" I.D. manhole
42" thru 48" use 60" I.D. manhole
54" thru 60" use 72" I.D. manhole
NOTE: Manhole sizes tabulated here shall be increased, if necessary, to accommodate incoming laterals.

20.

Sanitary sewer manhole sizes and facilities per Widefield Water and Sanitation District Specifications. Sanitary sewers to be installed with Class 'C' bedding. Sanitary sewers deeper than 12-feet shall require Class 'B' bedding. Pipe used for construction of sanitary sewer shall be SDR 35 unless shown otherwise on plan and profiles.

21.

For additional utility notes, see Utility Plan and/or Service Plan.

22.

All horizontal stationing is based on the 'Face of Curb', unless otherwise shown.

23.

All vertical design and top of curb are based on the design point shown in the typical cross section.

24.

The curb line design point is located at the intersection of the face and top of curb for the Type III Standard 6-inch vertical curb. See typical street section for design point locations.

25.

Water and sanitary sewer service provided by Widefield Water and Sanitation District. Telephone service provided by Qwest Communications. Gas service provided by BlackHills Energy. Electric service provided by Mountain View Electric.

26.

All utility construction to be conducted in conformance with the current Widefield Water and Sanitation District Specifications and/or El Paso County Specifications, whichever is greater.

27.

Vertical curb to be used between curb returns (CR) and at curb inlets. Transitions from ramp to vertical curb shall be 10-feet unless otherwise approved by the El Paso County Planning and Community Development. All other curb & gutter to be ramp curb & gutter.

28.

Cross pans to be 6' wide and per El Paso County Standard Detail SD_2-26.

29.

Contractor responsible for meeting all Widefield Water and Sanitation District criteria when connecting to existing stubs.

30.

Curb returns shall be CR or CR unless otherwise noted.

31.

Inlets are 'Type' R' inlets (CDD STD M-604-12) unless otherwise noted.

32.

USPS CBU Mailboxes are to be determined by USPS.

BENCHMARK:

Monument is located at the Northwest corner of the intersection of Powers Boulevard and Fontaine Street. The monument is a 3-inch aluminum cap (FIMS ID #206). Located 51.3 feet west of the west edge of asphalt of Powers Blvd and 65.5 feet north of the north edge of asphalt of Fontaine Street. Elevations:5897.89 feet (NGVD 1929, 1960 ADJ).

BASIS OF BEARINGS

is based upon a portion of the Easterly boundary of the Glen at Widefield Subdivision Filing No. 58 as recorded under Reception No. 01672226 in the records of the Clerk and Recorder's Office, County of El Paso, State of Colorado; said line being also a portion of the Easterly Right-of-Way Autumn Glen Avenue as described in said subdivision, being monumented at the Point of Tangency of said boundary by a found cap and rebar marked "PLSC 25968" and at the Point of Curvature of said boundary by a found rebar and cap marked "PLSC 25968". Said line bears N29°46'44"W, a distance of 1154.12 feet.

EL PASO COUNTY STANDARD NOTES

1.

All drainage and roadway construction shall meet the standards and specifications of the City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2, and the El Paso County Engineering Criteria Manual.

2.

Contractor shall be responsible for the notification and field notification of all existing utilities, whether shown on the plans or not, before beginning construction. Location of existing utilities shall be verified by the contractor prior to construction. Call 811 to contact the Utility Notification Center of Colorado (UNCC).

3.

Contractor shall keep a copy of these approved plans, the Grading and Erosion Control Plan, the Stormwater Management Plan (SWMP), the soils and geotechnical report, and the appropriate design and construction standards and specifications at the job site at all times, including the following:
a. El Paso County Engineering Criteria Manual (ECM)
b. City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2
c. Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction
d. CDOT M & Standards

4.

Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing. Any modifications necessary to meet criteria after-the-fact will be entirely the developer's responsibility to rectify.

5.

It is the design engineer's responsibility to accurately show existing conditions, both onsite and offsite, on the construction plans. Any modifications necessary due to conflicts, omissions, or changed conditions will be entirely the developer's responsibility to rectify.

6.

Contractor shall schedule a pre-construction meeting with El Paso County Planning and Community Development (P&CDD) - Inspections, prior to starting construction.

7.

It is the contractor's responsibility to understand the requirements of all jurisdictional agencies and to obtain all required permits, including but not limited to El Paso County Erosion and Stormwater Quality Control Permit (ESQCP), Regional Building Floodplain Development Permit, U.S. Army Corps of Engineers-issued 401 and/or 404 permits, and county and state fugitive dust permits.

8.

Contractor shall not deviate from the plans without first obtaining written approval from the design engineer and P&CDD. Contractor shall notify the design engineer immediately upon discovery of any errors or inconsistencies.

9.

All storm drain pipe shall be Class III RCP unless otherwise noted and approved by P&CDD.

10.

Contractor shall coordinate geotechnical testing per ECM standards. Pavement design shall be approved by El Paso County P&CDD prior to placement of curb and gutter and pavement.

11.

All construction traffic must enter/exit the site at approved construction access points.

12.

Sight visibility triangles as identified in the plans shall be provided at all intersections. Obstructions greater than 18 inches above flowline are not allowed within sight triangles.

13.

Signing and striping shall comply with El Paso County DOT and MUTCD criteria. [If applicable, additional signing and striping notes will be provided.]

14.

Contractor shall obtain any permits required by El Paso County DOT, including Work Within the Right-of-Way and Special Transport permits.

15.

The limits of construction shall remain within the property line unless otherwise noted. The owner/developer shall obtain written permission and easements, where required, from adjoining property owner(s) prior to any off-site disturbance, grading, or construction.

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Detention Basin Details

811

Know what's below.
Call before you dig.

ABBREVIATIONS			
ASSY	= ASSEMBLY	NTS	= NOT TO SCALE
BNDY	= BOUNDARY	OD	= OUTSIDE DIAMETER
BOP	= BOTTOM OF PIPE	PC	= POINT OF HORIZONTAL CURVATURE
CL	= CENTERLINE	PP	= PROPOSED
CRA	= CONCRETE REVERSE ANCHOR	PT	= POINT OF HORIZONTAL TANGENCY
CTRB	= CONCRETE THRUST BLOCK	PVC	= POLY VINYL CHLORIDE PIPE
CR	= POINT OF CURB RETURN	PVC	= POINT OF VERTICAL CURVATURE
DIP	= DUCTILE IRON PIPE	PVI	= POINT OF VERTICAL INTERSECTION
EL	= ELEVATION	PVT	= POINT OF VERTICAL TANGENCY
ESMT	= EASEMENT	RCB	= REINFORCED CONCRETE BOX
EX	= EXISTING	RCP	= REINFORCED CONCRETE PIPE
FC	= FACE OF CURB	ROW	= RIGHT OF WAY
FES	= FLARED END SECTION	RT	= RIGHT
FLG	= FLANGE	SHT	= SHEET
FL	= FLOWLINE	SS	= SANITARY SEWER
GB	= GRADE BREAK	STA	= STATION
HORIZ	= HORIZONTAL	STD	= STANDARD
HYD	= HYDRANT	TA	= TOP OF ASPHALT
I.D.	= INSIDE DIAMETER	TC	= TOP OF CURB
LT	= LEFT	TOP	= TOP OF PIPE
LF	= LINEAR FEET	TYP	= TYPICAL
LP	= LOW POINT	VC	= VERTICAL CURVE
MAX	= MAXIMUM	VERT	= VERTICAL
MH	= MANHOLE		

WIDEFIELD WATER AND SANITATION DISTRICT
GENERAL NOTES

1.

All utility construction to be conducted in conformance with the current Widefield Water and Sanitation District specifications. Compaction requirements shall be 95% Standard Proctor as determined by ASTM D698, unless otherwise approved by the Widefield Water and Sanitation District or a higher standard is imposed by another agency having right-of-way jurisdiction.

2.

All materials and workmanship shall be subject to inspection by the Widefield Water and Sanitation District. The Widefield Water and Sanitation District reserves the right to accept or reject any such materials and workmanship that does not conform to its standards and specifications.

3.

The Developer or his Engineer has located all fire hydrants and future service stubs. Any required realignment, either horizontal or vertical, shall be at the expense of the Developer.

4.

All ductile iron pipe, to include fittings, valves and fire hydrants will be wrapped with polyethylene tubing, and electrically isolated.

5.

All ductile iron pipe and fittings shall be double bonded. Specifications for cathodic protection on both Dip mains and PVC mains is specified in the Standards and Specifications.

6.

PVC main lines shall be installed with coated No. 12 tracer wire.

7.

The Contractor is required to notify the Widefield Water and Sanitation District (390-7111) a minimum of 48 hours and a maximum of 96 hours prior to the start of construction. The Contractor shall also notify affected utility companies 48 hours prior to construction adjacent to the known utility lines.

8.

The location of all utilities as shown on these drawings are approximate only. The location of all utilities shall be verified prior to construction by the Contractor.

9.

The Contractor shall field excavate and verify the vertical and horizontal location of all tie-ins. Contractor shall notify the Widefield Water and Sanitation District and the Engineer of the field verified information prior to construction.

10.

All bends shall be field staked prior to construction.

11.

Any water utility material removed and not reused shall be returned to the Widefield Water and Sanitation District if the District so requests.

12.

The Contractor shall at his expense support and protect all utility mains so that they will function continuously during construction. Should a utility main fail as a result of the Contractor's operation, it will be replaced immediately by either the Contractor or the Widefield Water and Sanitation District at full cost of labor and materials to the Contractor.

13.

Any pumping or bypass operations must be reviewed and approved prior to execution by both the Widefield Water and Sanitation District and the Engineer.

14.

Contractor must replace or repair any damage to all surface improvements, including but not limited to fences, curb and gutter and/or asphalt that may be caused during construction.

15.

All water lines 6" and larger, and all sewer lines 8" and larger, shall have as "As-Built" plans prepared and approved prior to final acceptance by the Widefield Water and Sanitation District.

16.

Prior to construction, a Pre-Construction Conference is required a minimum of 72 hours in advance of commencement of work. To set the Pre-Construction conference, contact Brandon Bernard, Water Superintendent (464-2051) and/or Mark McCormick, Wastewater Superintendent (491-0128) of the Widefield Water and Sanitation District for a time. No Pre-Construction Conference times will be set until 4 sets of signed drawings are received by the Widefield W & S District.
Pre-Construction Date _____/Initials _____

LEGEND			
—	STREET R.O.W.	—	CURB & GUTTER (CURB SECTION AS SHOWN ON PLANS)
---	STREET CENTER LINE	—FM	EXISTING FORCE MAIN
—	PROPOSED WATER	—W	EXISTING WATER
⊗	PROPOSED WATER HYDRANT	⊗	EXISTING WATER HYDRANT
⊕	PROPOSED SANITARY MH	⊕	EXISTING WATER VALVE
⊖	PROPOSED SANITARY MH	⊖	EXISTING SANITARY MH
⊙	PROPOSED SANITARY SEWER	⊙	EXISTING SANITARY SEWER
▣	PROPOSED STORM SEWER	▣	EXISTING SANITARY SEWER
▢	PROPOSED STORM INLET	▢	EXISTING STORM SEWER
⊖	PROPOSED STORM MH	⊖	EXISTING STORM INLET
⊕	PROPOSED STORM FES	⊕	EXISTING STORM MH
⊖	PROPOSED BOXBASE MH	⊖	EXISTING STORM FES

STATEMENTS

Design Engineer's Statement:

These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.

Richard N. Wray, P.E. #19310

10/1/17

Date

For and on behalf of Kiowa Engineering Corp.

Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in these detailed plans and specifications.

J. Ryan Watson, President

Date

Glen Development Company

3 Widefield Boulevard

Colorado Springs, Colorado 80911

El Paso County:

County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document.

In accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, and Engineering Criteria Manual as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Directors discretion.

Jennifer Irvine, P.E.

Date

County Engineer / ECM Administrator

UTILITY APPROVALS

WATER AND SEWER MAIN EXTENSIONS

Any changes or alterations affecting the grade, alignment, elevation and/or depth of cover of any water or sewer mains or other appurtenance shown on this drawing shall be the responsibility of the Owner/Developer. The Owner/Developer shall be responsible for all operational damages and defects in installation and material for mains and services from the date of approval until final acceptance is issued.

Signed _____

Date _____

Print Name

J. Ryan Watson

DBA:

GLEN DEVELOPMENT COMPANY

Address: 3 Widefield Boulevard

Colorado Springs, CO 80911

(719) 392-0194

FIRE AUTHORITY APPROVAL

The number of fire hydrants and hydrant locations shown on this water installation plan are correct and adequate to satisfy the fire protection requirements as specified by the Fire District serving the property noted on the plans.

Security Fire Department

Signed _____

Date _____

Security Fire Department

DISTRICT APPROVALS

The Widefield Water and Sanitation District recognizes the design engineer as having responsibility for the design. The Widefield Water and Sanitation District has limited its scope of review accordingly.

WIDEFIELD WATER AND SANITATION DISTRICT
WASTEWATER DESIGN APPROVAL

Date: _____

By: _____

In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.

WIDEFIELD WATER AND SANITATION DISTRICT
WATER DESIGN APPROVAL

Date: _____

By: _____

In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.

GOVERNING AGENCIES

El Paso County Planning & Community

Black Hills Energy

Development Department

18965 Bas Canyon Road Unit A7

2880 International Circle Suite 110

Monument, Colorado

Colorado Springs Colorado

(719) 359-0586

(719) 520-6300

Widefield Water & Sanitation District

Mountain View Electric Association

37 Widefield Blvd.

11140 East Woodmen Road

Colorado Springs, Colorado

Falcon, Colorado

(719) 495-2283

(719) 390-7111

DEVELOPER:

W

WIDEFIELD

Investment Group

3 WIDEFIELD BOULEVARD

COLORADO SPRINGS, CO 80911

PREPARED BY:

Kiowa

Celebrating 30 years

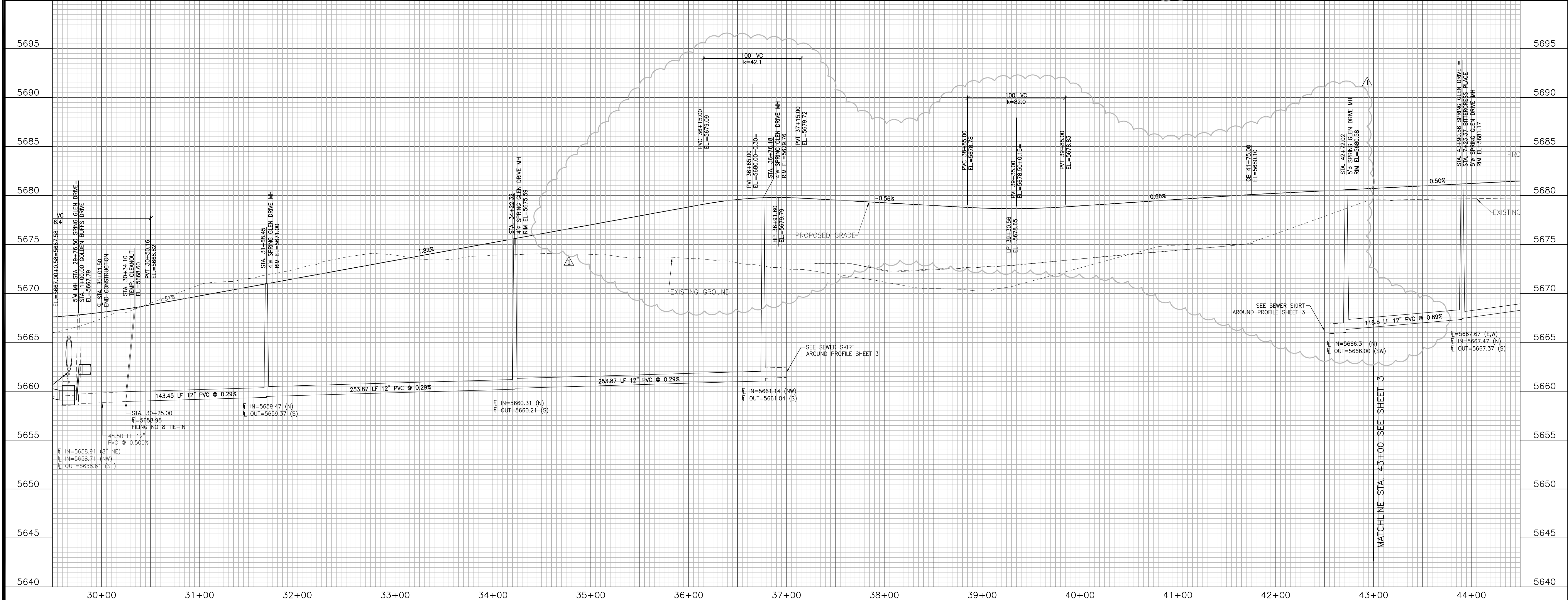
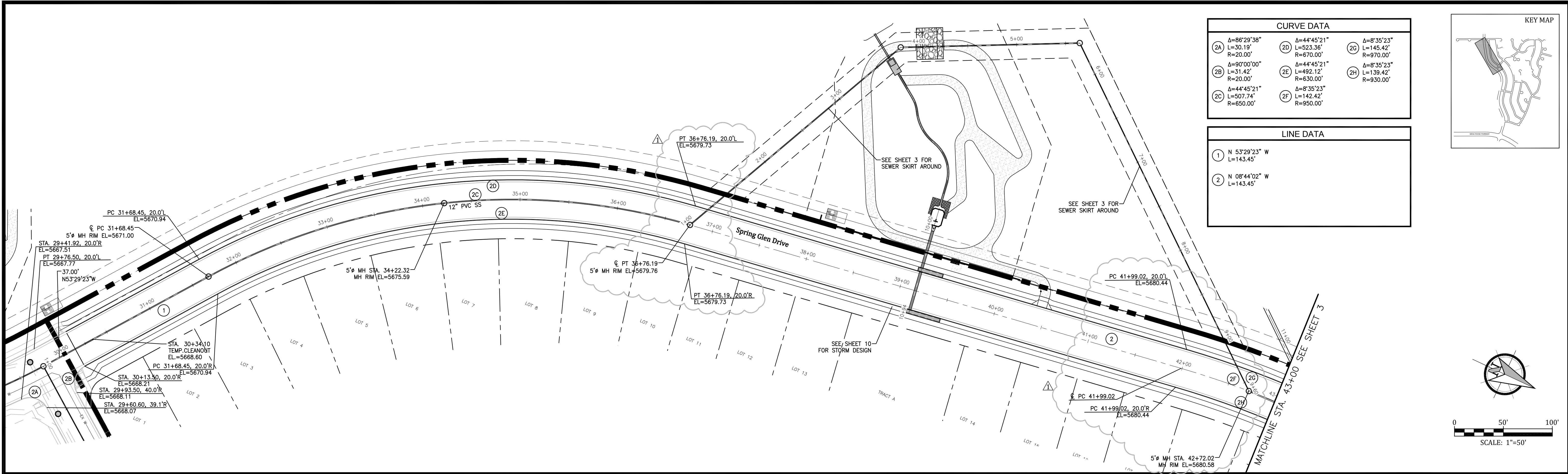
Engineering Corporation

1604 South 21st Street

Colorado Springs, Colorado 80904

(719) 630-7342

PCD File No. SF-18-005



GLEN AT WIDEFIELD FILING NO. 9
SPRING GLEN DRIVE (Sta. 30+00 to Sta. 43+00)
PLAN AND PROFILE
EL PASO COUNTY, COLORADO

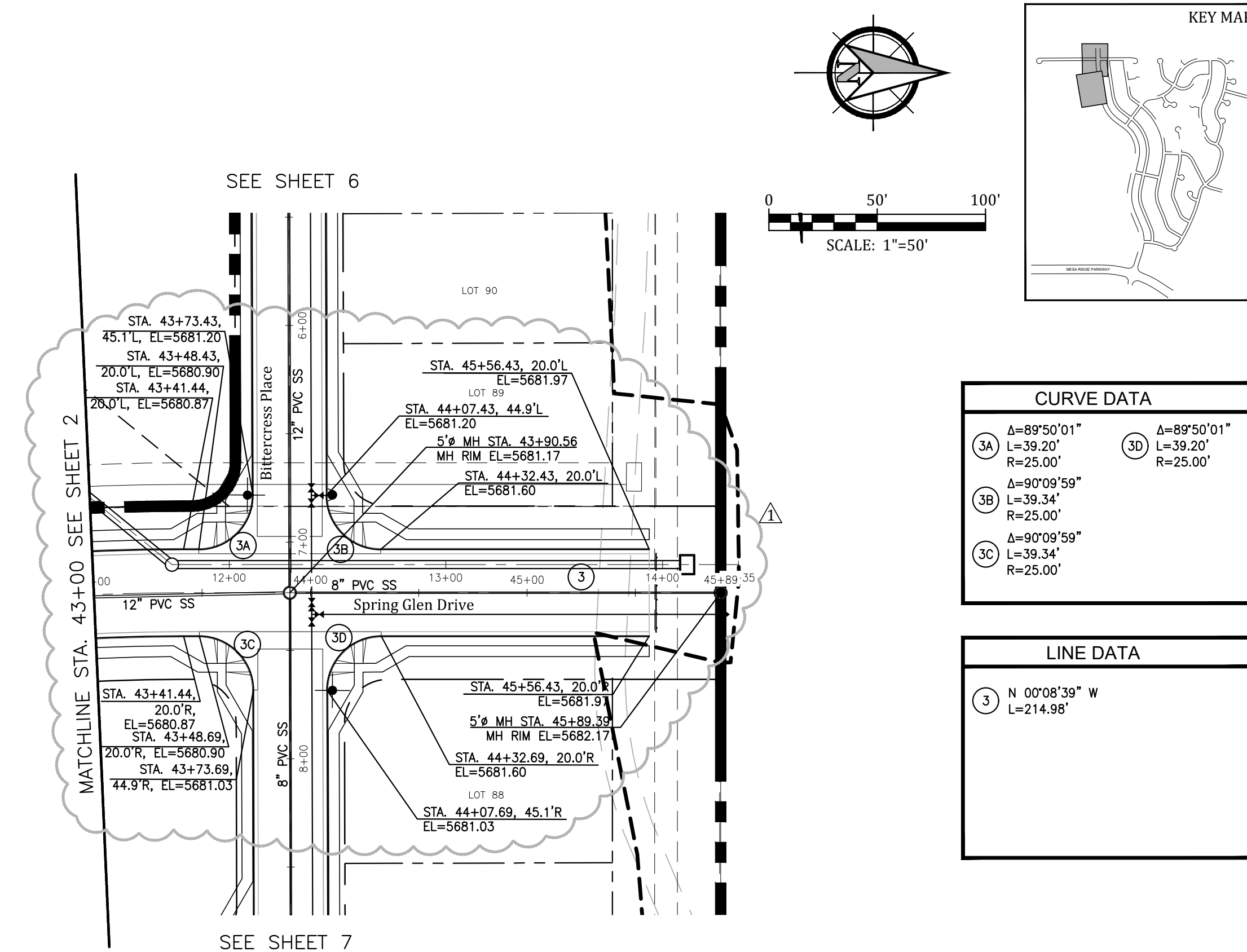
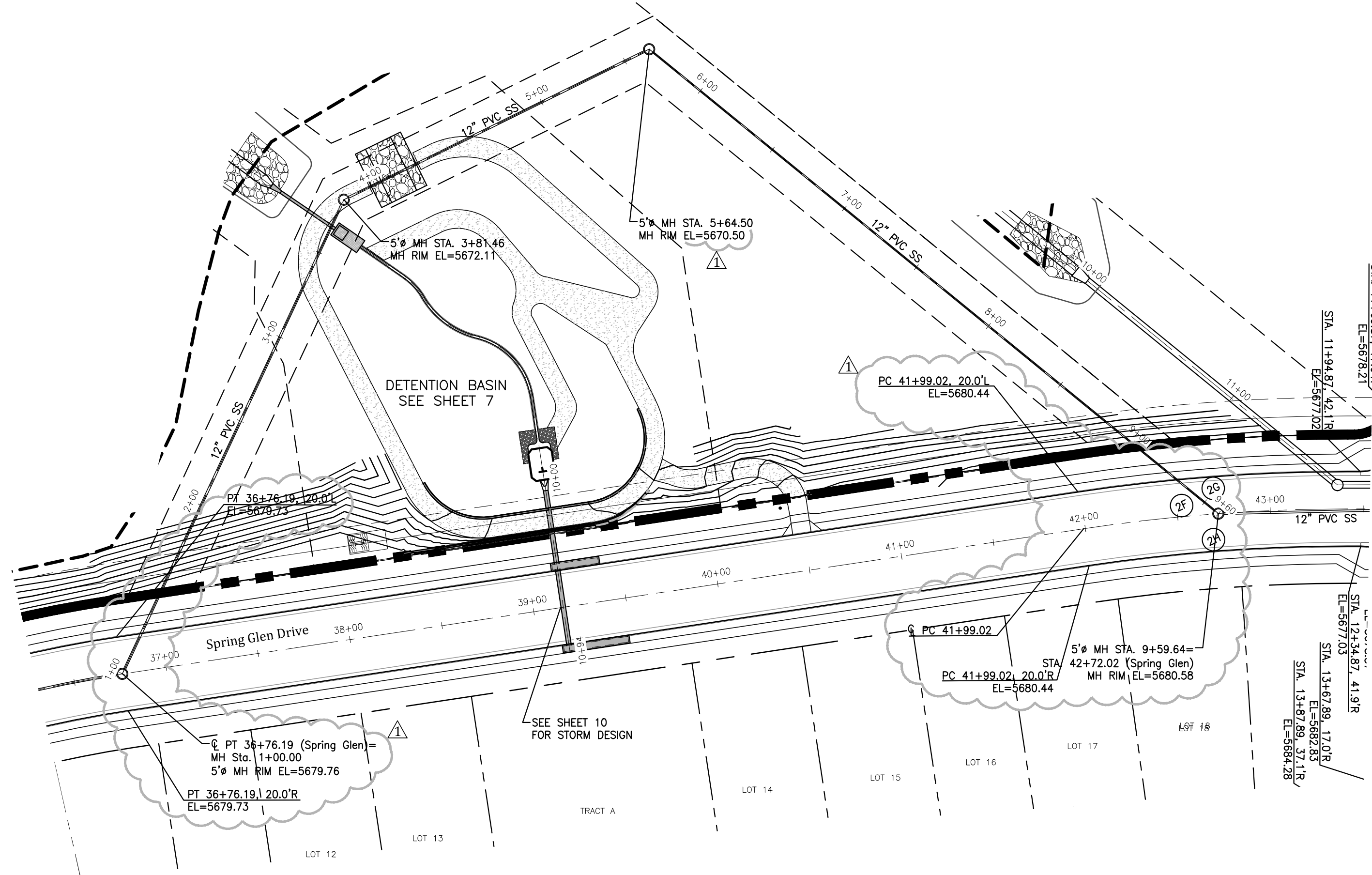
Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK
Check:	AWMc
Revisions:	
4/16/19 Profile/San. Sewer	

SHEET

2

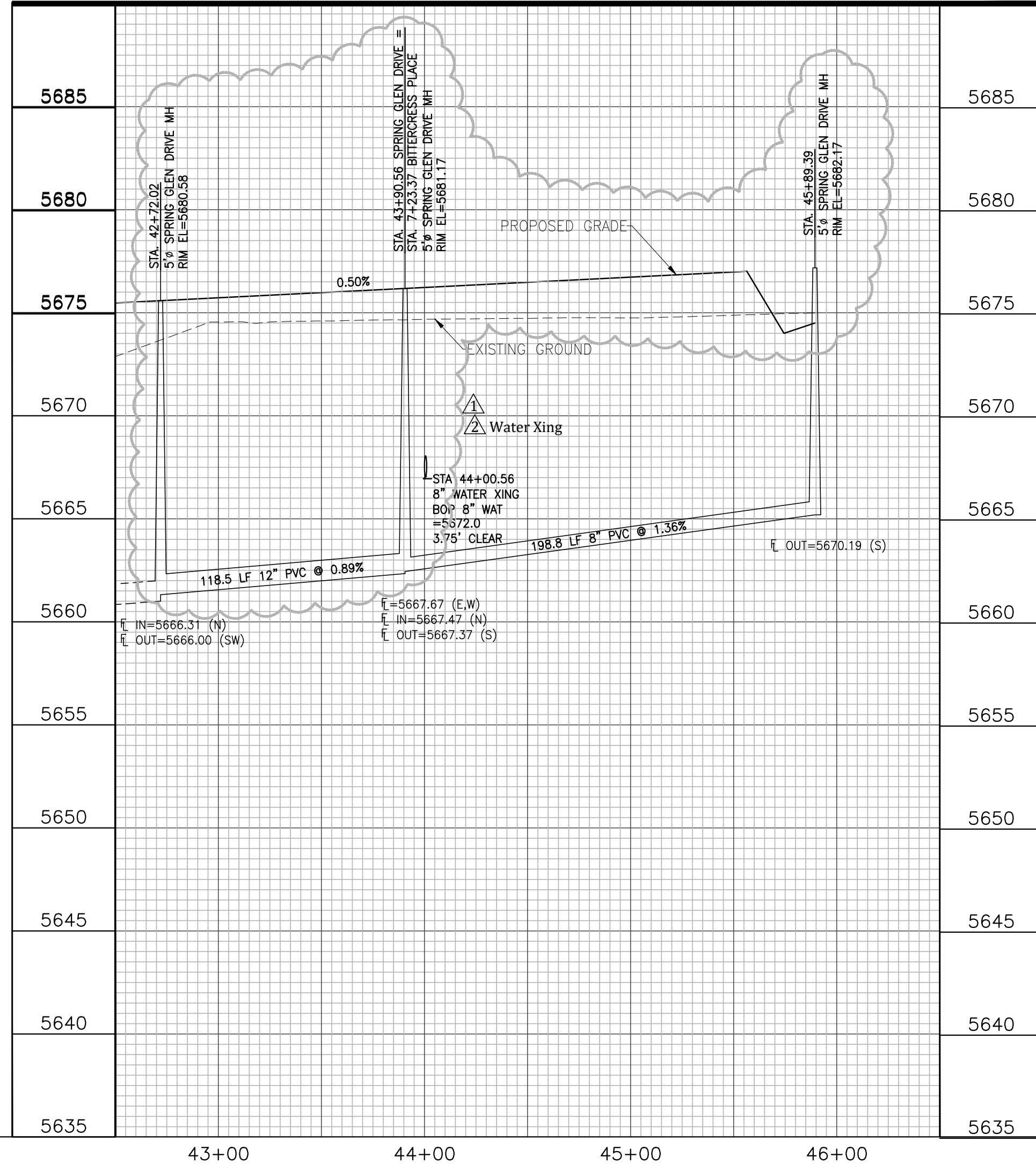
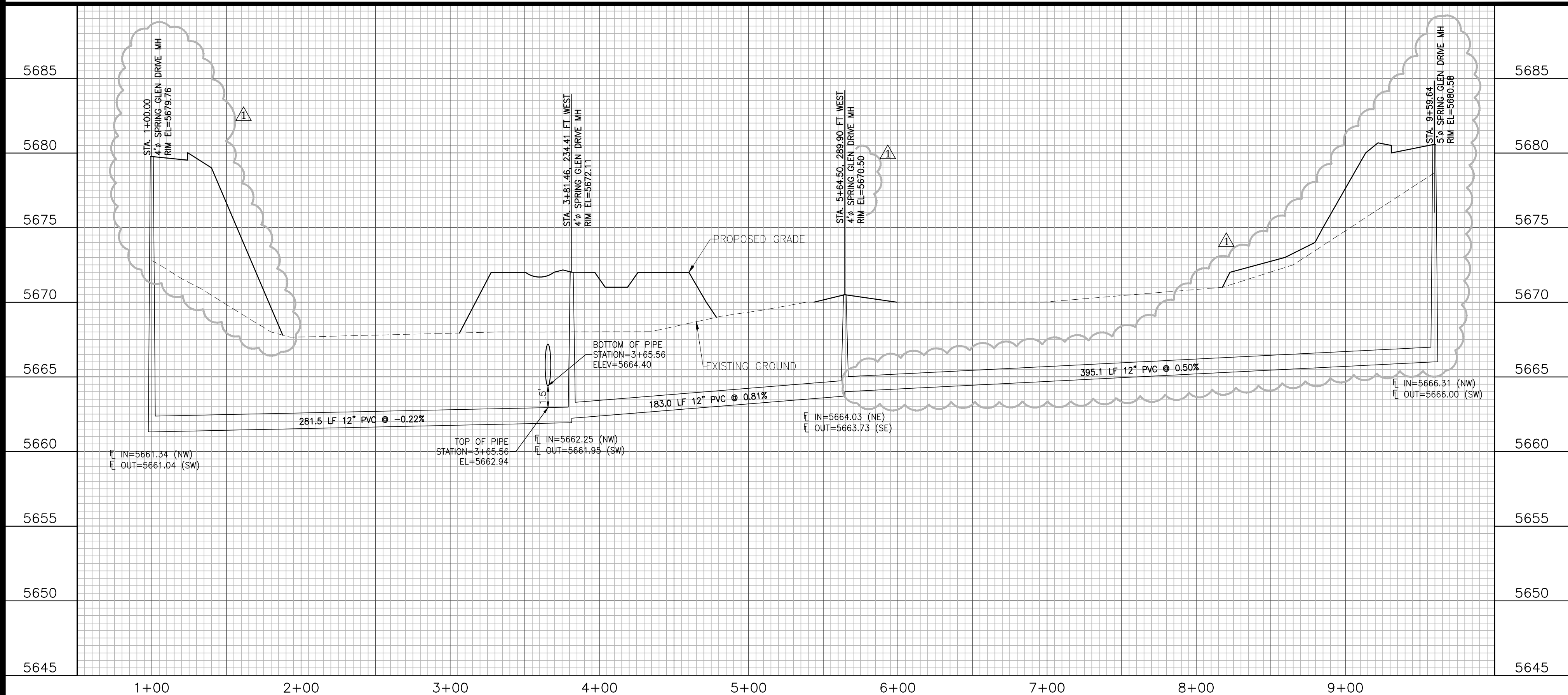
2 of 20 Sheets

17038-GW9-2-16-PP.dwg/Apr. 30, 2019



CURVE DATA	
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3B	$\Delta=90^{\circ}09'59''$ $L=39.34'$ $R=25.00'$
3C	$\Delta=90^{\circ}09'59''$ $L=39.34'$ $R=25.00'$
3D	$\Delta=89^{\circ}50'01''$ $L=39.20'$ $R=25.00'$

LINE DATA	
3	N $00^{\circ}08'39''$ W $L=214.98'$



GLEN AT WIDEFIELD FILING NO. 9 SPRING GLEN DRIVE (Sta. 43+00 to Sta. 45+89) PLAN AND PROFILE EL PASO COUNTY, COLORADO

Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK
Check:	AWMc
Revisions:	
4/16/19 Profile/San. Sewer	
6/04/19 3rd Sub Comments	

SHEET

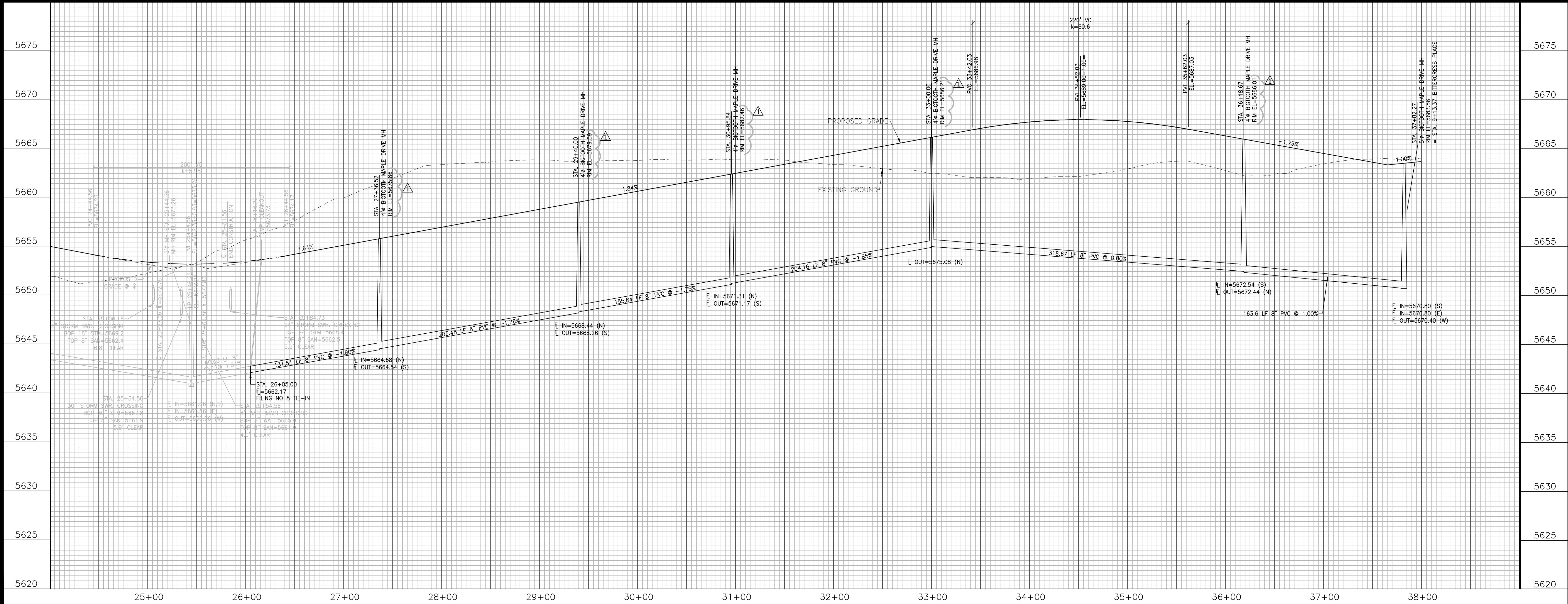
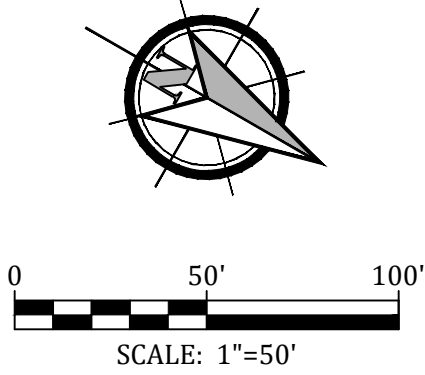
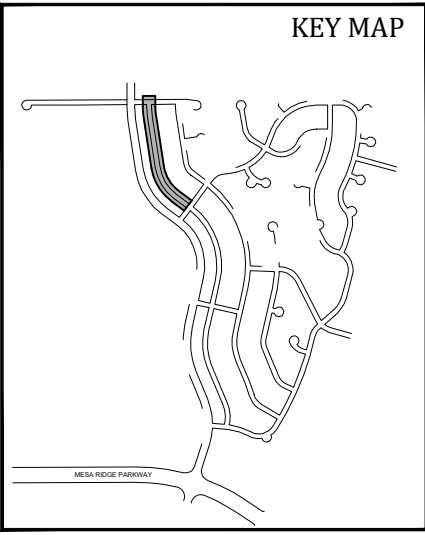
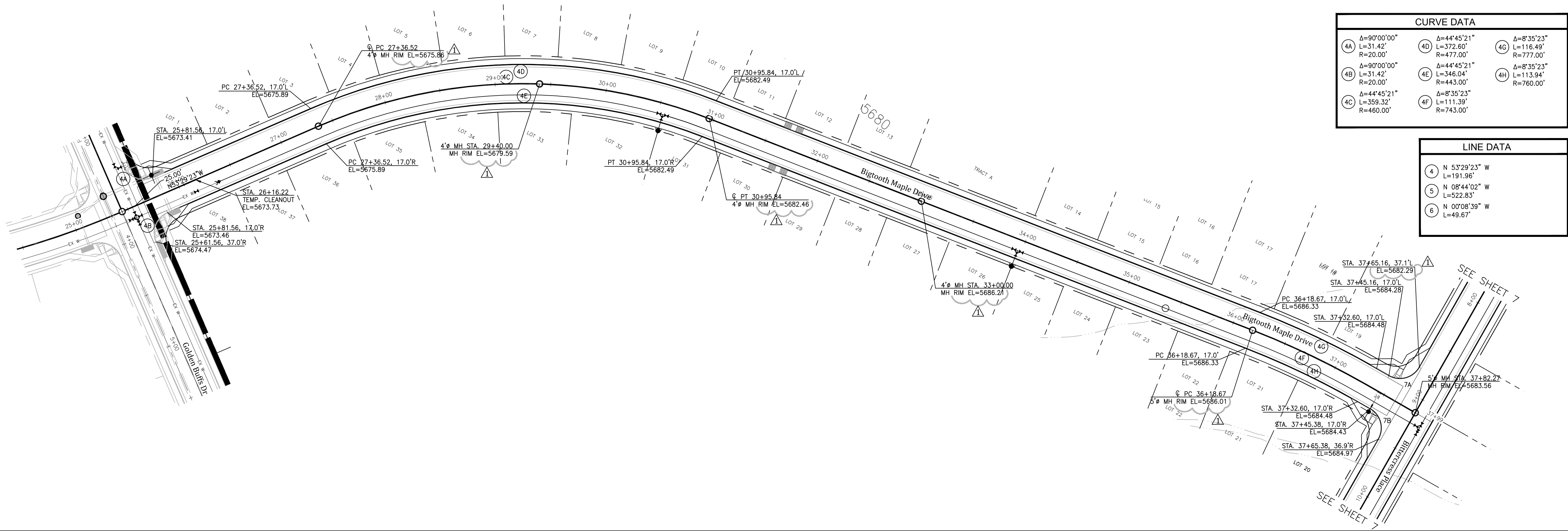
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3 of 20 Sheets

17038-GWB-2-16-PP.dwg/Jan 03, 2019

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group

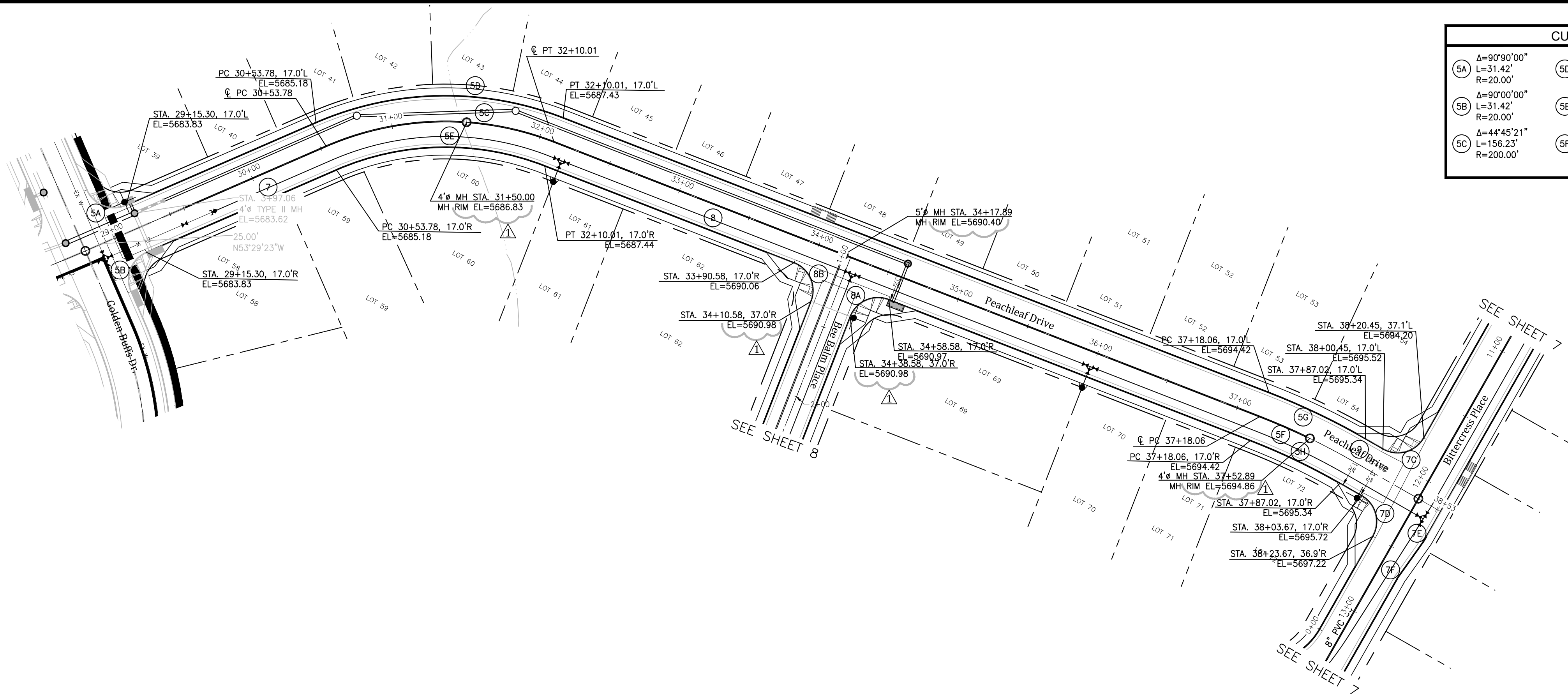


GLEN AT WIDEFIELD FILING NO. 9
BIGTOOTH MAPLE DRIVE (Sta. 25+50 to Sta. 37+82)
PLAN AND PROFILE
EL PASO COUNTY, COLORADO

Project No.: 17038
Date: September 25, 2018
Design: AWMc
Drawn: JAK
Check: AWMc
Revisions:
4/16/19 San. Sewer Rim EL.

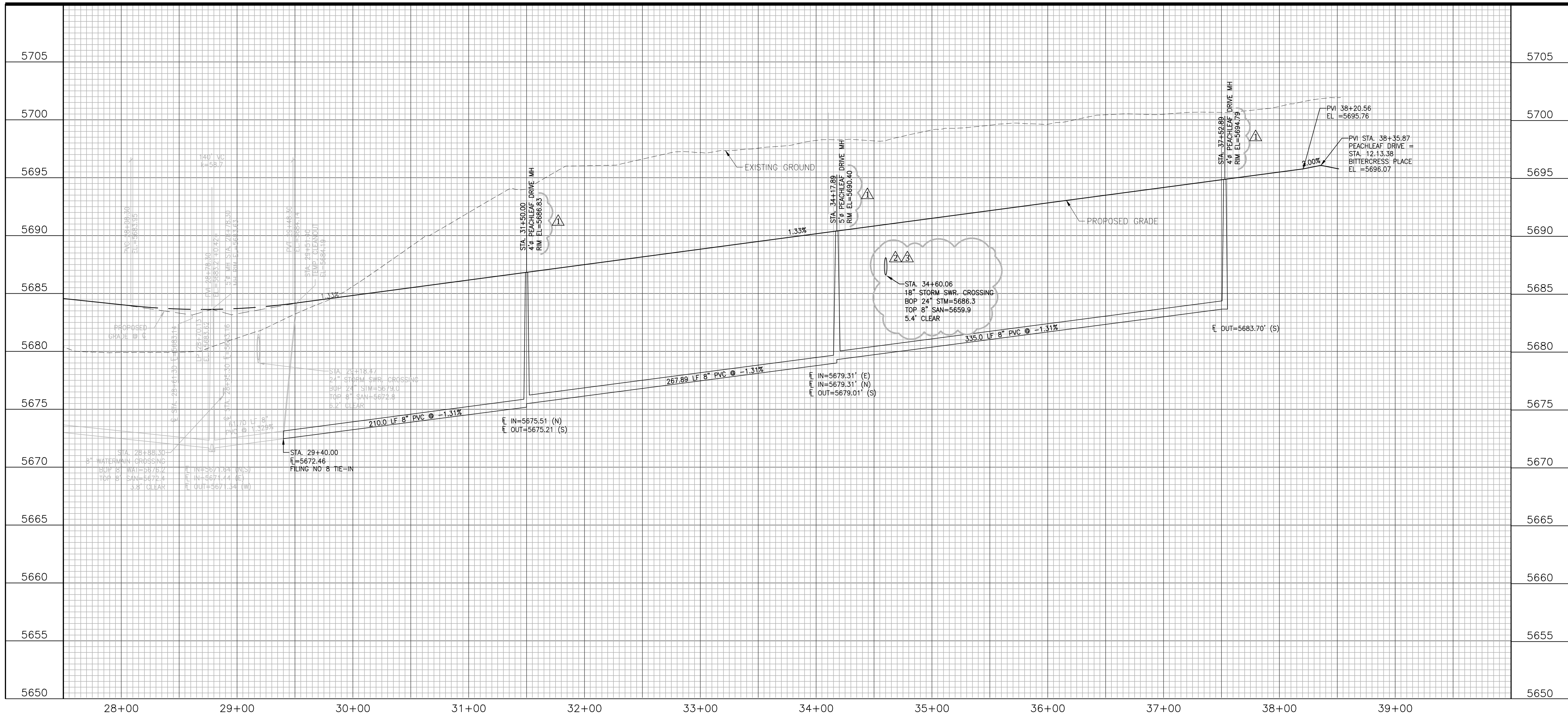
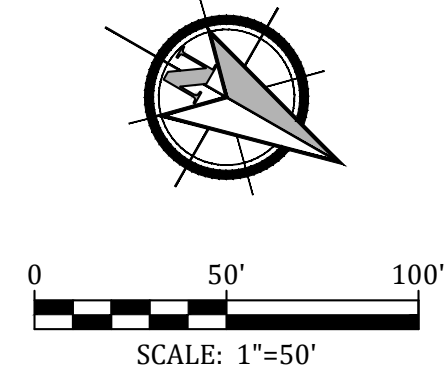
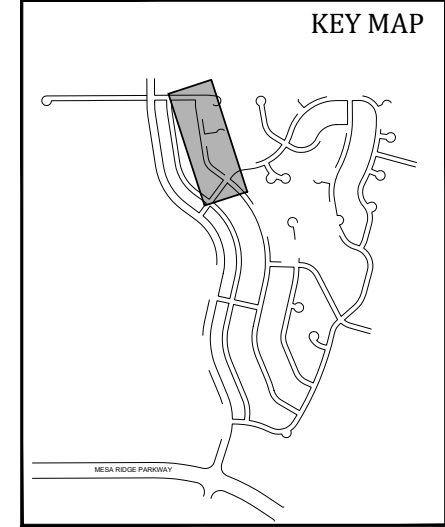
SHEET

4



CURVE DATA		
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5B $\Delta=90^{\circ}00'00''$ L=31.42' R=20.00'	5E $\Delta=44^{\circ}45'21''$ L=142.95' R=183.00'	5H $\Delta=8^{\circ}35'23''$ L=66.41' R=443.00'
5C $\Delta=44^{\circ}45'21''$ L=156.23' R=200.00'	5F $\Delta=8^{\circ}35'23''$ L=68.96' R=460.00'	

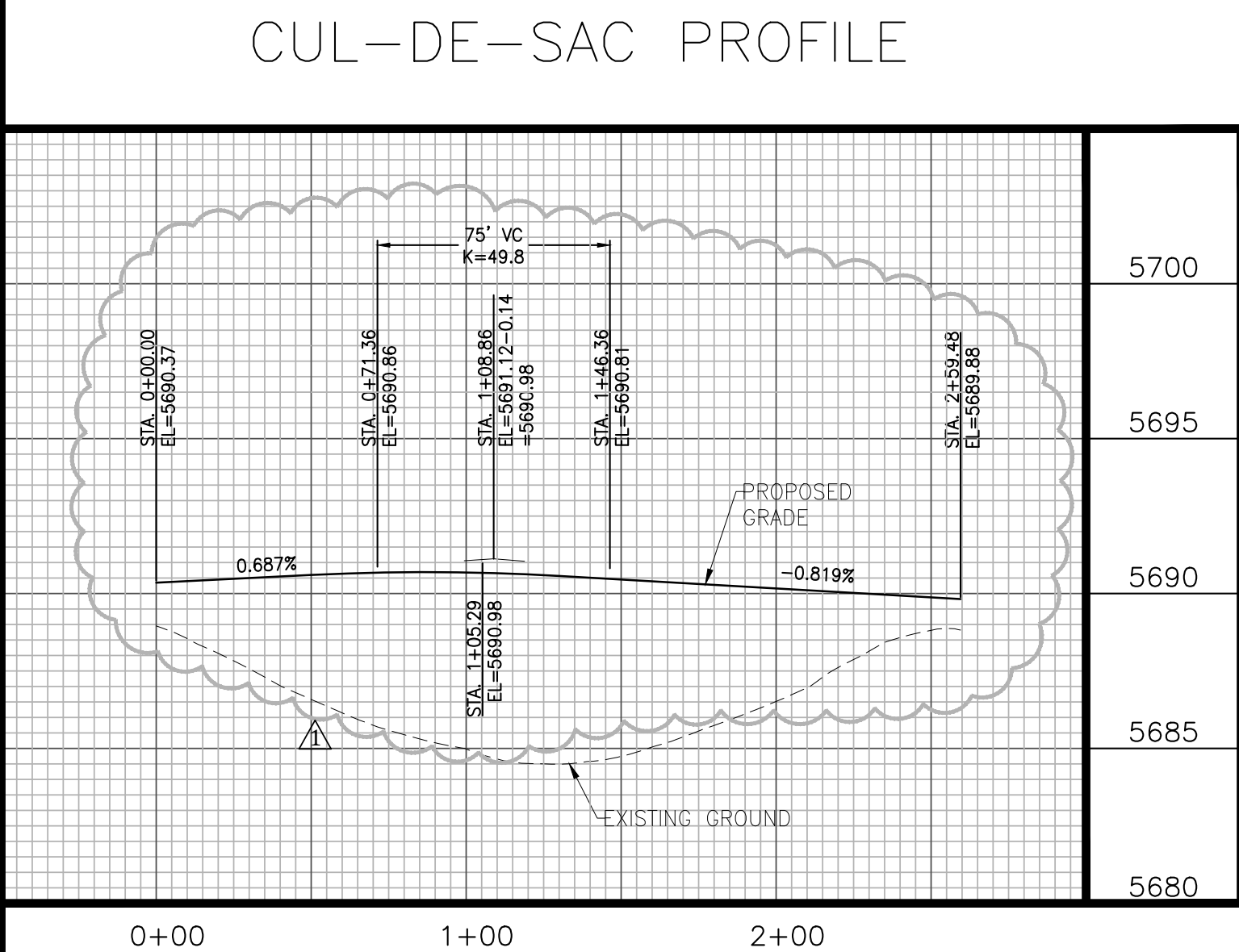
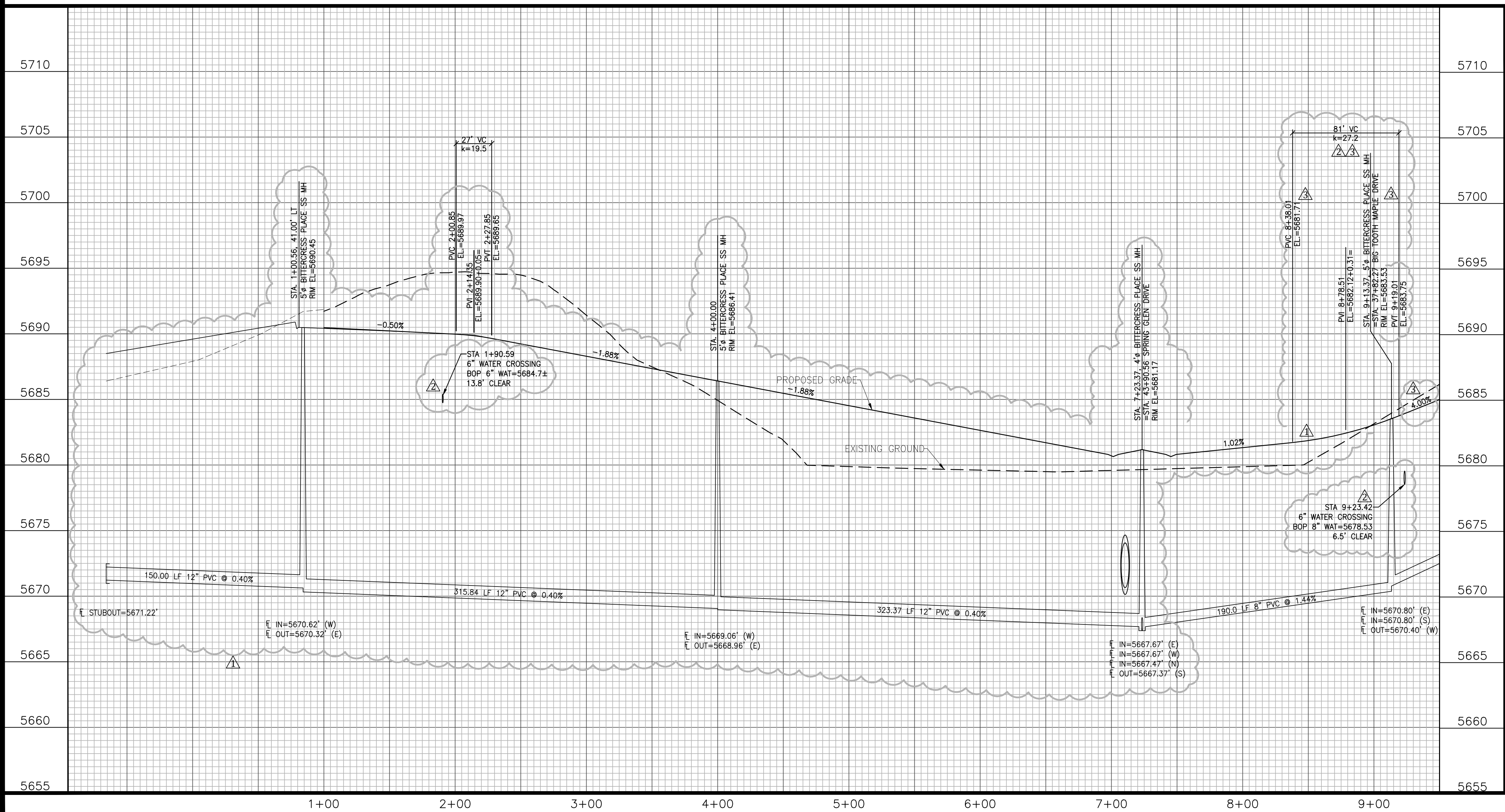
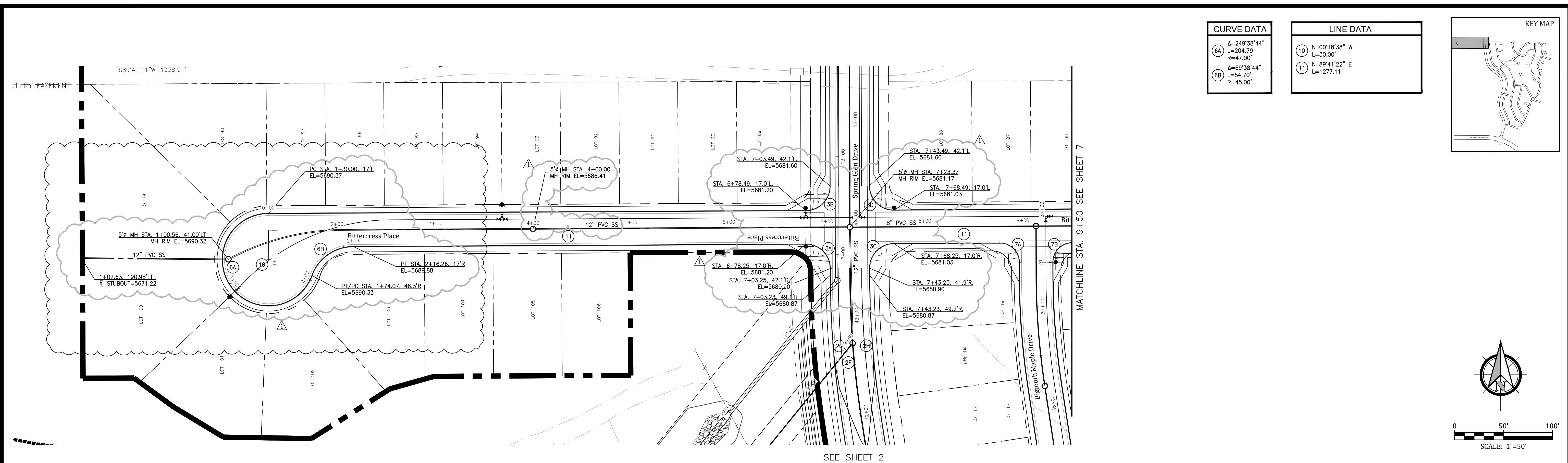
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9	N 07°08'39" W L=50.54'

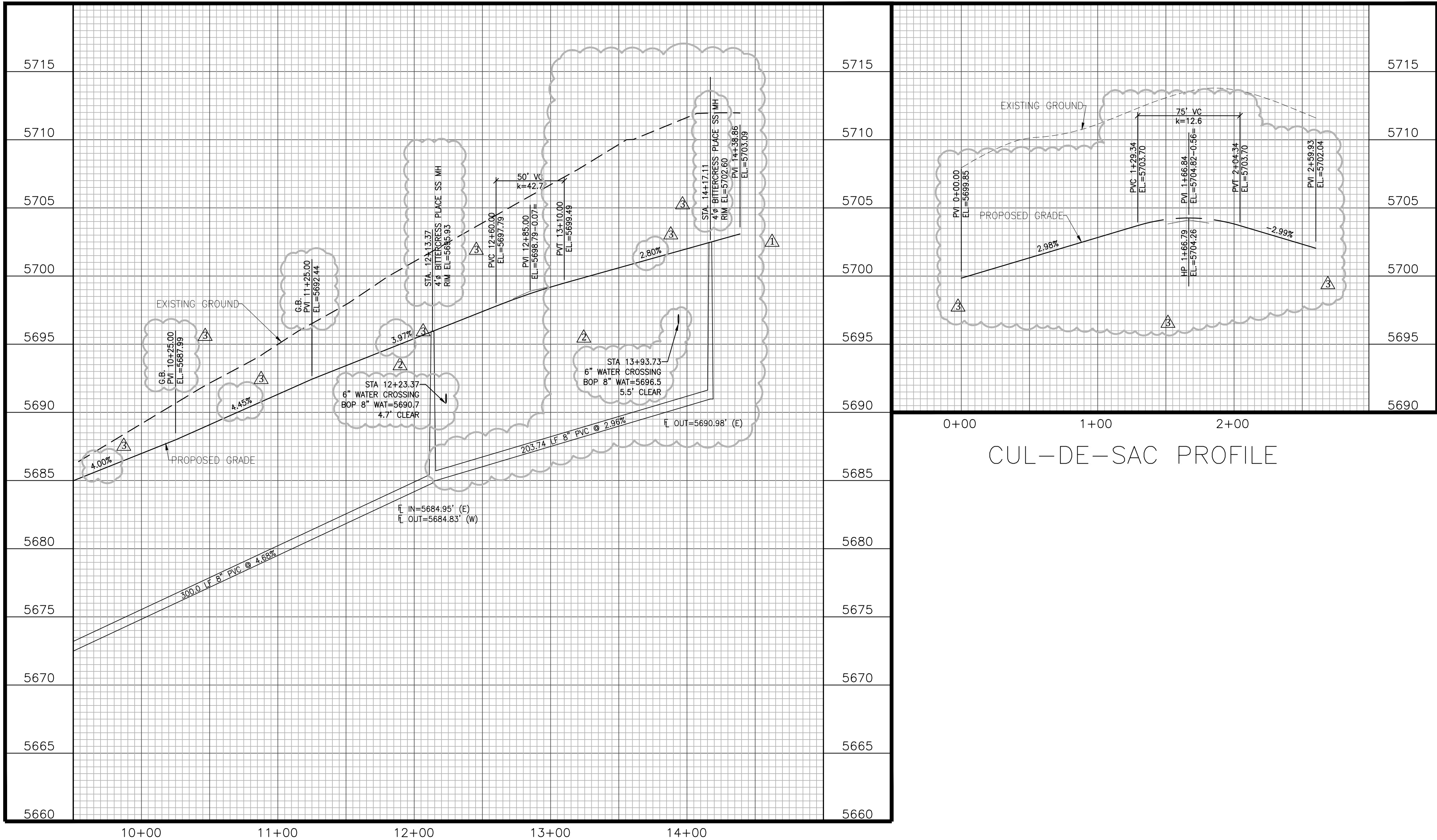
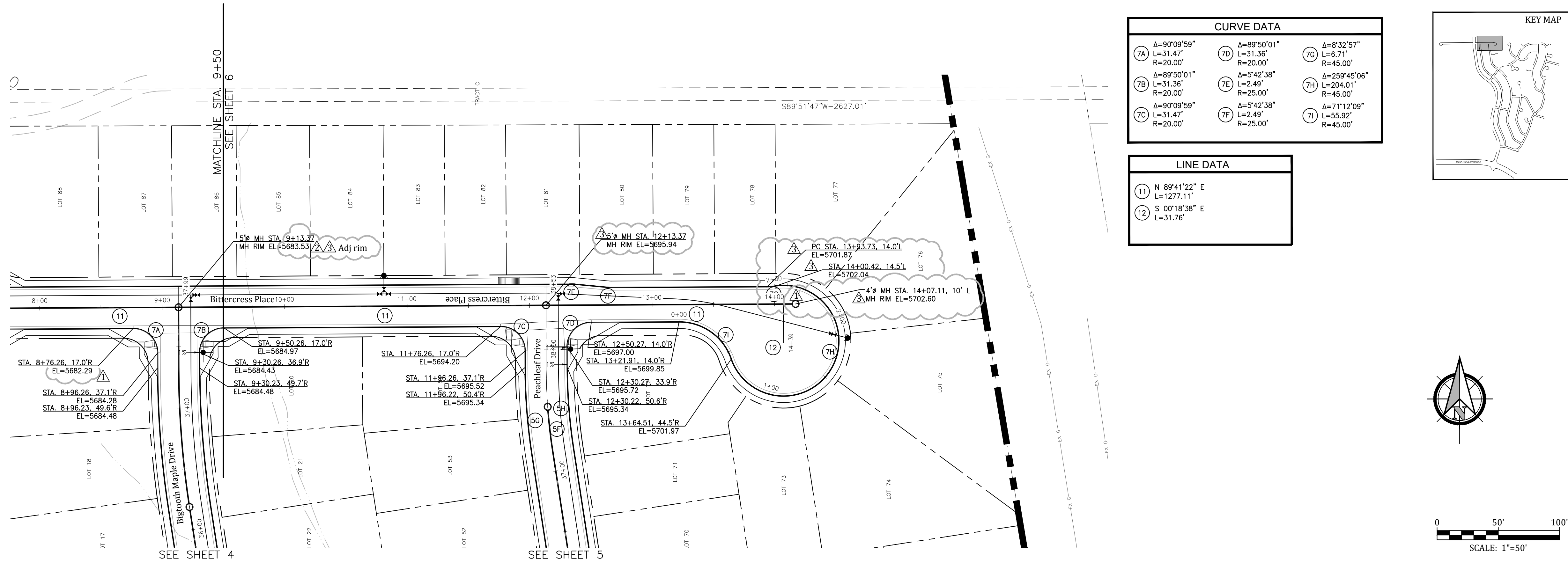


06/24/19 4th Sub Comments

GLEN AT WIDEFIELD FILING NO. 9 PEACHLEAF DRIVE (Sta. 25+00 to Sta. 38+36) PLAN AND PROFILE EL PASO COUNTY, COLORADO

Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK/MJK
Check:	AWMc
Revisions:	
4/16/19 San. Sew. Rim EL.	
06/04/19 3rd Sub Comments	





6/24/24 4th Sub Comments

GLEN AT WIDEFIELD FILING NO. 9
BITTERCRESS PLACE (Sta. 9+00 to Sta. 14+39)
PLAN AND PROFILE
EL PASO COUNTY, COLORADO

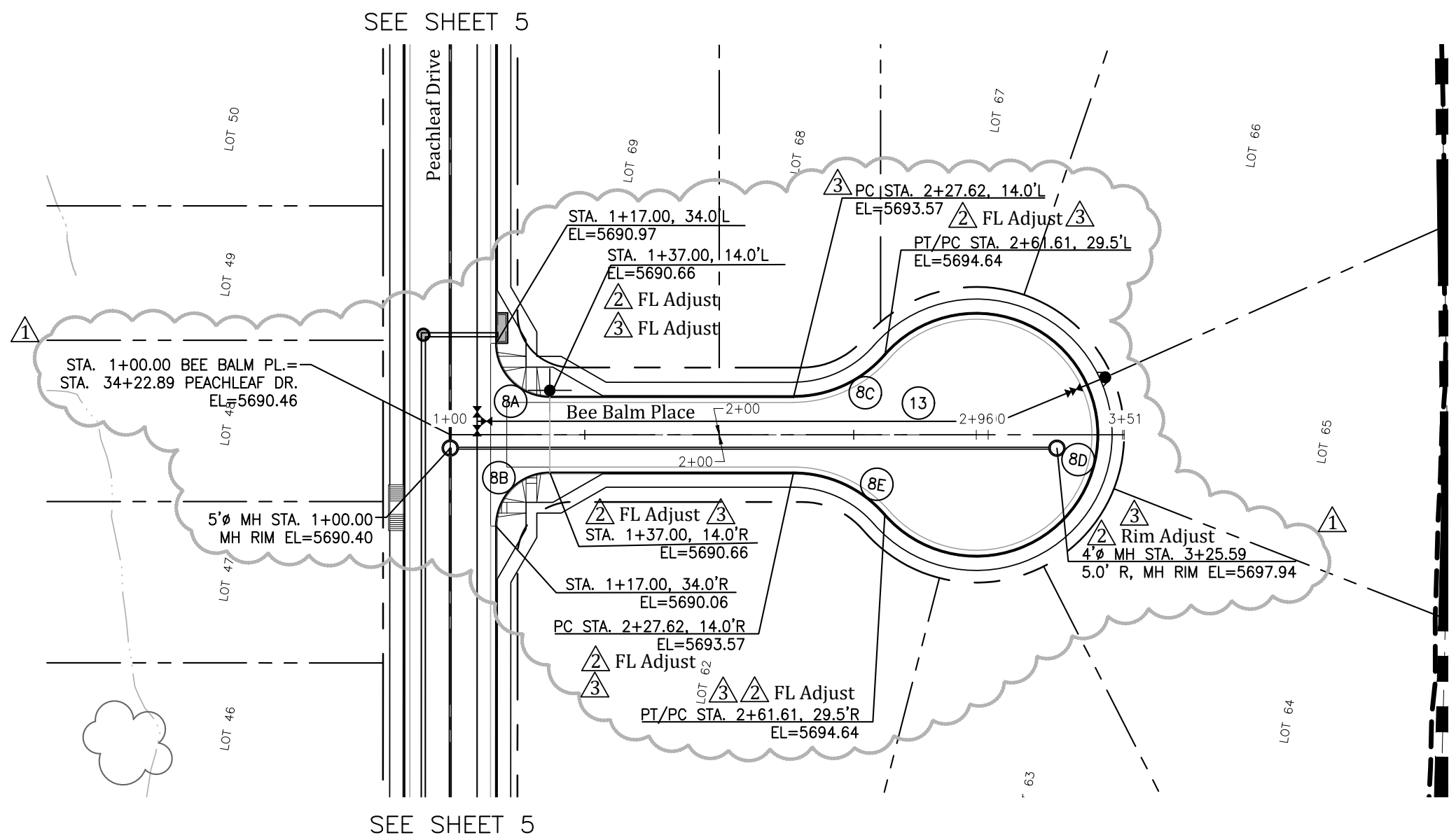
Project No.:	17038
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Design:	AWMc
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Check:	AWMc
Revisions:	
4/16/19 Profile/San. Sewer	
6/04/19 3rd Sub Comments	

SHEET

7

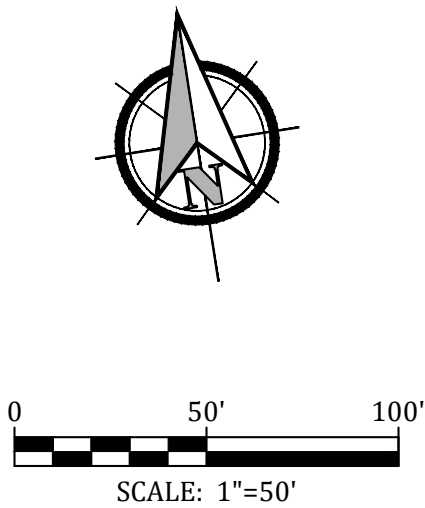
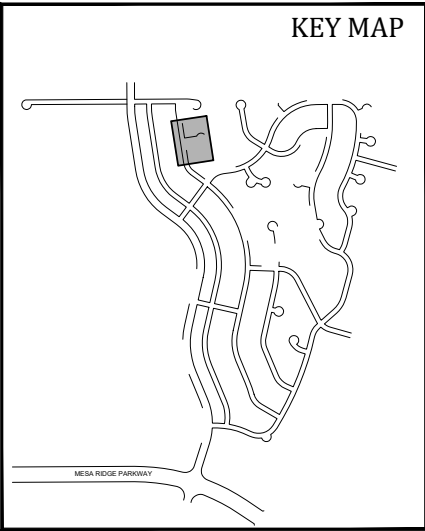
7 of 20 Sheets

17038-dw9-2-16-PP.dwg/Jul 02, 2019

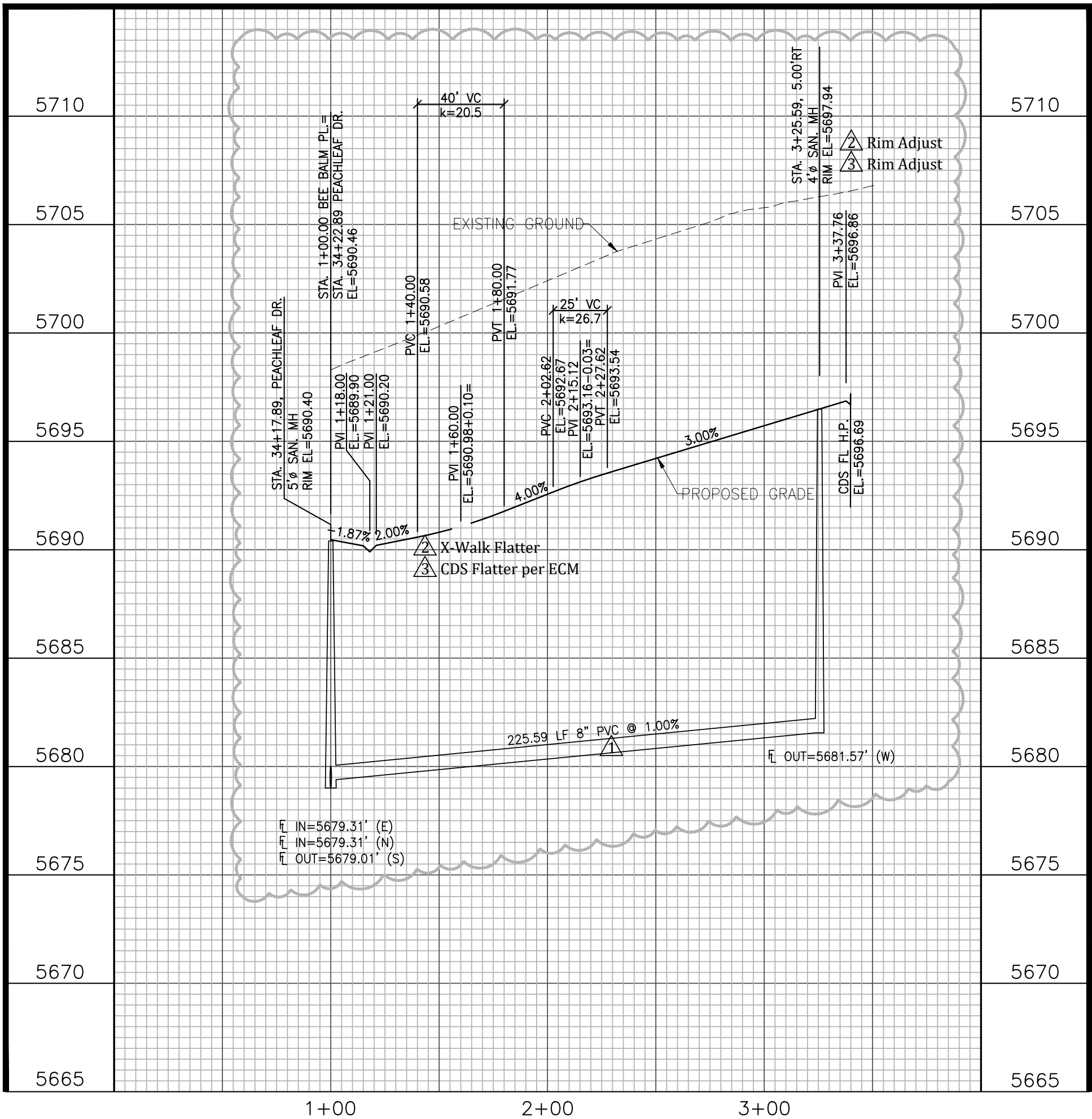


CURVE DATA	
8A	$\Delta=49^{\circ}02'18''$ $L=38.51'$ $R=45.00'$
8B	$\Delta=278^{\circ}04'35''$ $L=218.40'$ $R=45.00'$
8C	$\Delta=49^{\circ}02'18''$ $L=38.51'$ $R=45.00'$

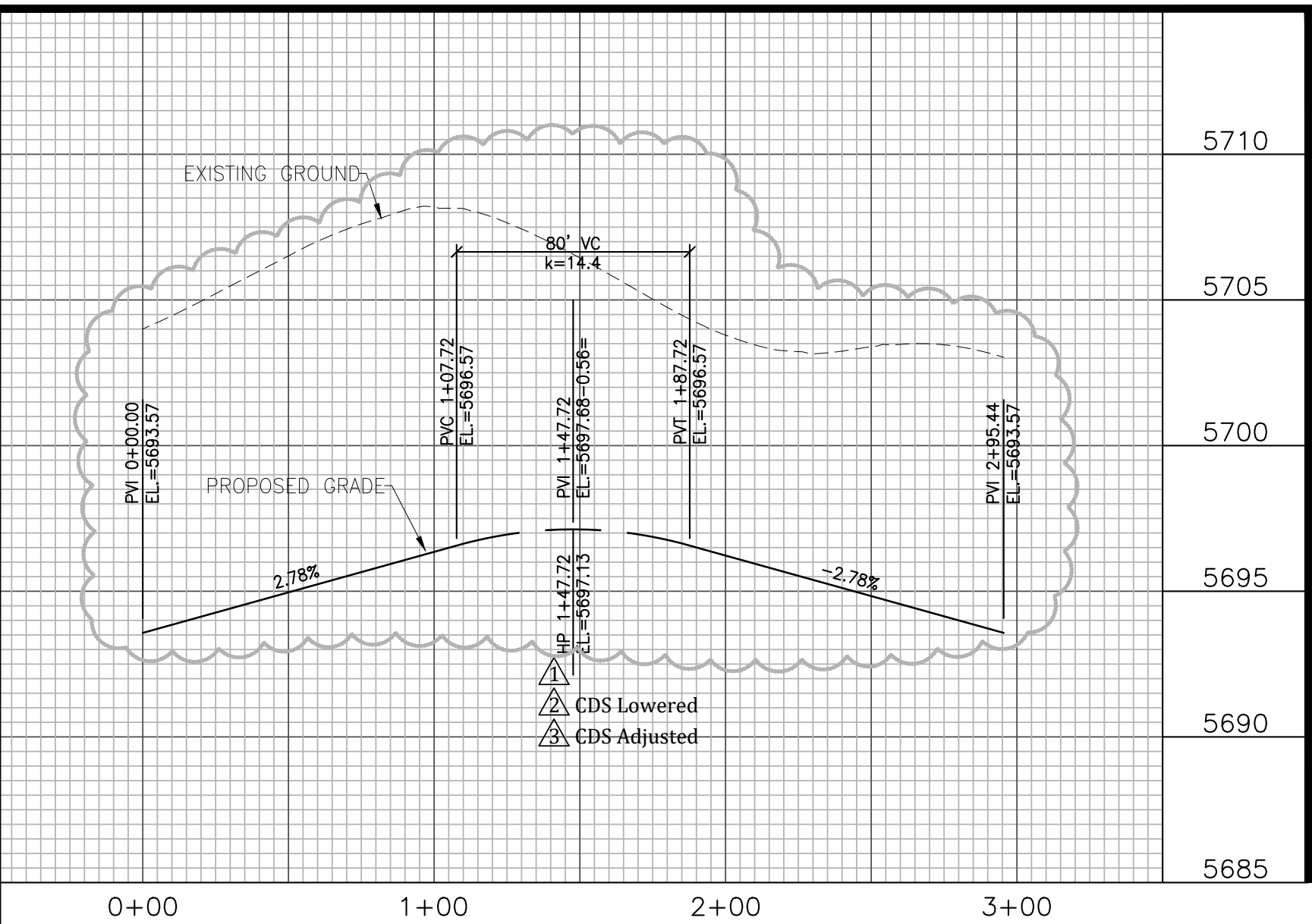
LINE DATA	
13	S $81^{\circ}15'58''$ E $L=250.59'$



CENTERLINE PROFILE



CUL-DE-SAC PROFILE



GLEN AT WIDEFIELD FILING NO. 9
BEE BALM PLACE (Sta. 1+00 to Sta. 3+51)
PLAN AND PROFILE
EL PASO COUNTY, COLORADO

Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK
Check:	AWMc
Revisions:	
4/16/19 Profile/San. Sewer	
6/04/19 3rd Sub Comments	

SHEET

8

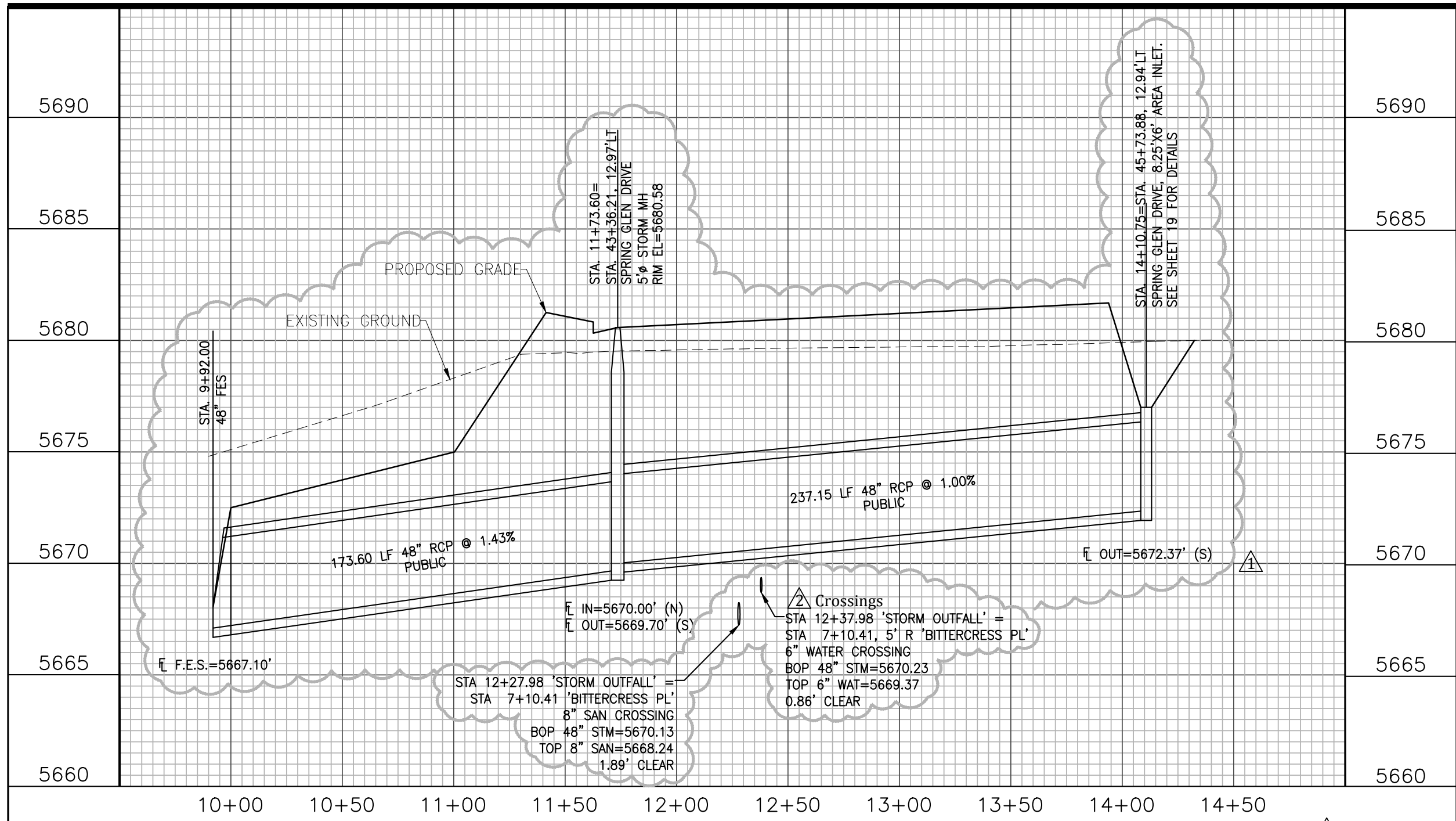
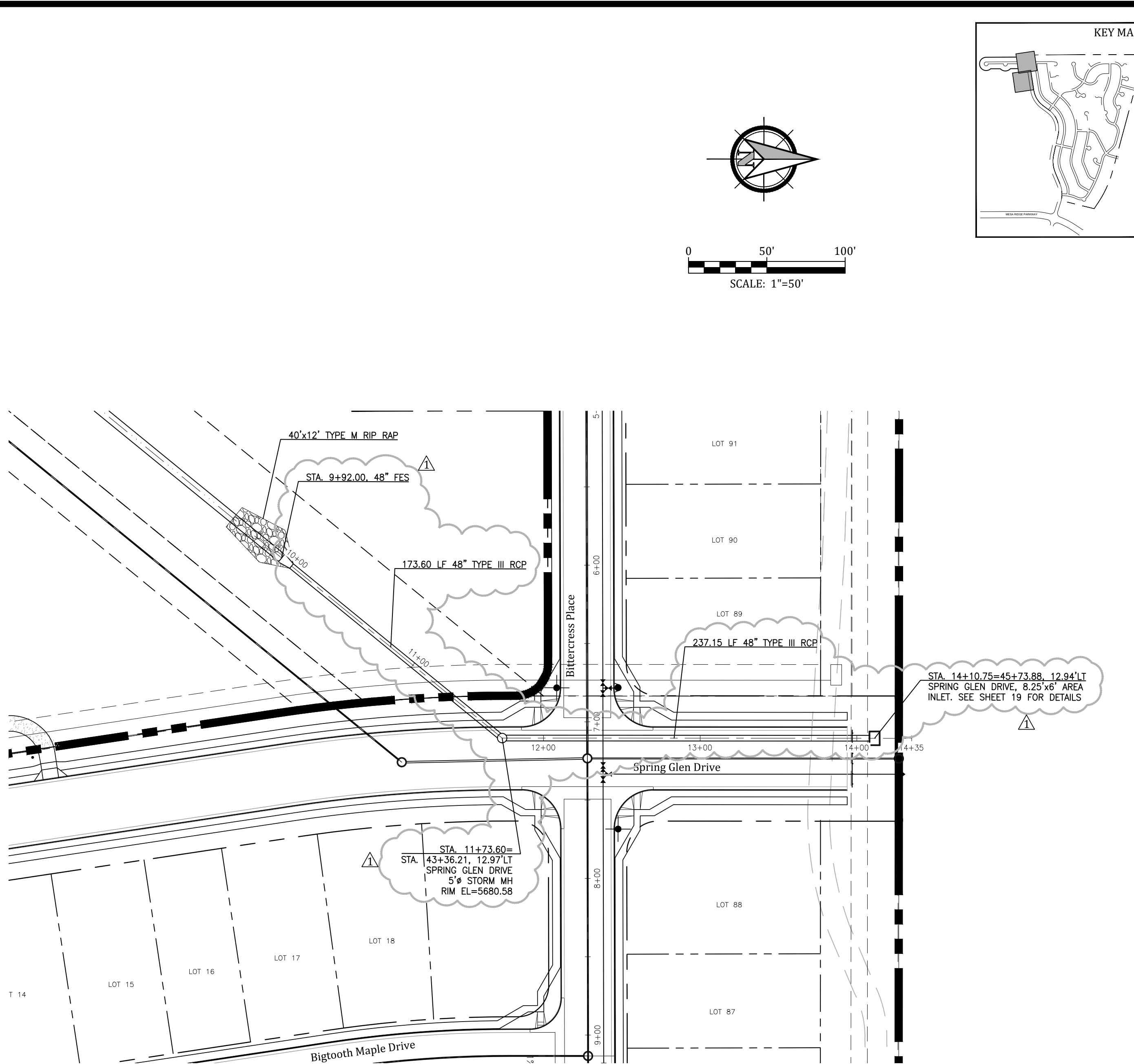
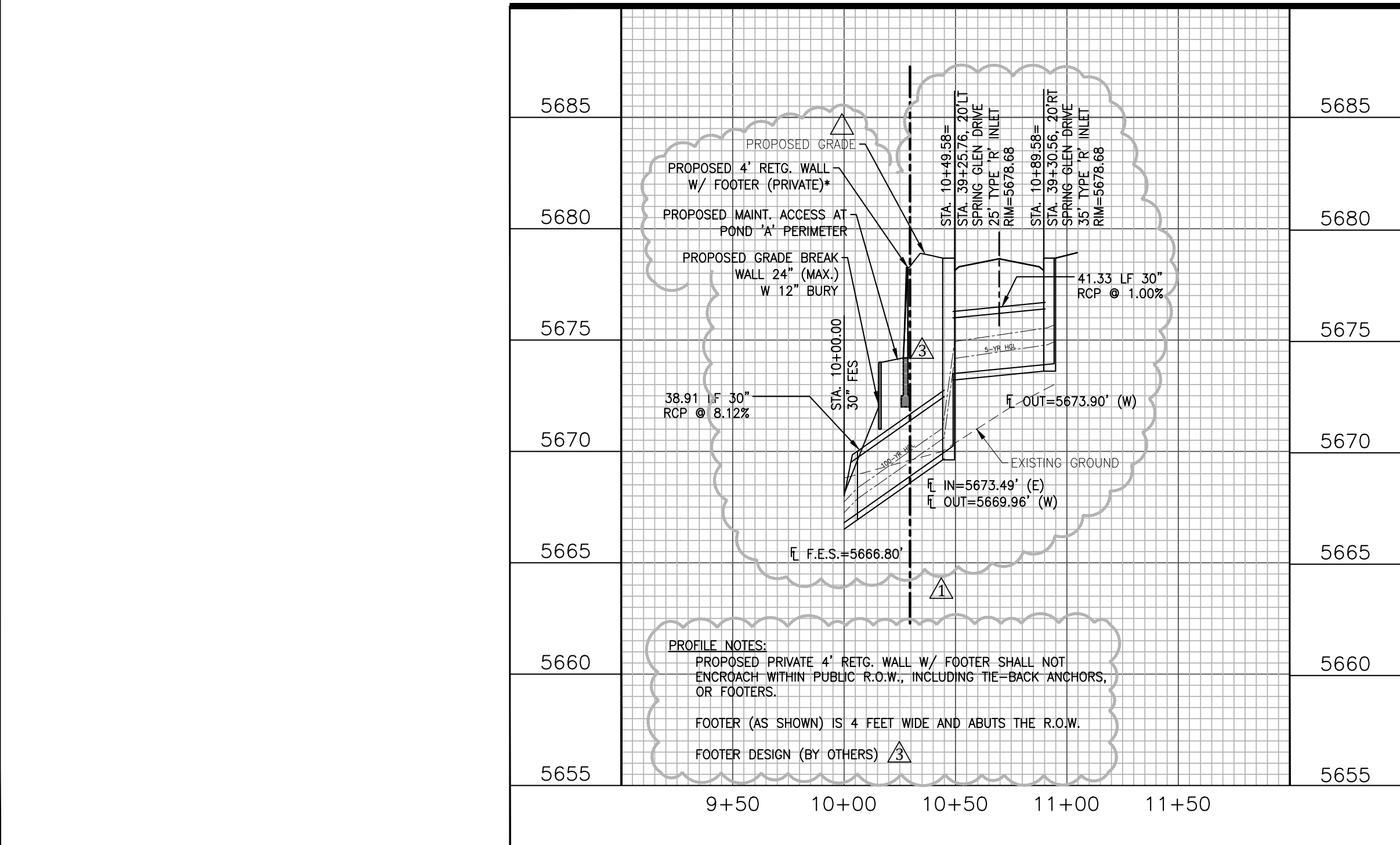
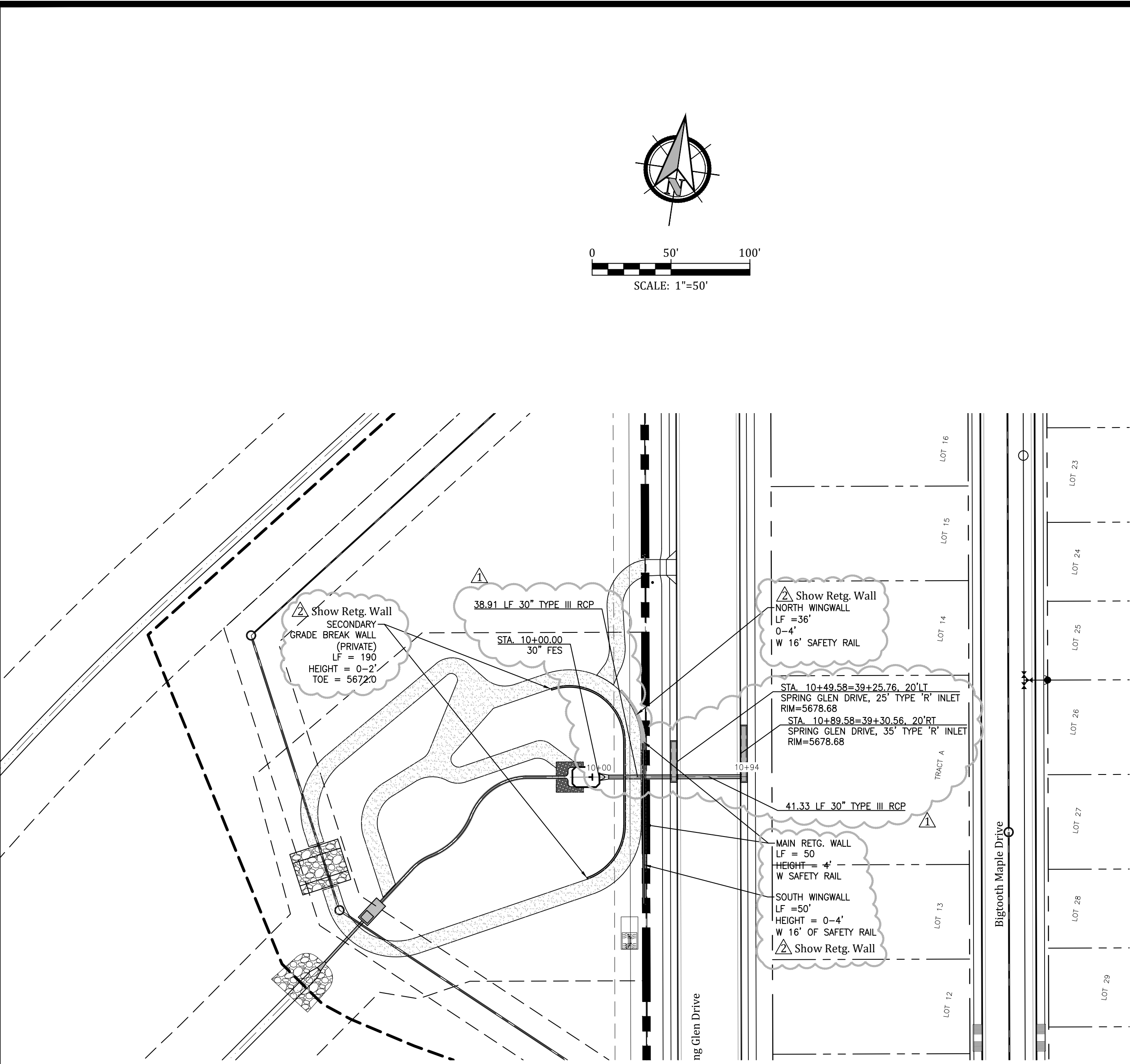
8 of 20 Sheets

6/24/24 4th Sub Comments

17038-dw9-2-16-PP.dwg/Jul 02, 2019

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group



6/24/24 4th Sub Comments

GLEN AT WIDEFIELD FILING NO. 9
STORM SEWER PLAN (Outfall & Offsite)
EL PASO COUNTY, COLORADO

Project No.: 17038
Date: September 25, 2018
Design: AWMc
Drawn: JAK/MJK
Check: AWMc
Revisions:
4/16/19 Profile/Stm. Sewer
6/04/19 3rd Sub Comments
SHEET

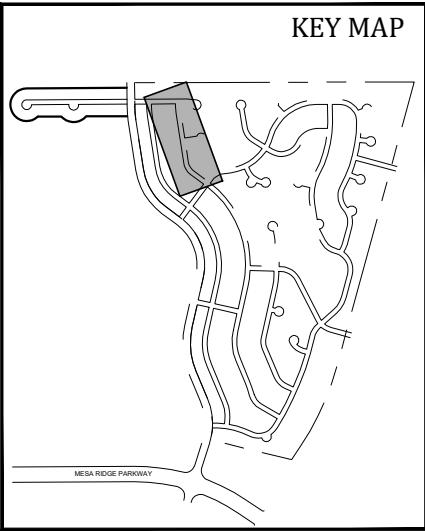
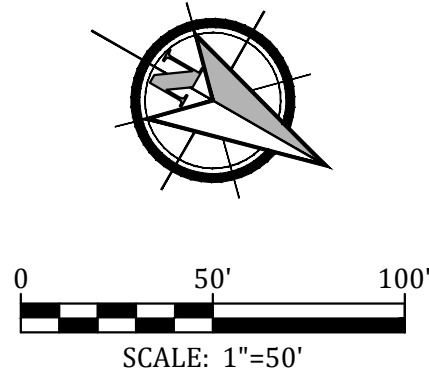
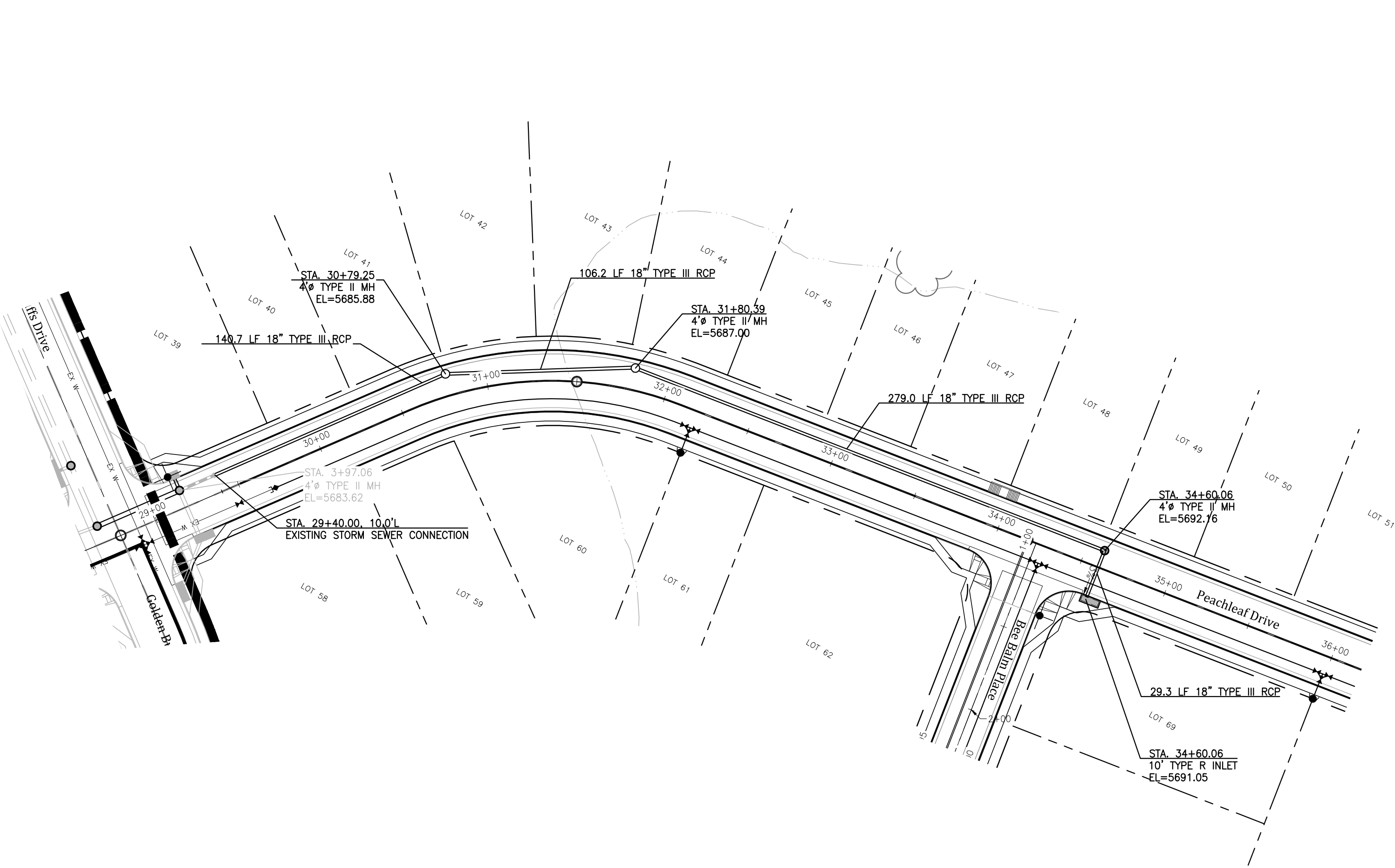
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10 of 20 Sheets

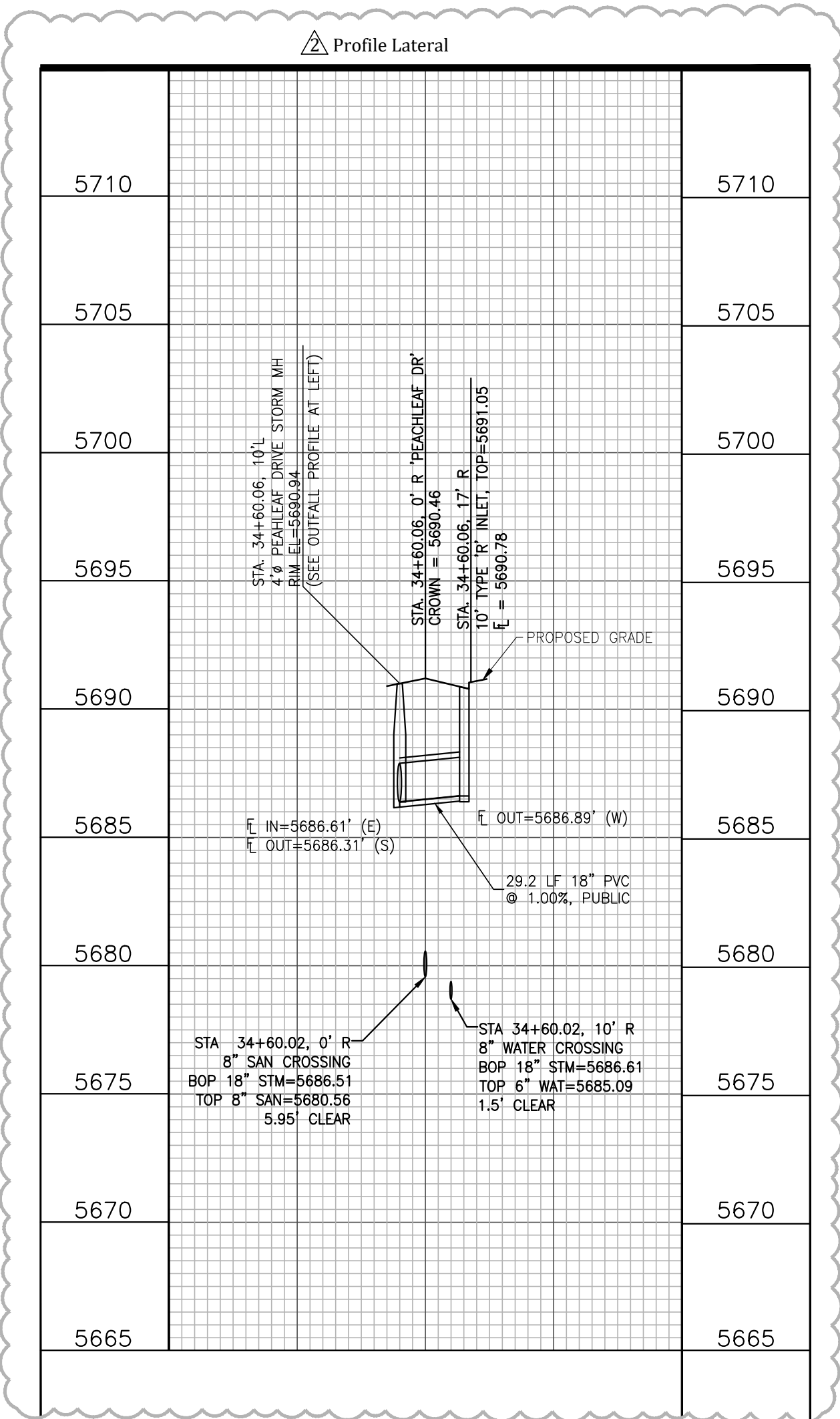
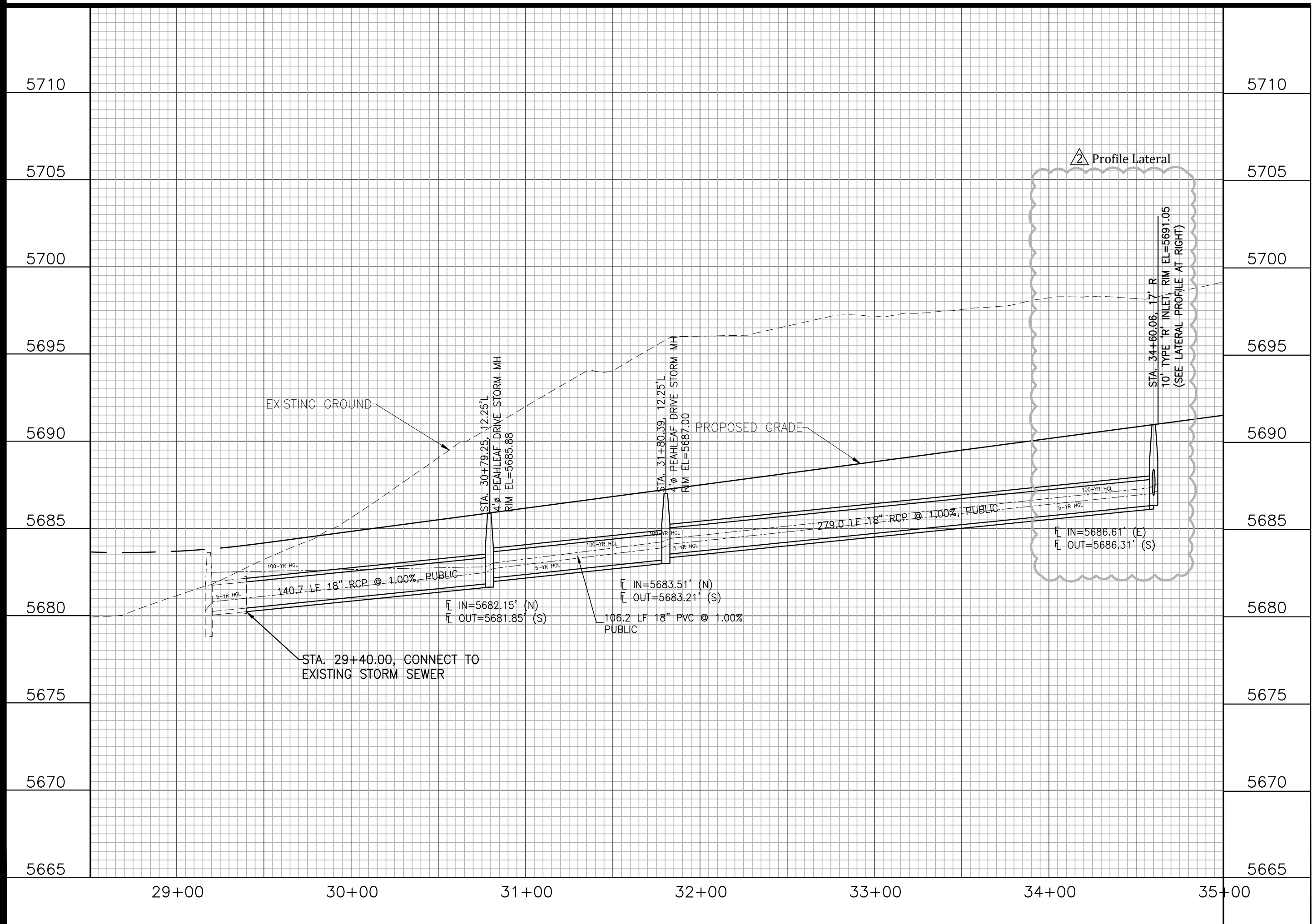
17038-dwr-2-16-PP.dwg/Jul 02, 2019

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group



GLEN AT WIDEFIELD FILING NO. 9
STORM SEWER PLAN (PEACHLEAF DRIVE)
PLAN AND PROFILE
EL PASO COUNTY, COLORADO

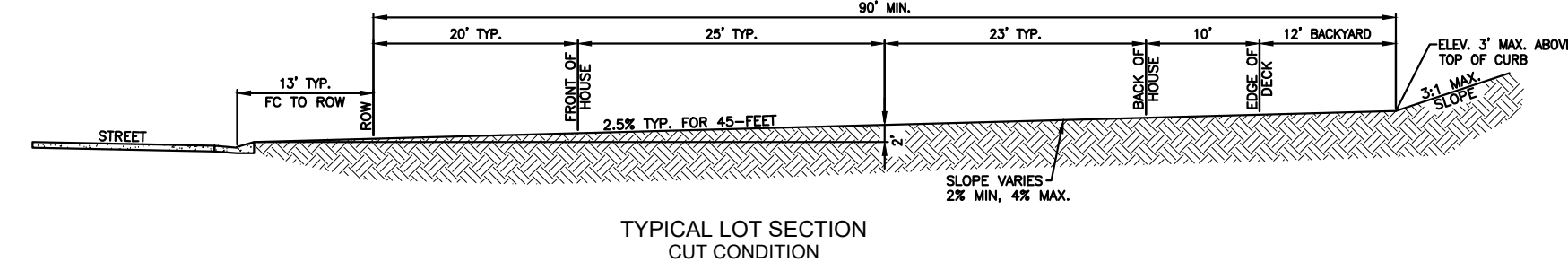
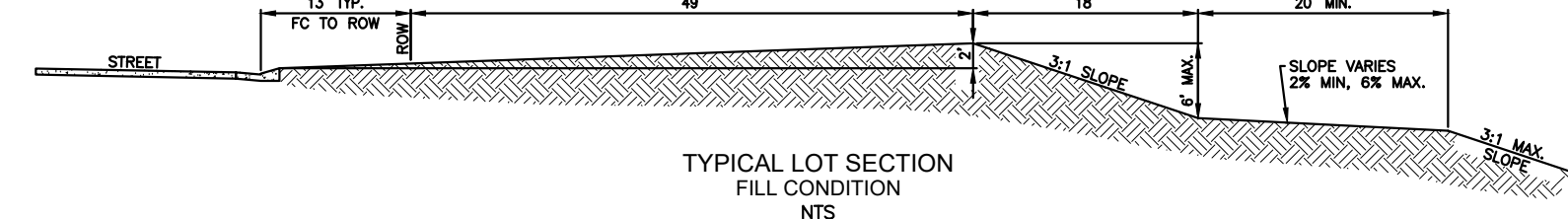
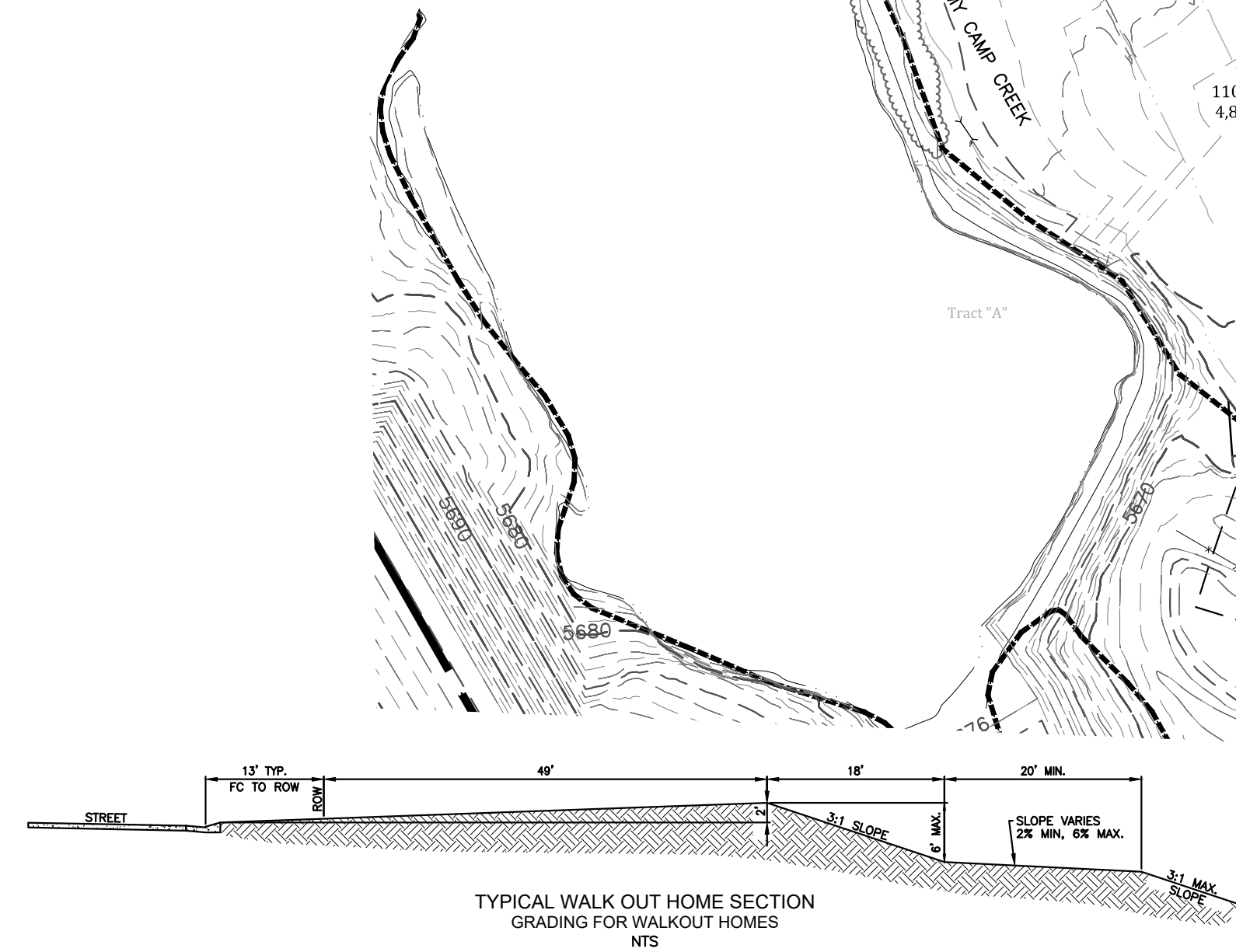
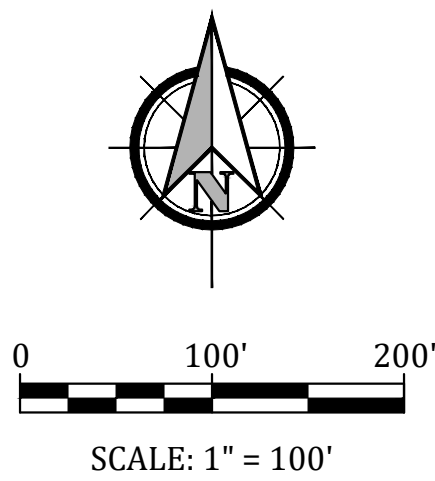


Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK/MJK
Check:	AWMc
Revisions:	

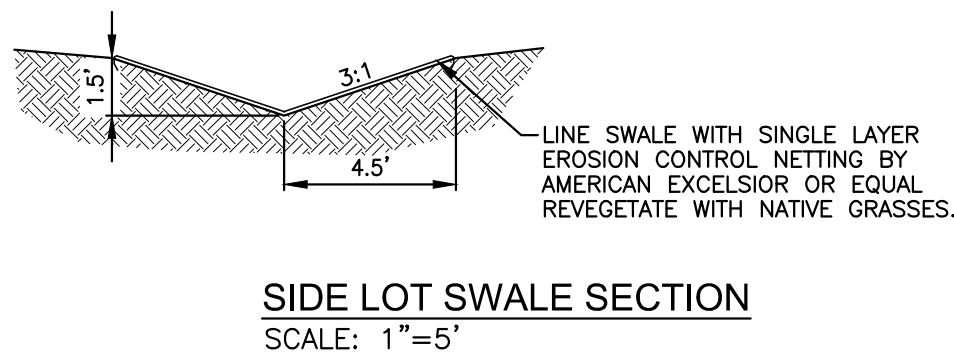
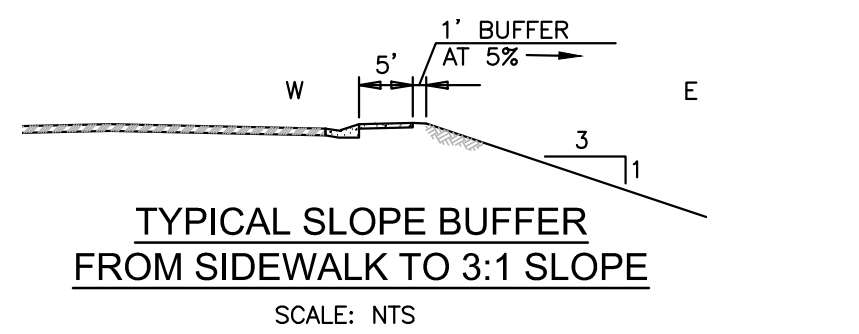
6/04/19 3rd Sub Comments
SHEET

SEED MIX		
AREAS DISTURBED BY THE EARTHWORK ACTIVITIES AND NOT RECEIVING OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX.		
SPECIES	VARIETY	lbs/acre
SIDEWAYS GRAMA	<i>El Reno</i>	3.0
WESTERN WHEAT GRASS	<i>Barton</i>	2.0
SLENDER WHEAT GRASS	<i>Native</i>	2.0
LITTLE BLUESTEM	<i>Pastura</i>	0.5
SAND DROPSSEED	<i>Native</i>	3.0
SWITCH GRASS	<i>Nebraska 28</i>	1.0
WEEPING LOVE GRASS	<i>Morpha</i>	14.0
SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.		

EROSION CONTROL INSPECTION AND MAINTENANCE	
A THOROUGH INSPECTION OF THE EROSION CONTROL PLAN/STORMWATER MANAGEMENT SYSTEM SHALL BE PERFORMED EVERY 14 DAYS AS WELL AS AFTER ANY RAIN OR SNOWMELT EVENT THAT CAUSES SURFACE EROSION.	
* WHEN STRAW BALE BARRIERS HAVE SILTED UP TO HALF THEIR HEIGHT, THE SILT SHALL BE REMOVED. FINAL GRADE REESTABLISHED AND SLOPES RESEDED IF NECESSARY. ANY STRAW BALES THAT HAVE SHIFTED OR DECAYED SHALL BE REPAIRED OR REPLACED. * ANY ACCUMULATED TRASH OR DEBRIS SHALL BE REMOVED FROM OUTLETS. AN INSPECTION AND MAINTENANCE LOG SHALL BE KEPT.	
SHADED AREA DENOTES PERMANENT EROSION BLANKET. CURLEX HEAVY DUTY EROSION CONTROL BLANKET BY AMERICAN EXCELSIOR OR EQUAL SHALL BE USED.	



TYPICAL LOT CROSS SECTIONS



LEGEND	
	SILT FENCE
	VEHICLE TRACKING CONTROL
	INLET PROTECTION
	TEMPORARY SLOPE DRAIN
	EROSION CONTROL NETTING
	ROUGH-CUT STREET CONTROL
	CONCRETE WASHOUT AREA
	TEMPORARY SEDIMENT BASIN
SEE DETAILS SHEET 15	

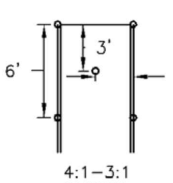
PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES	
1.	All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
2.	Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any unclassified fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
3.	Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
4.	Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
5.	The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
6.	All grading shall be in conformance with the Geotechnical Report for the area.
7.	Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
8.	Grading contours shown on this plan are to final grade.
9.	Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
10.	No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
11.	Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
12.	Contractor is responsible for providing erosion control measures as approved by the El Paso County DSD Engineering Division and as may be required by the El Paso County Inspector.
13.	All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocor 700 or equal.
14.	The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
15.	All soils used for fill must be approved by a representative of the Geotechnical Engineer.
16.	All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
17.	The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
18.	No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompactd after rainfall if necessary, to obtain proper moisture density relation.
19.	Additional erosion control structures and/or grading may be required at the time of construction.
20.	Sediment removal for erosion control facilities shall be performed continuously for proper function.
21.	Base mapping was provided by Pinnacle Land Surveying. The date of the last survey update was January 2014.
22.	Proposed Construction Schedule: Begin Construction: Autumn 2015 End Construction: Autumn 2018 Total Site Area = 292.29 Acres
23.	Area to be disturbed = 172.8 Acres (est.). Existing 100-year runoff coefficient = 0.50 Proposed 100-year runoff coefficient = 0.51 Existing Hydrologic Soil Groups: B & C (B-Nelson-Tassal fine sandy loams; B-Stoneham sandy loam; C-Nunn clay loam)
24.	Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-18%).
25.	Site is located in the West Fork Jimmy Camp Creek Drainage Basin.

OPINION OF COST FOR EROSION CONTROL REQUIREMENTS Additional Erosion Control for Glen at Widefield Filing No. 9				
ITEM	QUANTITY	UNITS	PRICE	AMOUNT
PERMANENT SEEDING	0.1	AC	\$582	\$58.20
PERMANENT E.C. BLANKET	7,655	SY	\$6	\$45,930.00
VEHICLE TRACKING CONTROL	3	EA	\$1,625	\$4,875.00
INLET PROTECTION	11	EA	\$153	\$1,683.00
CONCRETE WASHOUT BASIN	2	EA	\$776	\$1,552.00
ROUGH CUT STREET CONTROL	670	LF	\$2	\$1,340.00
SILT FENCING	2,450	LF	\$2.50	\$6,125.00
			TOTAL	\$61,563.20

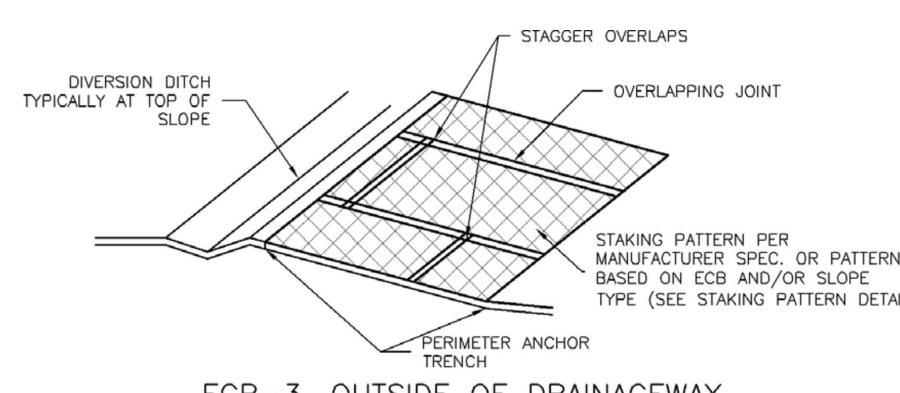
GLEN AT WIDEFIELD FILING NO. 9 GRADING AND EROSION CONTROL PLAN GRADING AND EROSION CONTROL EL PASO COUNTY, COLORADO

Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK
Check:	AWMc
Revisions:	
	4/16/19 Grading
	6/04/19 3rd Sub Comments
SHEET	

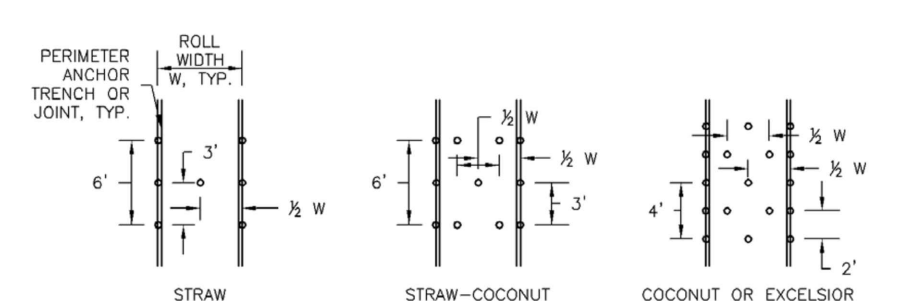
TABLE ECB-1. ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCERLOS CONTENT	RECOMMENDED NETTING**
STRAW*	-	100%	-	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCERLOS	-	-	100%	DOUBLE/NATURAL



STAKING PATTERNS BY SLOPE



ECB-3. OUTSIDE OF DRAINAGEWAY



STAKING PATTERNS BY ECB TYPE

EROSION CONTROL BLANKET INSTALLATION NOTES

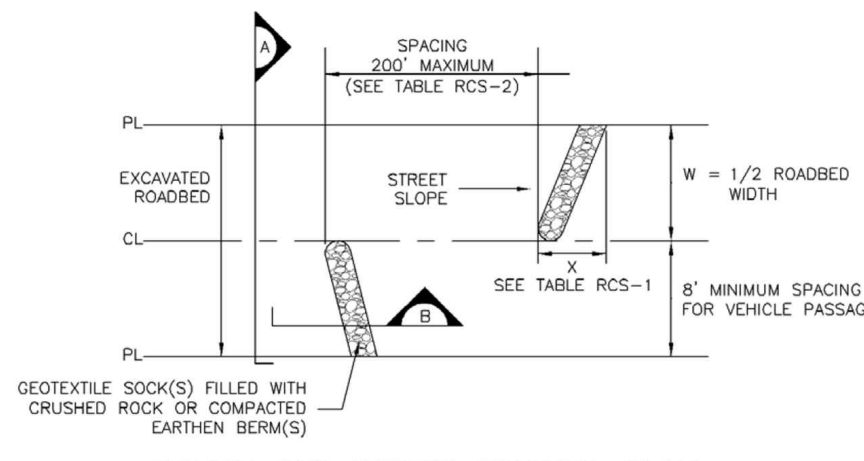
- SEE PLAN VIEW FOR:
-LOCATION OF ECB
-TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCERLOS)
-AREA A, IN SQUARE YARDS OF EACH TYPE OF ECB
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECP, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCERLOS ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.

EROSION CONTROL BLANKET MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
- ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DIVOT OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

ROUGH CUT STREET CONTROL INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF ROUGH CUT STREET CONTROL MEASURES.
- ROUGH CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT IN, AND WILL NOT BE PAID FOR MORE THAN 14 DAYS OF FOR TEMPORARY CONSTRUCTION ROADS THAT HAVE NOT RECEIVED ROAD BASE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.



ROUGH CUT STREET CONTROL PLAN

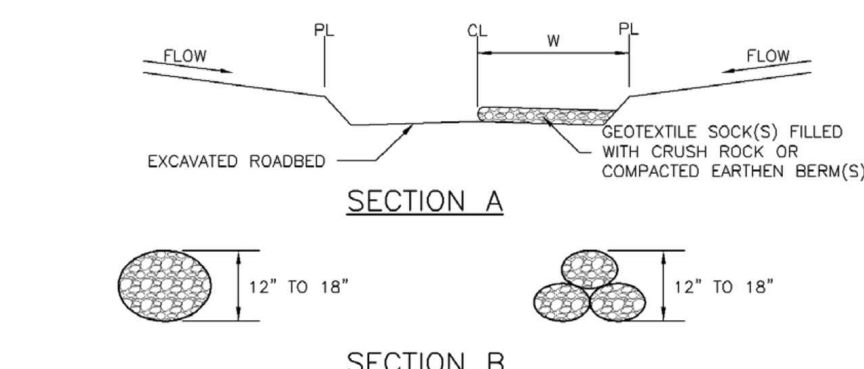
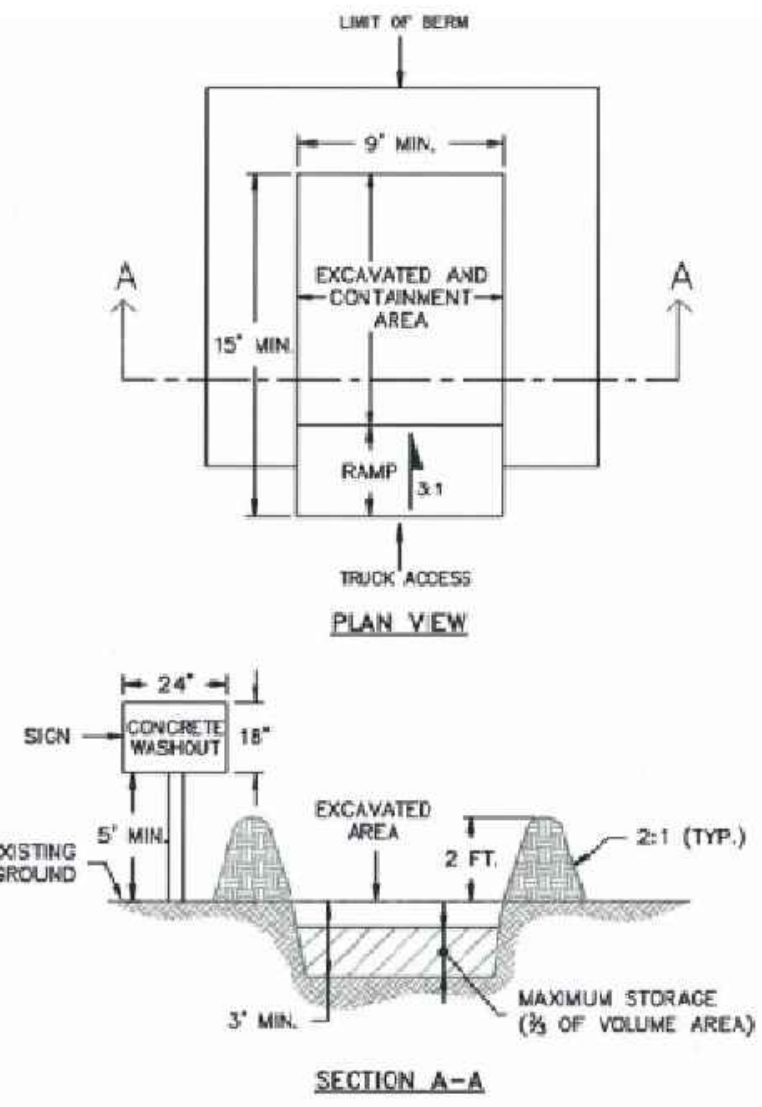


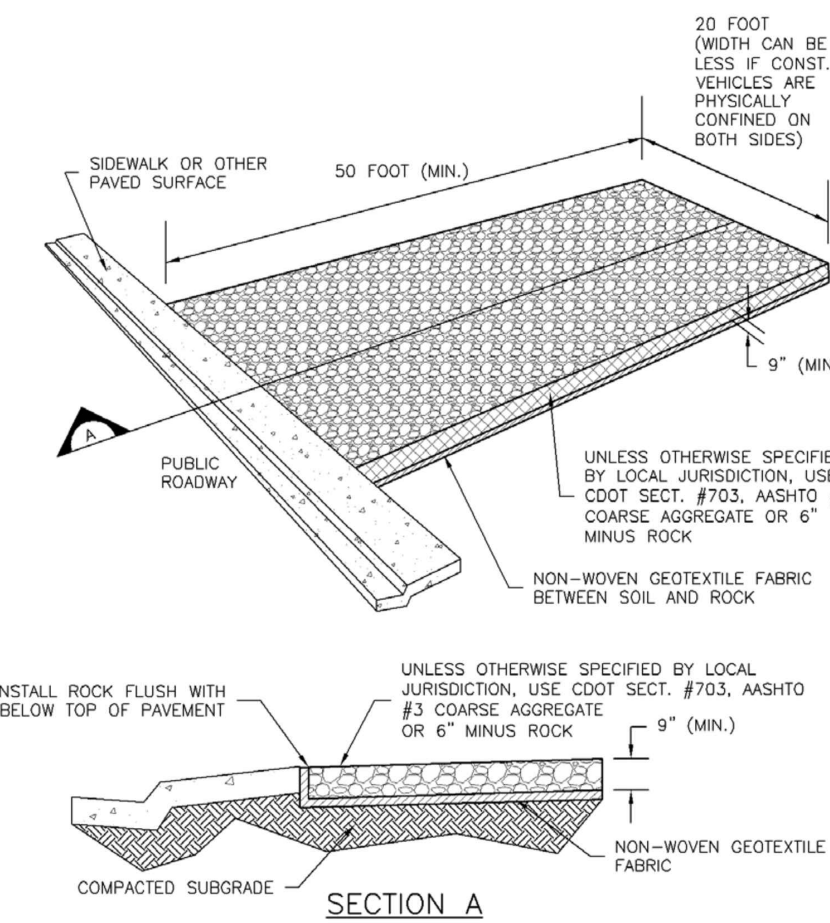
TABLE RCS-1		TABLE RCS-2	
W (FT)	X (FT)	LONGITUDINAL STREET SLOPE (%)	SPACING (FT)
20-30	5	<2	NOT TYPICALLY NEEDED
31-40	7	2	200
41-50	9	3	200
51-60	10.5	4	150
61-70	12	5	100
		6	50
		7	25
		8	25

CONCRETE WASHOUT AREA
EPC STD SD 3-84

NTS



VEHICLE TRACKING CONTROL
NTS



STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S)
-TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM)
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, ASHTO #3 COARSE AGGREGATE, OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

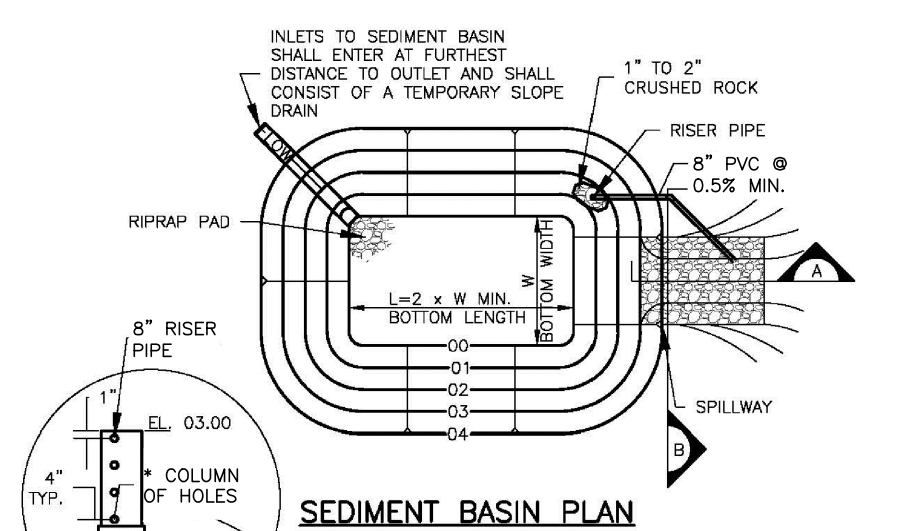
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

EROSION CONTROL BLANKET
NTS

ROUGH-CUT STREET CONTROL
NTS

TEMPORARY SEDIMENT BASIN "A"

- 0.38 ac-ft REQUIRED TO SPILLWAY CREST.
- 8" PVC PERFORATED RISER PIPE, PERFORATIONS VERTICALLY SPACED 4" APART, 1 COLUMN OF 5 7/8" Ø HOLES.
- 8" LONG SPILLWAY, 1" DEPTH, LINED WITH 24" THICK TYPE "W" RIPRAP TO TOE OF SLOPE.

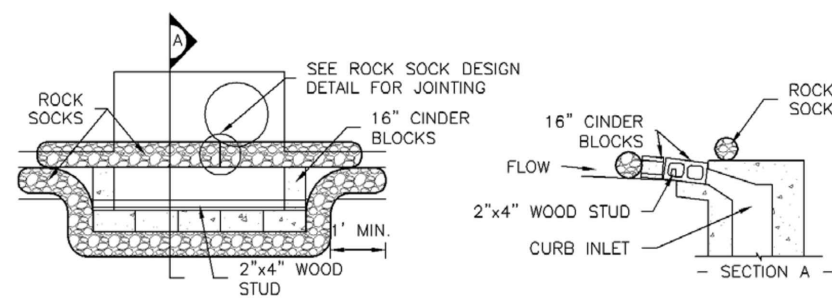


SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF SEDIMENT BASIN
-TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN)
-FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, H5
-FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER D, AND PIPE DIAMETER D.
- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS A STORMWATER CONTROL.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

ROUGH CUT STREET CONTROL INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF ROUGH CUT STREET CONTROL MEASURES.
- ROUGH CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT IN, AND WILL NOT BE PAID FOR MORE THAN 14 DAYS OF FOR TEMPORARY CONSTRUCTION ROADS THAT HAVE NOT RECEIVED ROAD BASE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

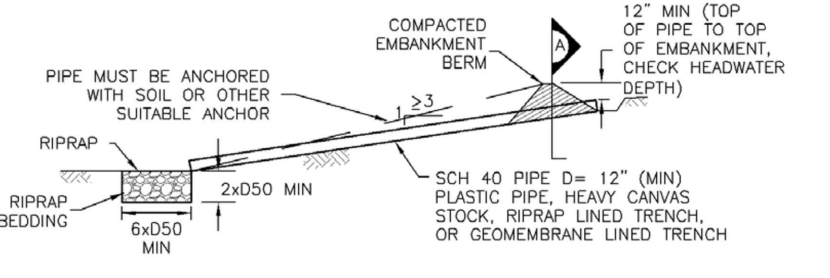


IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

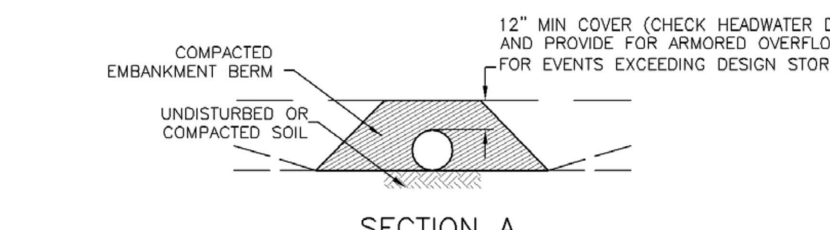
BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- CONCRETE "CINDER" BLOCKS SHALL BE LAD ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
- GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.

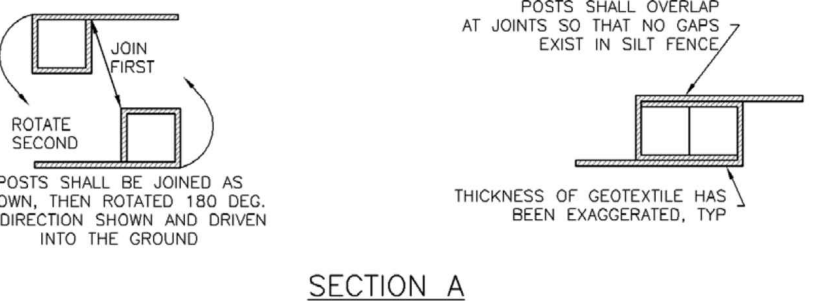
TERMINATION OF RIPRAP LINED SLOPE DRAIN



TEMPORARY SLOPE DRAIN PROFILE



SILT FENCE



SILT FENCE DETAIL
NTS

TEMPORARY SEDIMENT BASIN
NTS

INLET PROTECTION (IP-1)
NTS

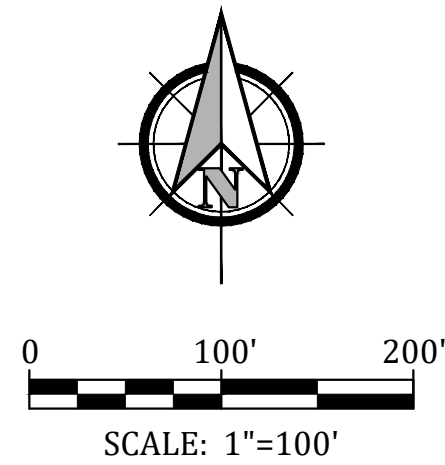
TEMPORARY SLOPE DRAIN (TSD)
NTS

SILT FENCE DETAIL
NTS



Know what's below.
Call before you dig.

FOR STORM SEWER DESIGN
SEE SHEETS 10-11



SUBSEQUENT TO STRIPPING AND GRUBBING THE FOLLOWING OVERLOT/PIPE INSTALLATION PROCEDURES ARE ANTICIPATED FOR THE SANITARY SEWER LOCATED ON PROPOSED EMBANKMENTS:

- THE REMOVAL AND REPLACEMENT OF METASTABLE SOIL.
- TESTING OF THE FILL SUBSEQUENT TO THE PENETRATION OF THE METASTABLE SOIL WILL CONTINUE UNTIL A MINIMUM OF 7 FEET OF STRUCTURAL FILL HAS BEEN PLACED ABOVE THE PROPOSED SEWER LINE ELEVATION.
- UTILITY TRENCHES SHALL BE EXCAVATED AND SANITARY SEWER LINE INSTALLED. THE PIPE SHALL BE PROPERLY BEDDED AND STRUCTURAL FILL PLACED AND TESTED TO THE PREVIOUS GRADE.
- THE OVERLOT AND EMBANKMENT FILL CAN BE COMPLETED.
- WHERE THE SANITARY SEWER IS PLACED IN EMBANKMENT FILL DURING THE OVERLOT PROCESS, STE SHALL MONITOR AND TEST ALL WORK ASSOCIATED WITH THE AFFECTED PORTIONS.

ADDITIONAL UTILITY NOTES

GAS - ALL GAS MAINS AND SERVICES ARE TO BE INSTALLED PER THE CITY OF COLORADO SPRINGS.

ELECTRIC - ALL ELECTRIC SERVICES ARE TO BE INSTALLED PER THE CITY OF FOUNTAIN ELECTRIC DIVISION.

UTILITY CONTACTS

SEWER:	WIDEFIELD W&S DISTRICT (WWSD)	390-7111
WATER:	WIDEFIELD W&S DISTRICT (WWSD)	390-7111
ELECTRIC:	MOUNTAIN VIEW ELECTRIC	485-2255
GAS:	PEOPLES NATURAL GAS	800-225-0752
PHONE:	US WEST	636-4632

LEGEND

PROPOSED 8" PVC WATER MAIN (DR 18) WITH MJ FITTINGS (UNLESS OTHERWISE NOTED)

WIDEFIELD WATER & SANITATION DISTRICT STANDARD FIRE HYDRANT ASSEMBLY. INSTALL PER WIDEFIELD WATER AND SANITATION DISTRICT CONSTRUCTION SPECIFICATIONS

8" GATE VALVE (UNLESS OTHERWISE NOTED)

TEE w/ CONCRETE THRUST BLOCK

WATER AND SEWER MAIN EXTENSIONS

Any changes or alterations affecting the grade, alignment, elevation and/or depth of cover of any water or sewer mains or other appurtenance shown on this drawing shall be the responsibility of the Owner/Developer. The Owner/Developer shall be responsible for all operational damages and defects in installation and material for mains and services from the date of approval until final acceptance is issued.

Signed _____ Date _____

Print Name J. Ryan Watson, President

DBA: GLEN DEVELOPMENT COMPANY

Address: 3 Widefield Boulevard
Colorado Springs, CO 80911
(719) 392-0194

FIRE AUTHORITY APPROVAL

The number of fire hydrants and hydrant locations shown on this water installation plan are correct and adequate to satisfy the fire protection requirements as specified by the Security Fire District.

Security Fire Department

Signed _____ Date _____
Security Fire Department

UTILITY APPROVALS

DISTRICT APPROVALS

The Widefield Water and Sanitation District recognizes the design engineer as having responsibility for the design. The Widefield Water and Sanitation District has limited its scope of review accordingly.

WIDEFIELD WATER AND SANITATION DISTRICT
WASTEWATER DESIGN APPROVAL

Date: _____ By: _____

PROJECT NO. _____

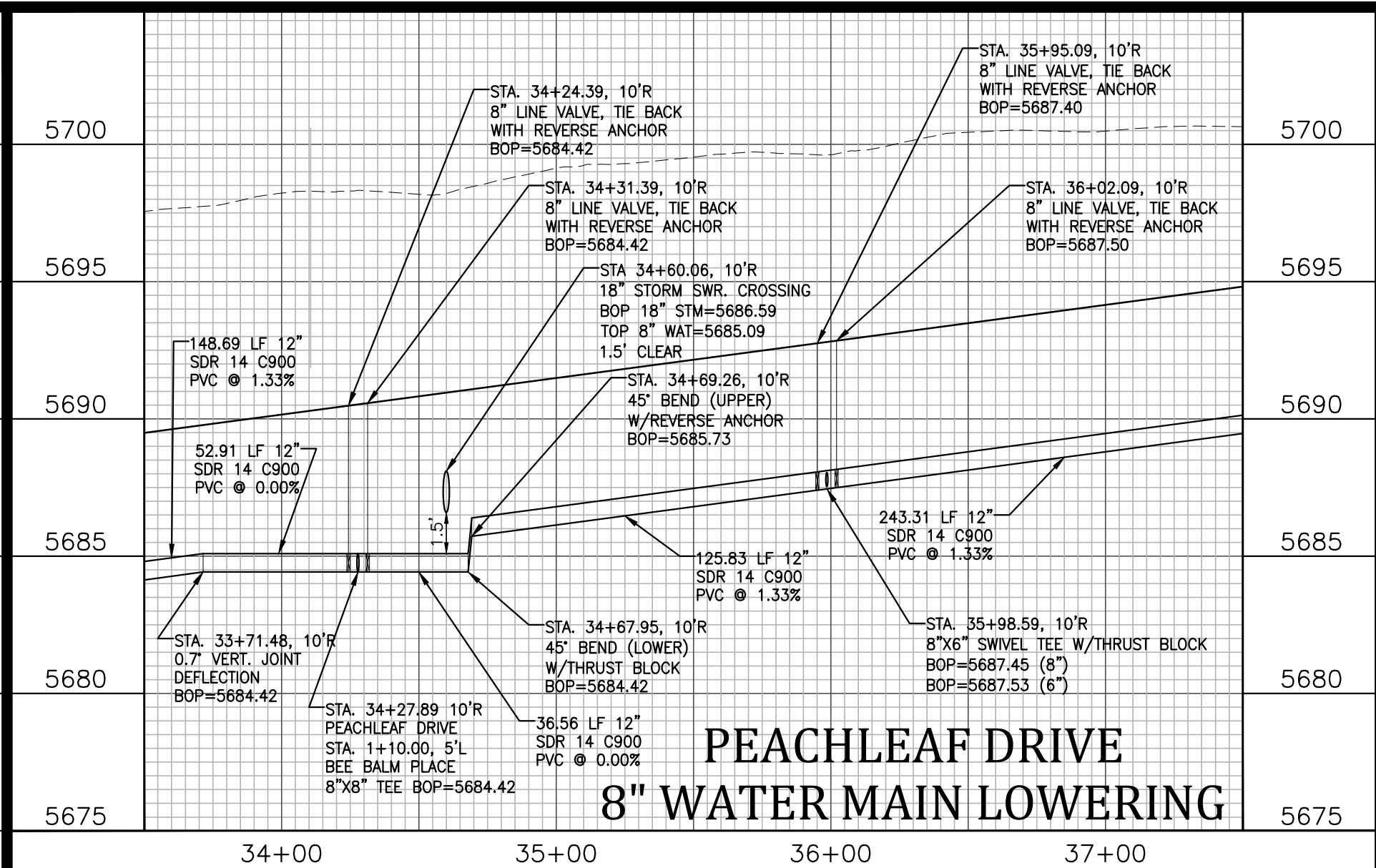
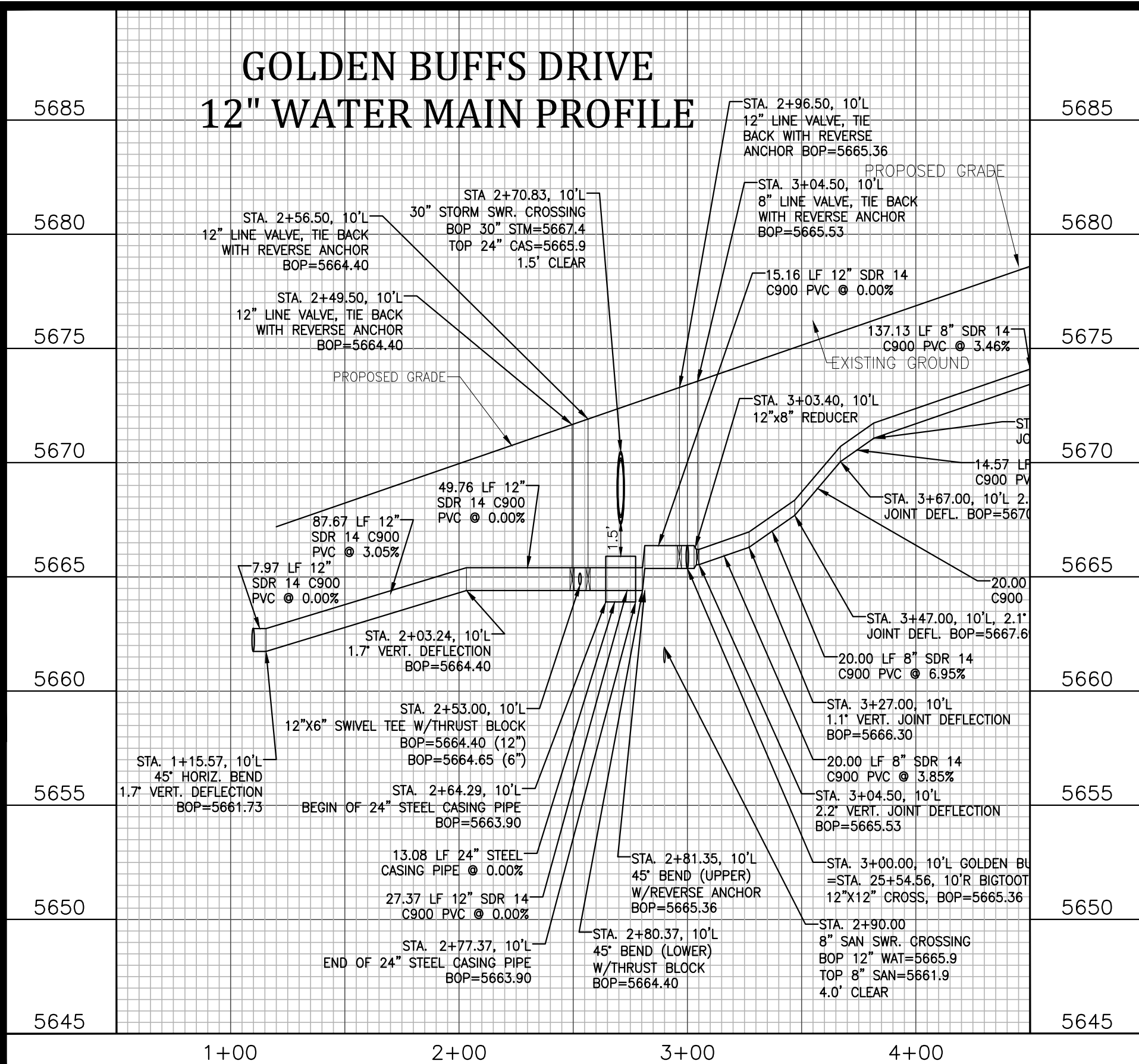
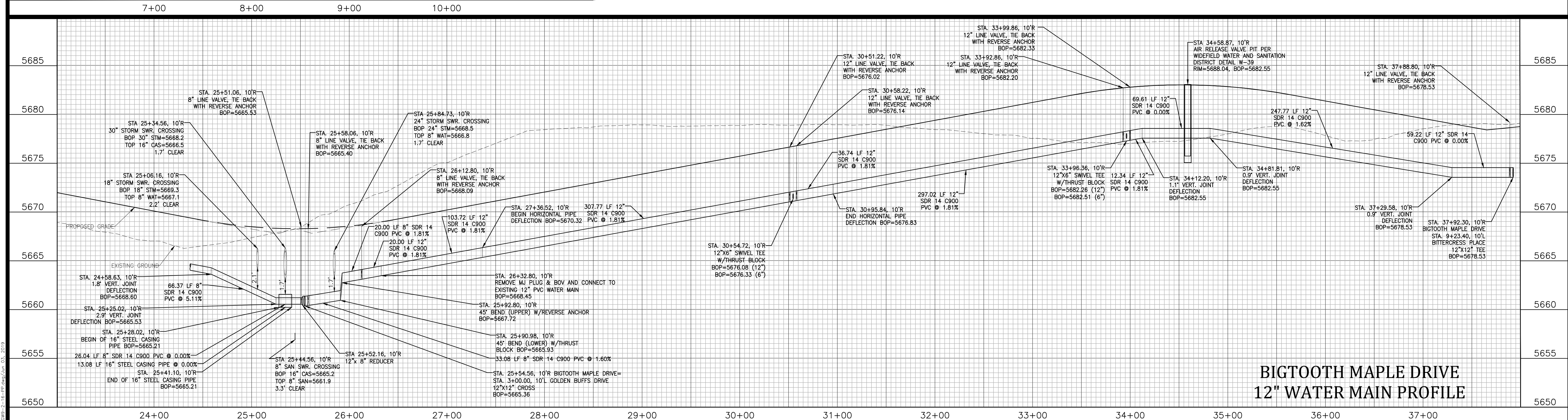
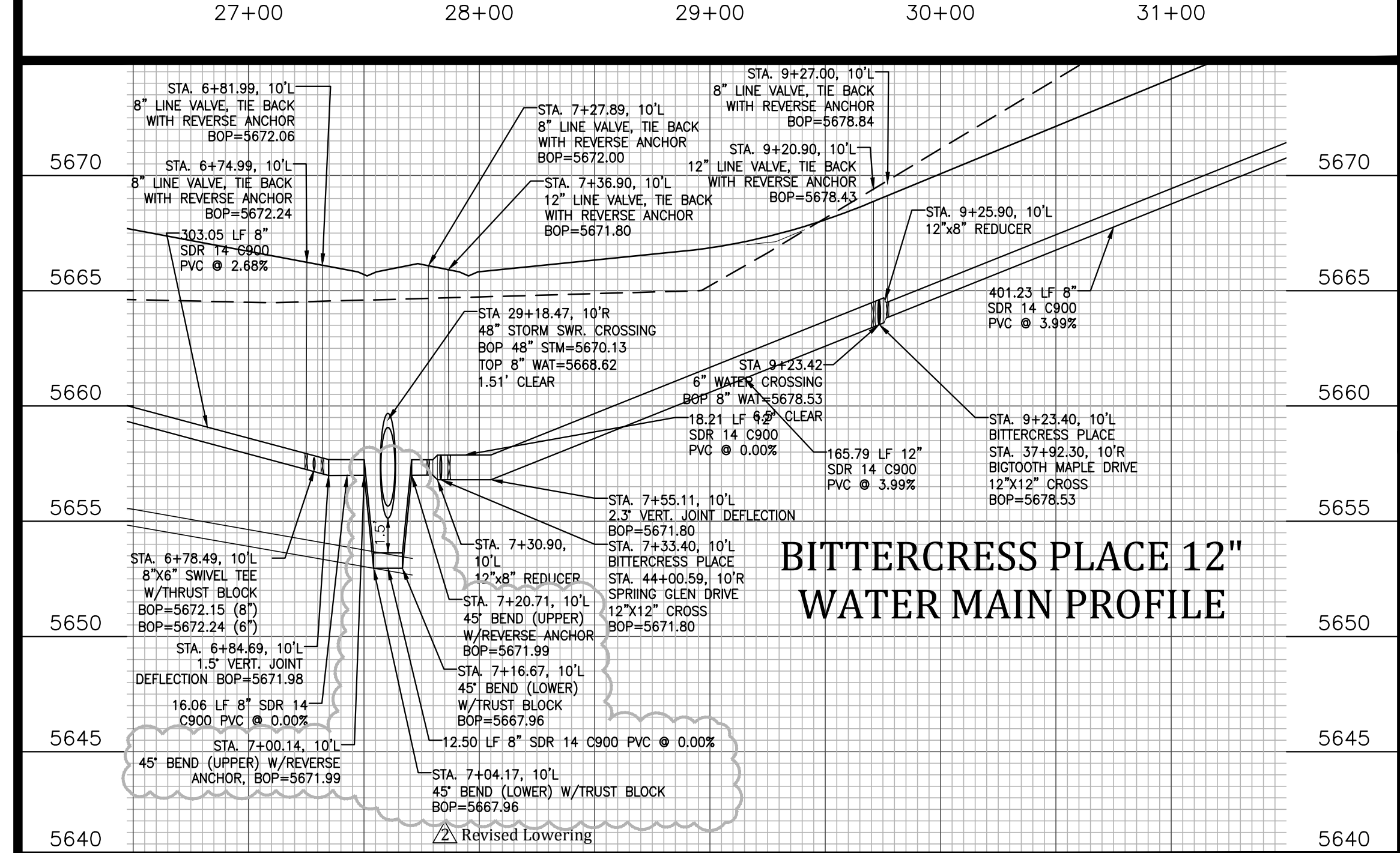
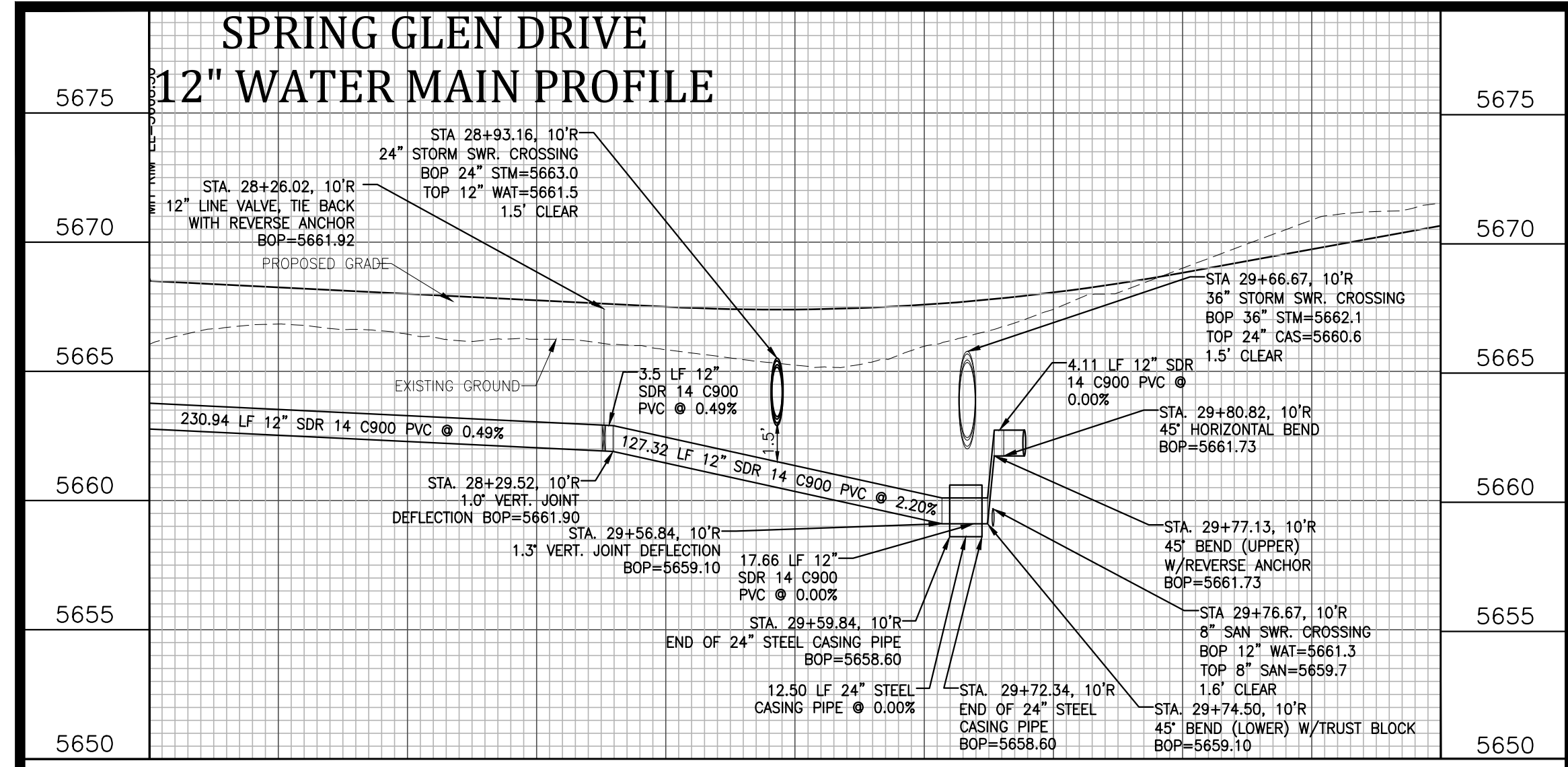
In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.

WIDEFIELD WATER AND SANITATION DISTRICT
WATER DESIGN APPROVAL

Date: _____ By: _____

PROJECT NO. _____

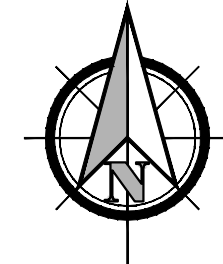
In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.



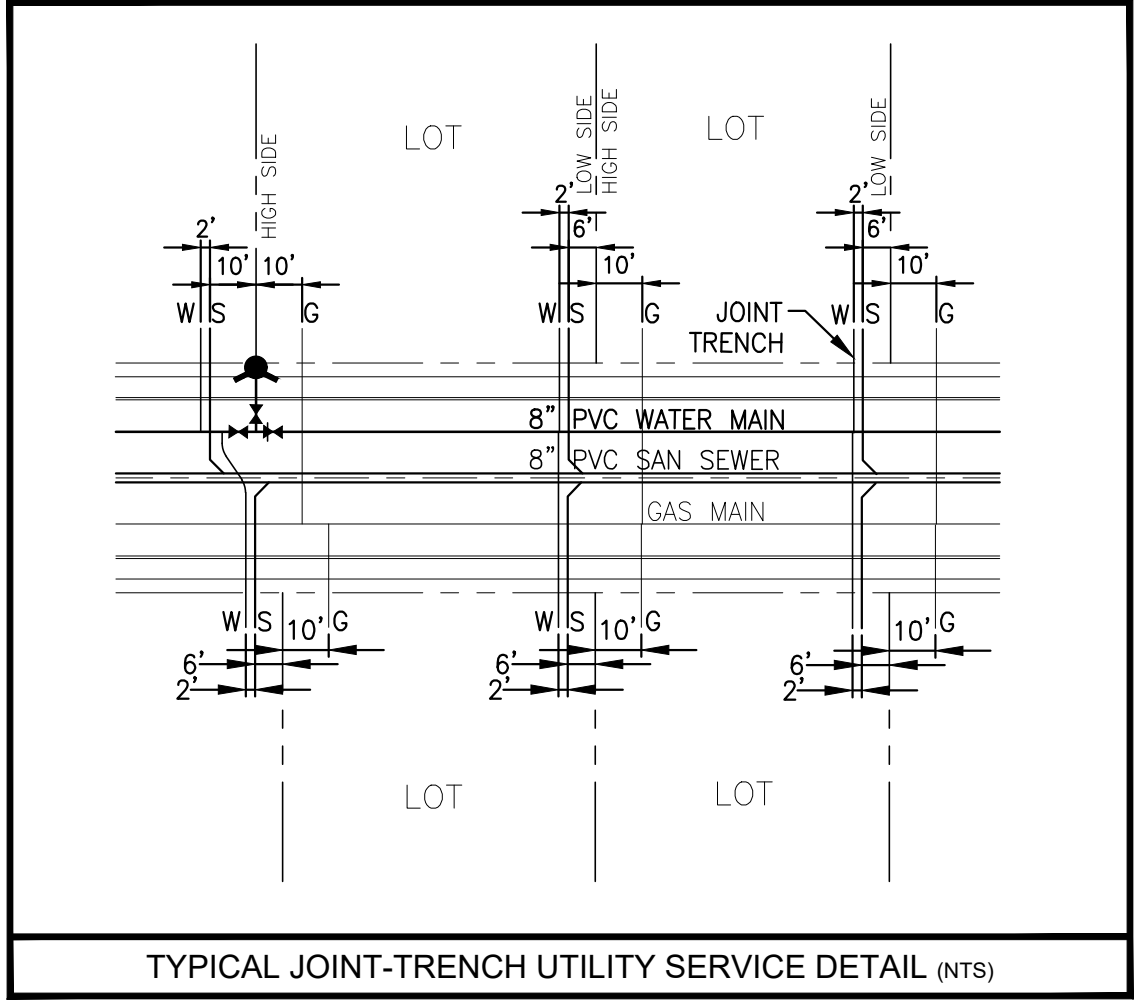
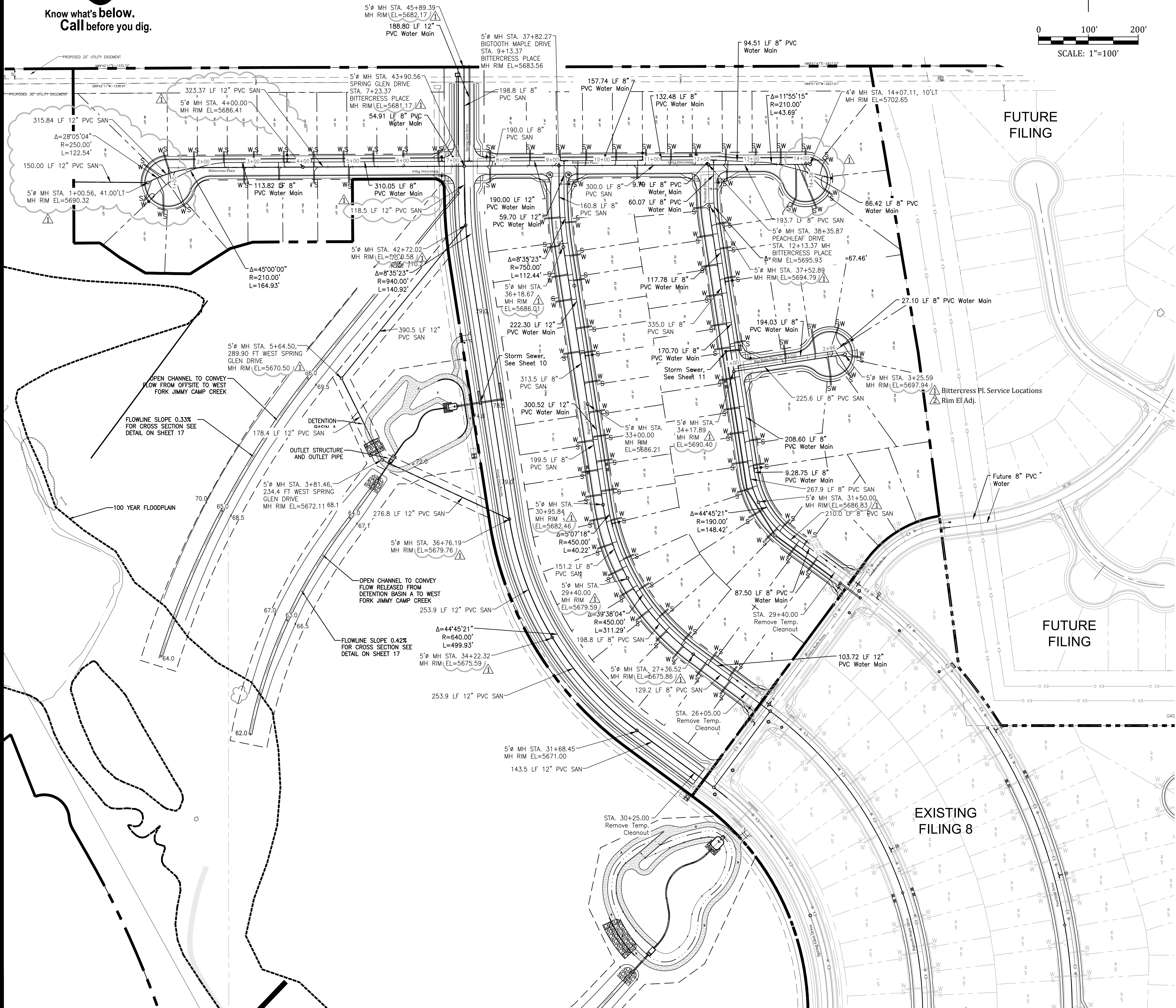


Know what's below.
Call before you dig.

FOR STORM SEWER DESIGN
SEE SHEETS 10-11



0 100' 200'
SCALE: 1"=100'



ADDITIONAL UTILITY NOTES		
GAS - ALL GAS MAINS AND SERVICES ARE TO BE INSTALLED PER THE CITY OF COLORADO SPRINGS		
ELECTRIC - ALL ELECTRIC SERVICES ARE TO BE INSTALLED PER MOUNTAINVIEW ELECTRIC ASSOCIATION.		
UTILITY CONTACTS		
SEWER:	WIDEFIELD W&S DISTRICT (WUSD)	390-7111
WATER:	WIDEFIELD W&S DISTRICT (WUSD)	390-7111
ELECTRIC:	MOUNTAIN VIEW ELECTRIC	495-2283
GAS:	BLACKHILLS ENERGY	800-363-0752
PHONE:	US WEST	636-4632

LEGEND	
	PROPOSED 8" PVC WATER MAIN (DR 18) WITH MJ FITTINGS (UNLESS OTHERWISE NOTED)
	WIDEFIELD WATER & SANITATION DISTRICT STANDARD FIRE HYDRANT ASSEMBLY. INSTALL PER WIDEFIELD WATER AND SANITATION DISTRICT CONSTRUCTION SPECIFICATIONS
	GATE VALVE (UNLESS OTHERWISE NOTED)
	TEE w/CONCRETE THRUST BLOCK
MINIMUM RADIUS SHOWN FOR WATER MAIN = 290' PER WUSD SPECIFICATIONS AND EL PASO COUNTY ECM 4.3.6.A.1&2. THE MINIMUM COVER OVER WATER MAIN & SERVICES AND SANITARY SEWER MAINS & SERVICES IS 5 FEET.	

SUBSEQUENT TO STRIPPING AND GRUBBING THE FOLLOWING OVERLOT/PIPE INSTALLATION PROCEDURES ARE ANTICIPATED FOR THE SANITARY SEWER LOCATED ON PROPOSED EMBANKMENTS:

- THE REMOVAL AND REPLACEMENT OF METASTABLE SOIL.
- TESTING OF THE FILL SUBSEQUENT TO THE PENETRATION OF THE METASTABLE SOIL WILL CONTINUE UNTIL A MINIMUM OF 7 FEET OF STRUCTURAL FILL HAS BEEN PLACED ABOVE THE PROPOSED SEWER LINE ELEVATION.
- UTILITY TRENCHES SHALL BE EXCAVATED AND SANITARY SEWER LINE INSTALLED. THE PIPE SHALL BE PROPERLY BEDDED AND STRUCTURAL FILL PLACED AND TESTED TO THE PREVIOUS GRADE.
- THE OVERLOT AND EMBANKMENT FILL CAN BE COMPLETED.
- WHERE THE SANITARY SEWER IS PLACED IN EMBANKMENT FILL DURING THE OVERLOT PROCESS, SITE SHALL MONITOR AND TEST ALL WORK ASSOCIATED WITH THE AFFECTED PORTIONS.

UTILITY APPROVALS	
DISTRICT APPROVALS The Widefield Water and Sanitation District recognizes the design engineer as having responsibility for the design. The Widefield Water and Sanitation District has limited its scope of review accordingly.	
WIDEFIELD WATER AND SANITATION DISTRICT WASTEWATER DESIGN APPROVAL	
Date: _____	By: _____
PROJECT NO. _____	
In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.	
WIDEFIELD WATER AND SANITATION DISTRICT WATER DESIGN APPROVAL	
Date: _____	By: _____
PROJECT NO. _____	
In case of errors or omissions with the sewer design as shown on this document the standards as defined in the "Rules and Regulations for Installation of Sewer Mains and Services" shall rule. Approval expires 180 days from Design Approval.	

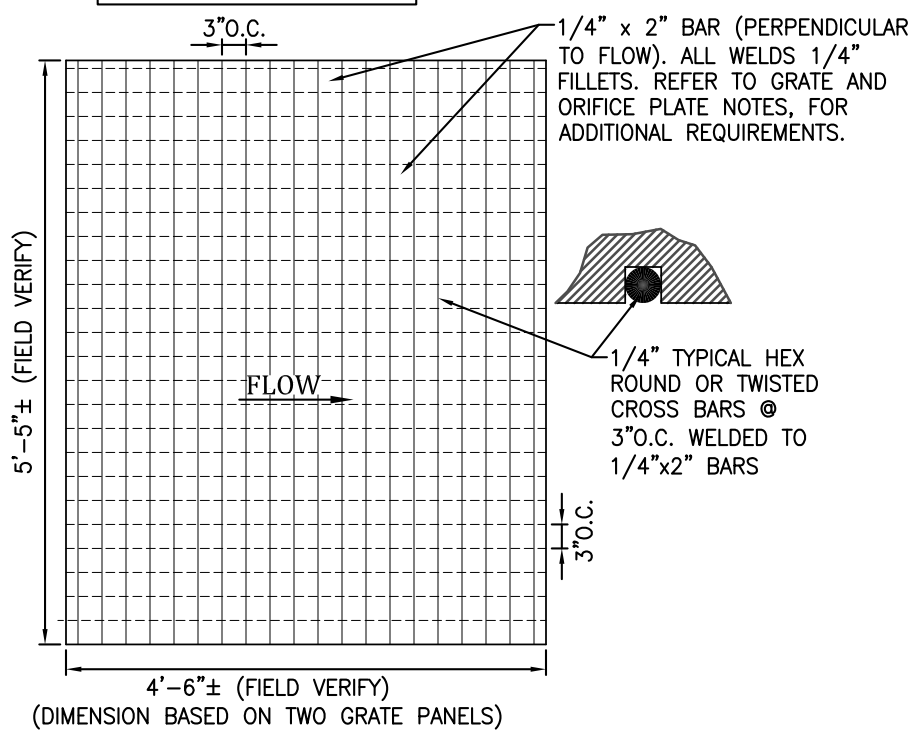
GLEN AT WIDEFIELD FILING NO. 9
UTILITY SERVICES PLAN
UTILITY SERVICES
EL PASO COUNTY, COLORADO

Project No.:	17038
Date:	September 25, 2018
Design:	AWMc
Drawn:	JAK
Check:	AWMc
Revisions:	
1	4/16/19 Water/San. Adj.
2	6/04/19 3rd Sub Comments

SHEET

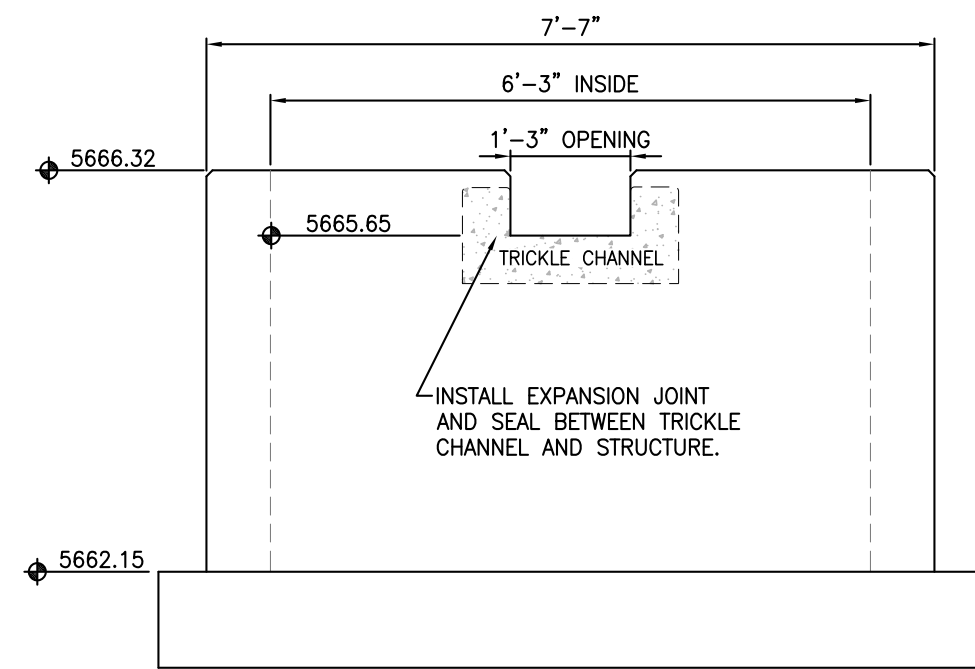
- STRUCTURE NOTES:**
1. PRIOR TO CONSTRUCTION, CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
 2. GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPlice LENGTH FOR REINFORCING BARS. ALL REINFORCING STEEL SHALL HAVE 2-INCH MINIMUM CLEARANCE FROM EDGE OF CONCRETE AND 3-INCH MIN CLEARANCE TO EDGE OF CONCRETE PLACED AGAINST SOIL, UNLESS OTHERWISE NOTED.
 3. CONCRETE FOR THE OUTLET STRUCTURE AND FOREBAYS SHALL BE CDOT CLASS D CONCRETE.
 4. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK, SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE AND THE JOINT SHALL BE SEALED, REFER TO DETAILS.
 5. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4-INCH CHAMFER UNLESS OTHERWISE NOTED.
 6. BACKFILLING AGAINST WALLS SHALL NOT COMMENCE UNTIL CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH.
 7. SUBGRADE TO BE 12" THK CLEAN FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM M698 UNDER STRUCTURES.
 8. OUTLET STRUCTURE STEPS SHALL CONFORM TO AASHTO M199.
 9. FOREBAY: CONSTRUCTION JOINTS SHALL BE INSTALLED AT 10' O.C. MAXIMUM. THE JOINTS SHALL BE SEALED WITH A JOINT SEALANT.

DIMENSIONS BASED ON TWO GRATE PANELS TO MINIMIZE SIZE AND WEIGHT OF INDIVIDUAL GRATE.



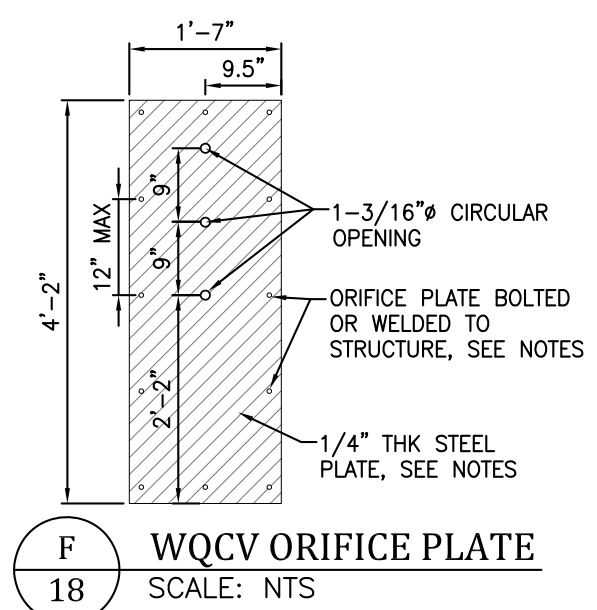
E MAJOR STORM GRATE DETAIL
SCALE: NTS

- GRATE AND ORIFICE PLATE NOTES:**
1. GRATES AND ORIFICE PLATES SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE. GRATES TO BE BOLTED DOWN TO OUTLET STRUCTURE 18" O.C.
 2. GRATES AND ORIFICE PLATES SHALL BE STAINLESS STEEL, ALUMINUM OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND HOT POWDER PAINTED AFTER GALVANIZED.
 3. FIELD VERIFY GRATE DIMENSION PRIOR TO FABRICATION.



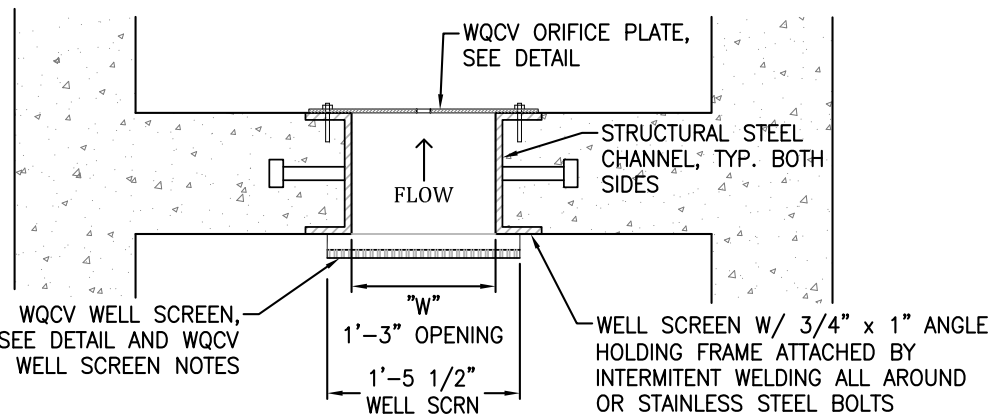
B SECTION B-B
SCALE: NTS

PROVIDE CONTINUOUS NEOPRENE GASKET BETWEEN ORIFICE PLATE AND OUTLET STRUCTURE

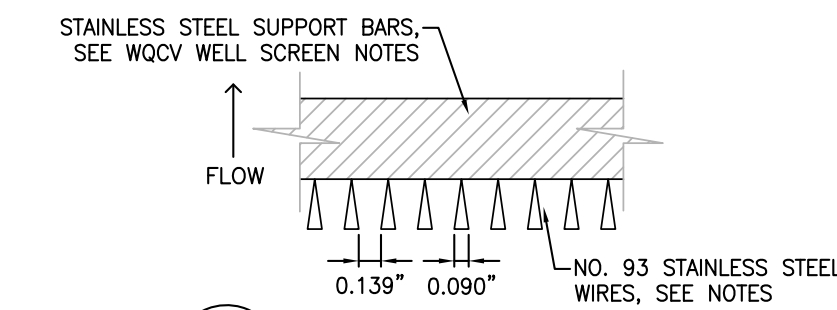


F WQCV ORIFICE PLATE
SCALE: NTS

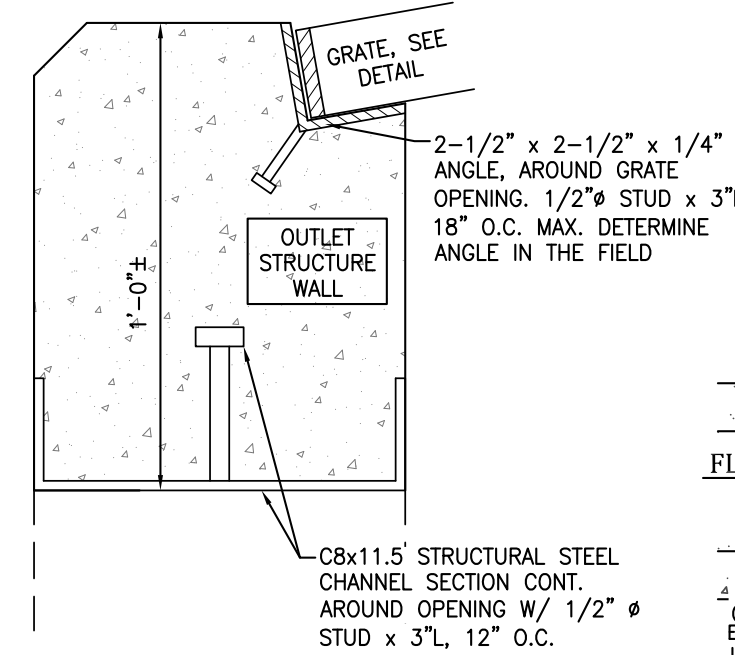
- WQCV WELL-SCREEN NOTES:**
1. WELL-SCREEN SHALL BE STAINLESS STEEL AND ATTACHED BY INTERMITTANT WELDS OR STAINLESS STEEL BOLTS ALONG EDGE OF THE MOUNTING FRAME.
 2. WQCV WELL-SCREEN
 - TYPE OF SCREEN: STAINLESS STEEL #93 VEE WIRE (JOHNSON VEE WIRE TM STAINLESS STEEL SCREEN OR EQUIVALENT WITH 60% OPEN AREA)
 - SCREEN SLOT OPENING DIMENSION: 0.139" (SCREEN #93 VEE WIRE SLOT OPENING)
 - TYPE AND SIZE OF SUPPORT ROD: TE 0.074"x0.50"
 - SPACING OF SUPPORT ROD (O.C.): 1.0 INCH
 - TOTAL SCREEN THICKNESS: 0.655"
 - CARBON STEEL HOLDING FRAME TYPE: 3/4" x 1.0" ANGLE



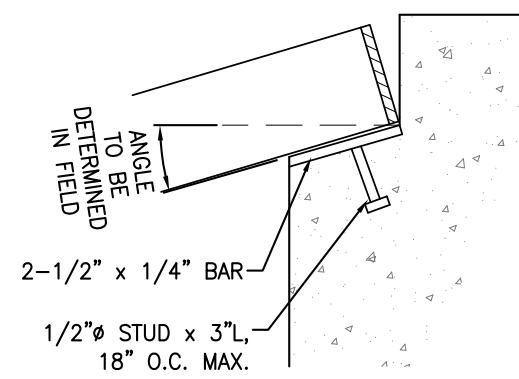
J WQCV ORIFICE PLATE AND WELL SCREEN
SCALE: NTS



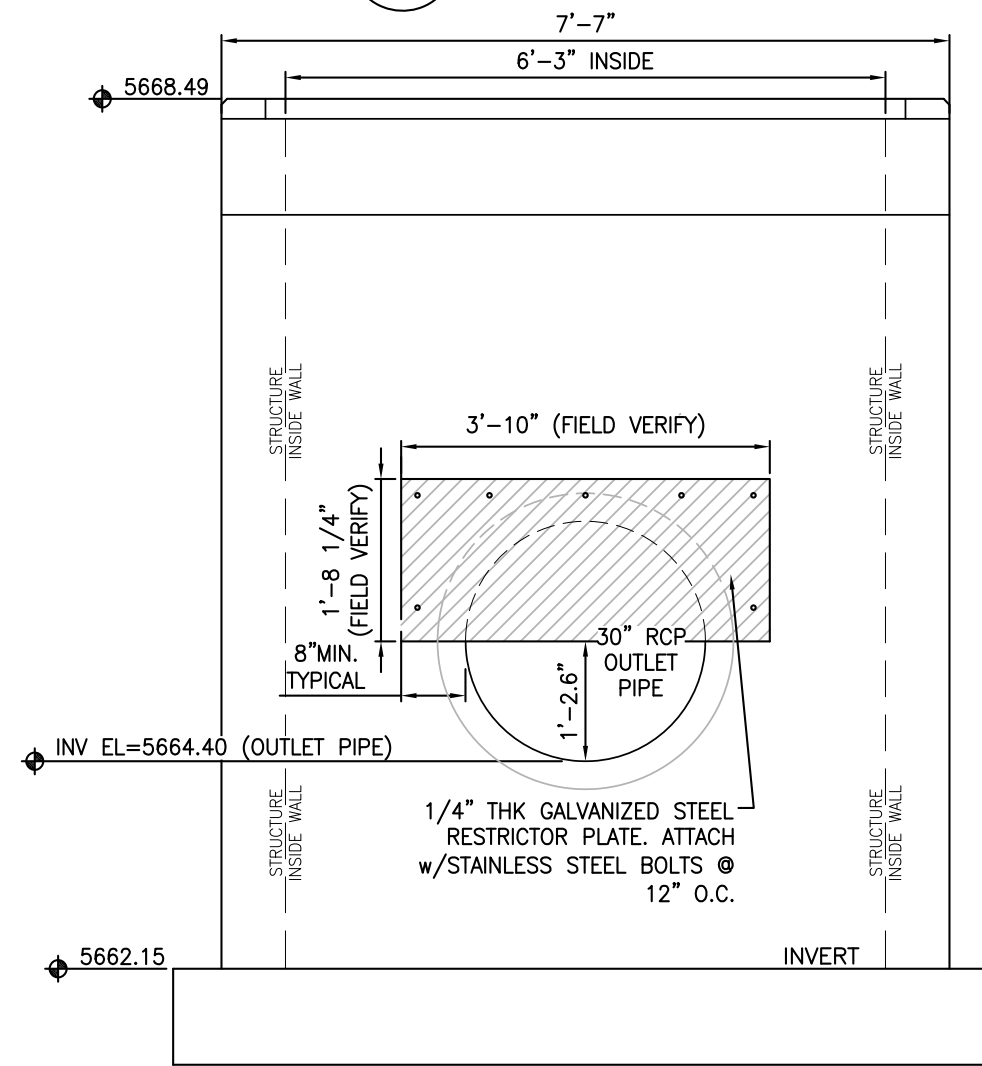
K WQCV WELL SCREEN
SCALE: NTS



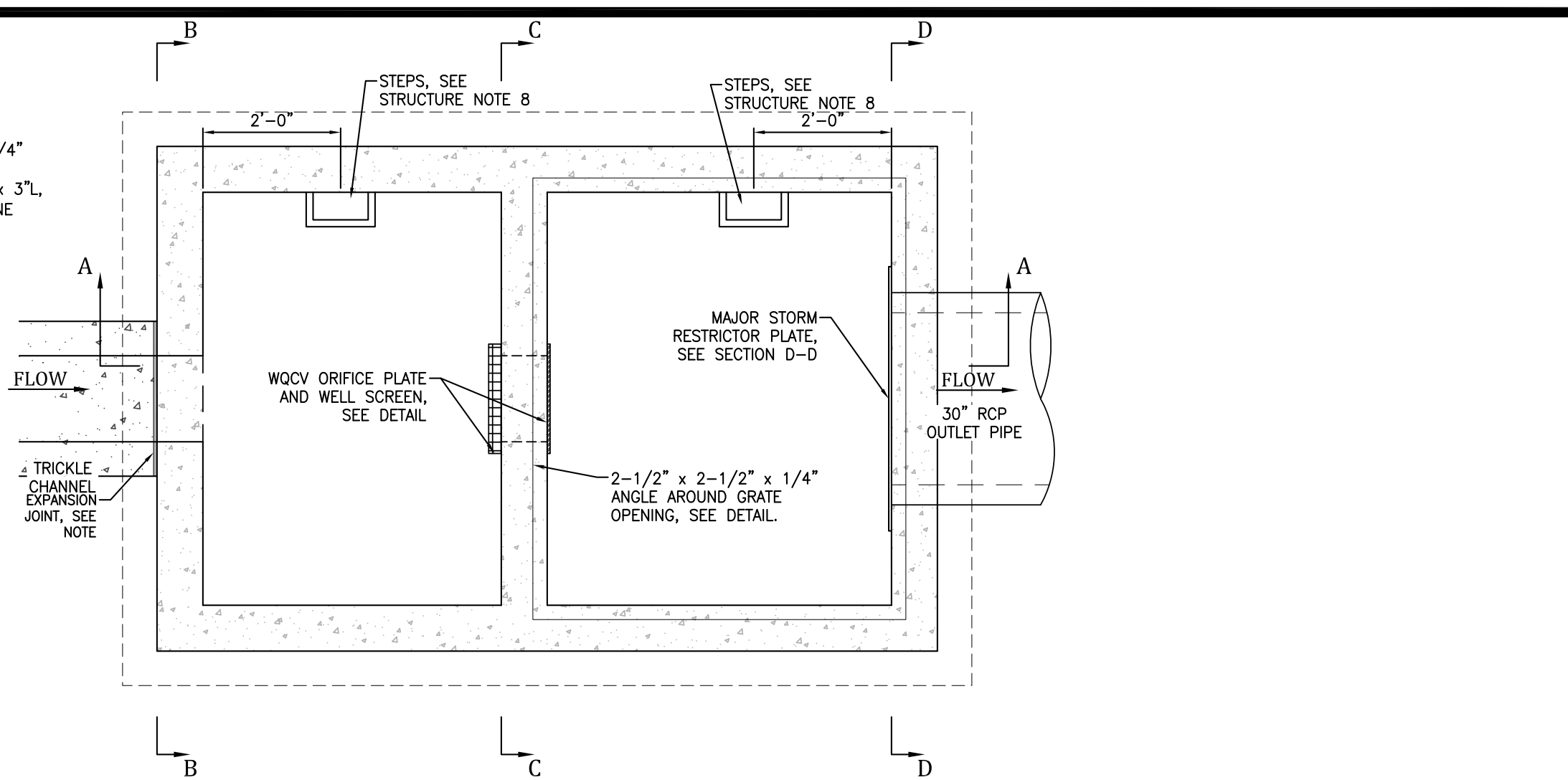
L DETAIL A
SCALE: NTS



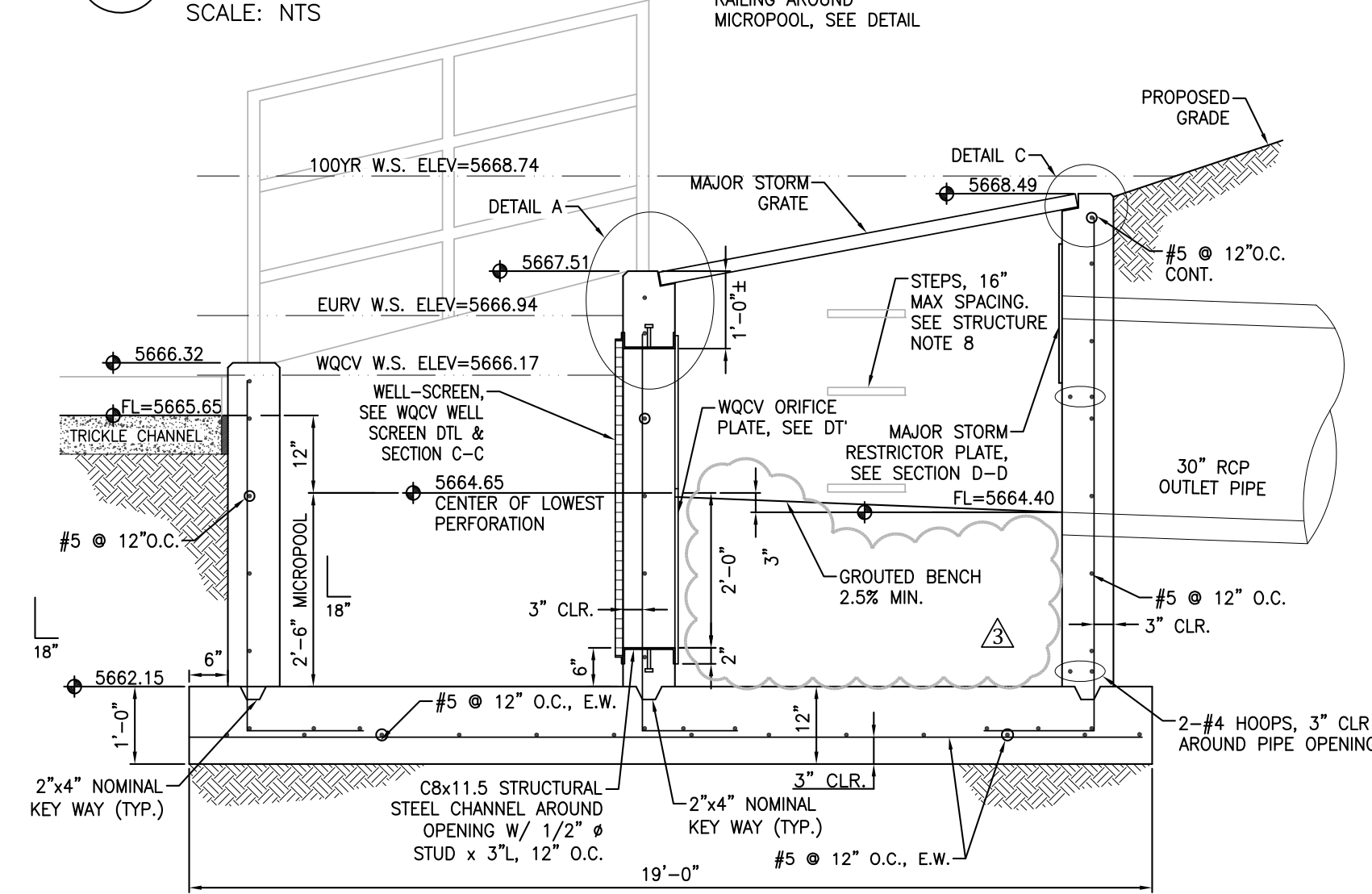
M DETAIL C
SCALE: NTS



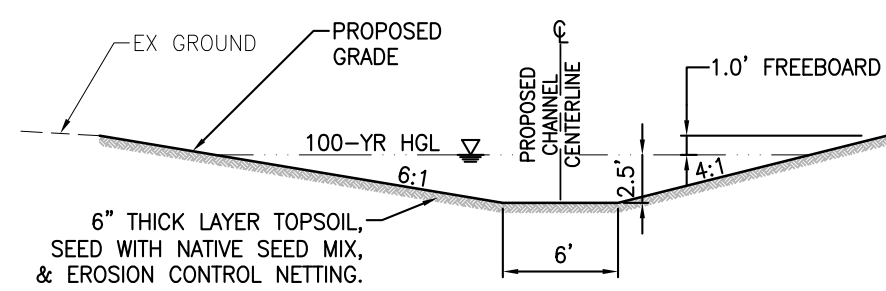
D SECTION D-D
SCALE: NTS



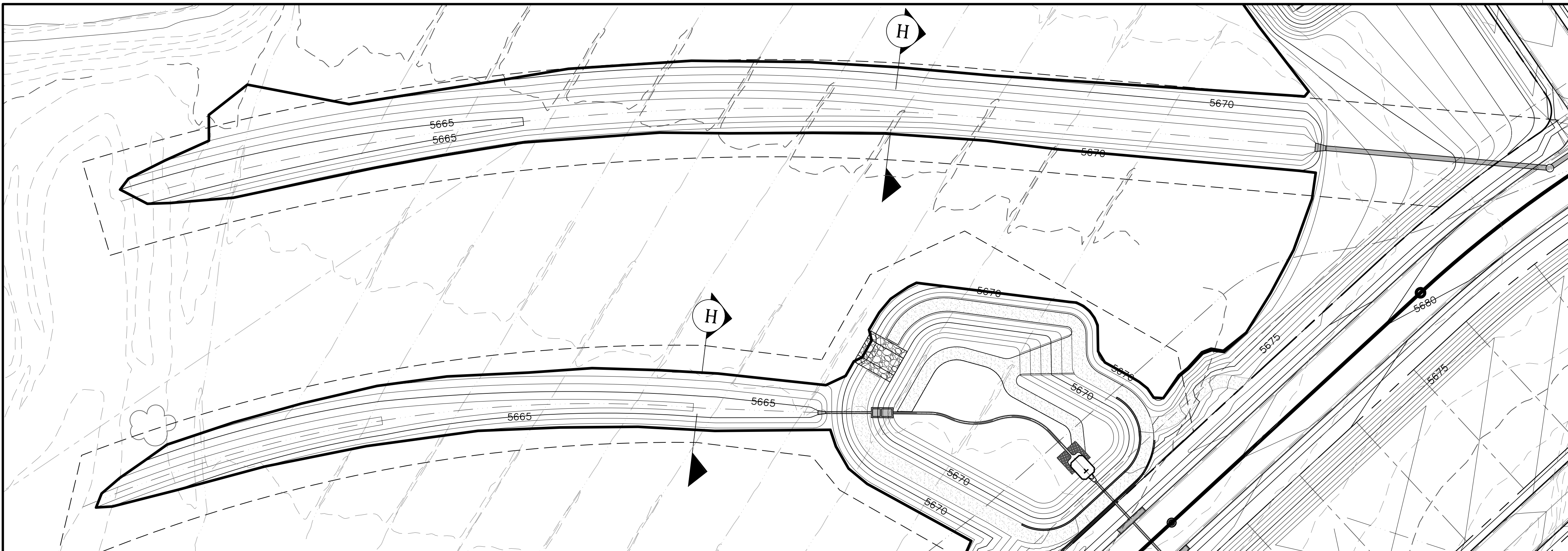
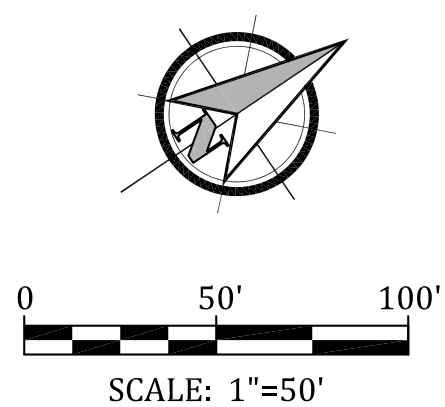
Z OUTLET STRUCTURE DETAIL
SCALE: NTS



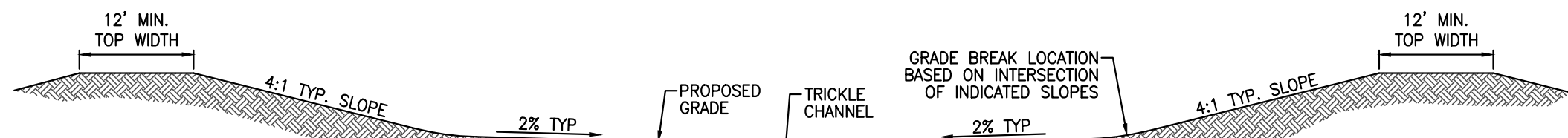
A SECTION A-A
SCALE: NTS



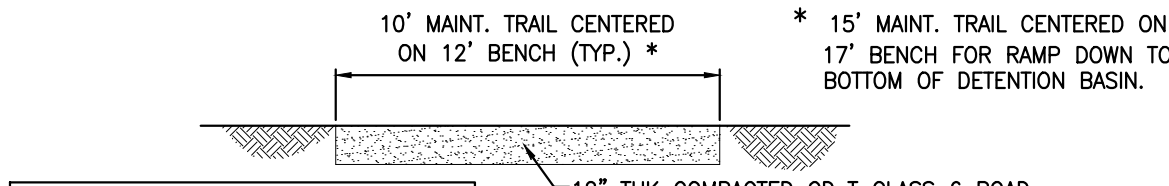
H TYPICAL GRASS-LINED CHANNEL SECTION
SCALE: 1"=10'



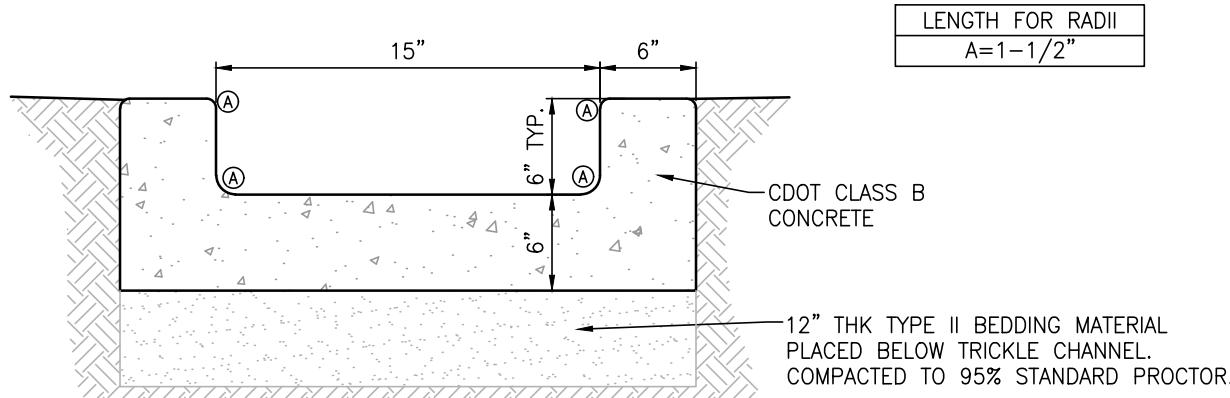
EXTENDED DETENTION BASIN 'A' AND GRASS-LINED CHANNELS TO WEST FORK JIMMY CAMP CREEK



P 19 DETENTION BASIN TYPICAL CROSS SECTION
SCALE: NTS



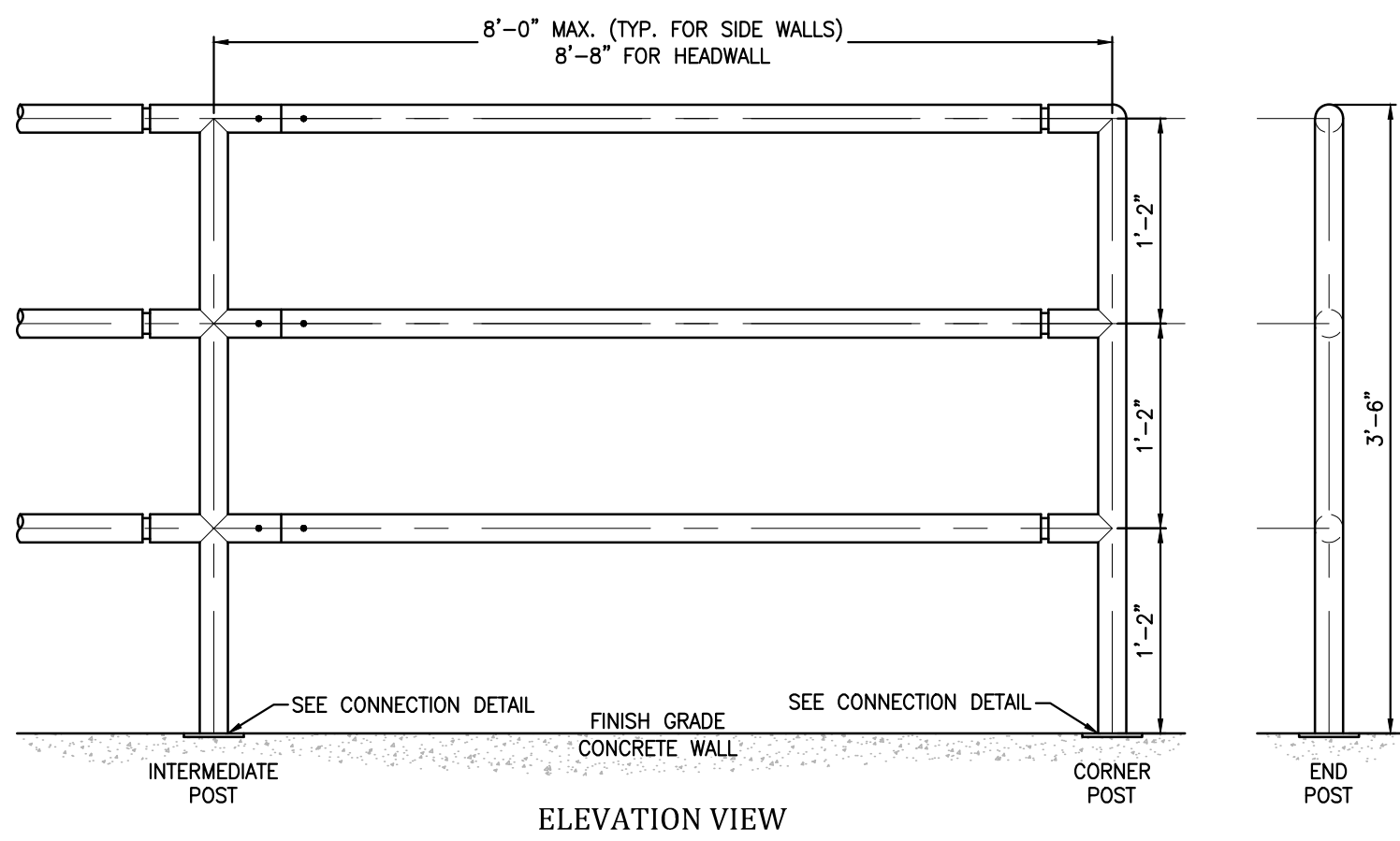
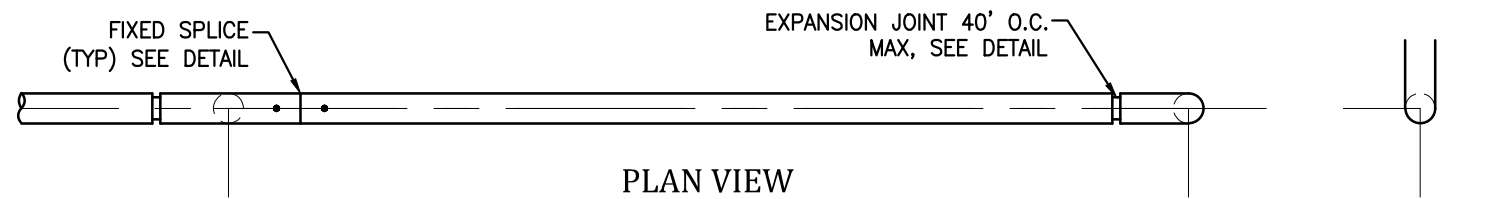
Q 19 MAINTENANCE TRAIL SECTION
SCALE: NTS



N 19 TRICKLE CHANNEL
SCALE: 1"=1'

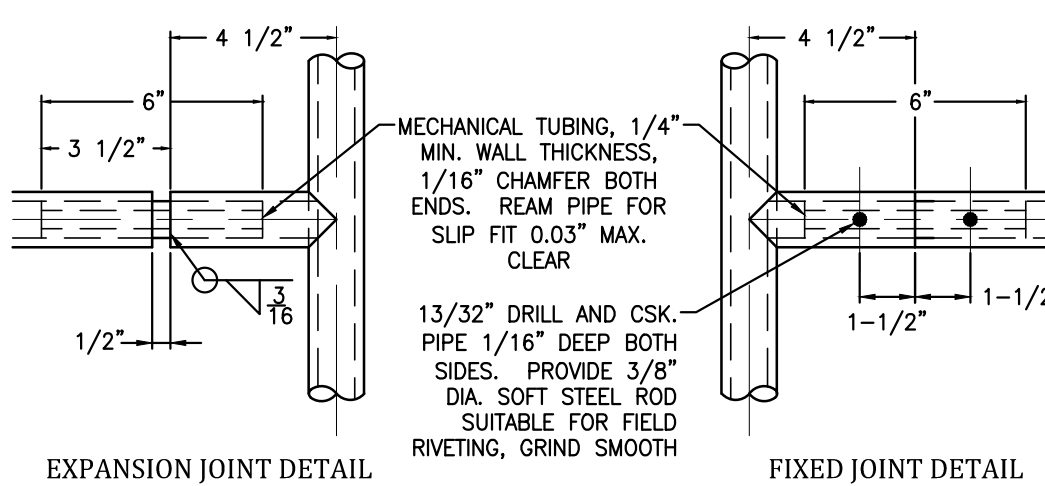
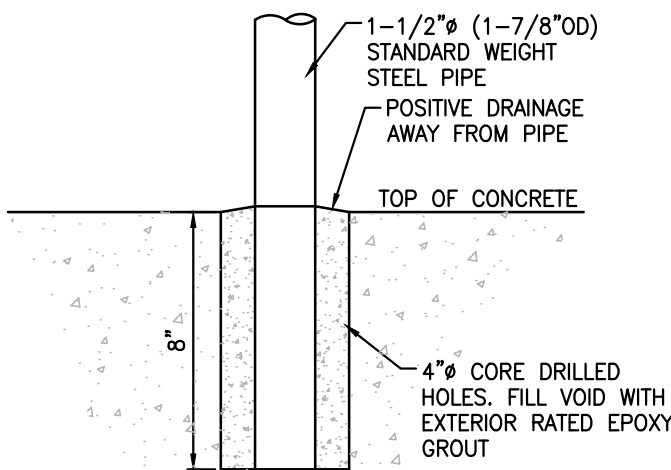
CLASSIFICATION AND GRADATION OF RIPRAP			
Rip-Rap Designation	% Smaller than Given Size by Weight	Intermediate Rock Dimension (Inches)	d ₅₀ * (Inches)
Type VL	70-100	12	6**
	50-70	9	
	35-50	6	
	2-10	2	
Type L	70-100	15	9**
	50-70	12	
	35-50	9	
	2-10	3	
Type M	70-100	21	12**
	50-70	18	
	35-50	12	
	2-10	4	
Type L	70-100	30	18
	50-70	24	
	35-50	18	
	2-10	6	

* d₅₀=Mean particle size (Intermediate Dimension) by weight.
** Mix VL, L and M Rip-rap with 35% topsoil (by volume) and bury with 4-6 inches of topsoil, all vibration compacted and revegetate.
(Figure B-34: Riprap and Soil Riprap Placement and Gradation, UDFCD, Drainage Criteria Manual, Volume 1)

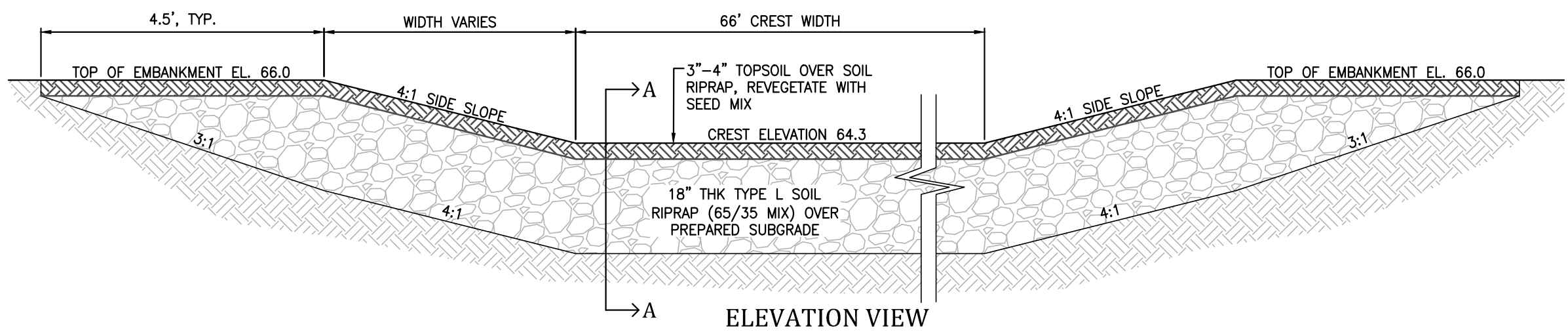
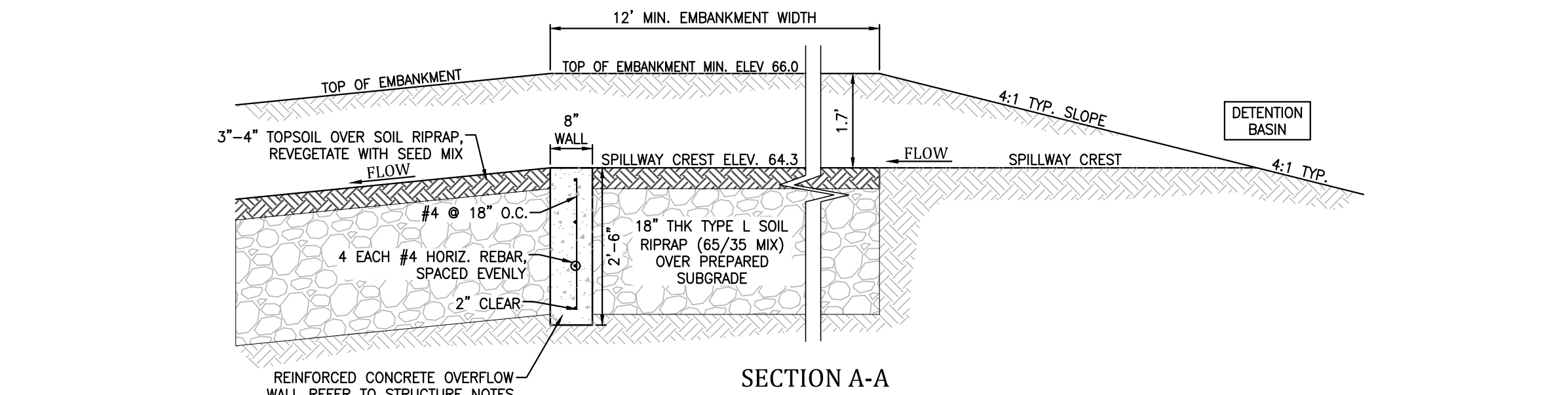
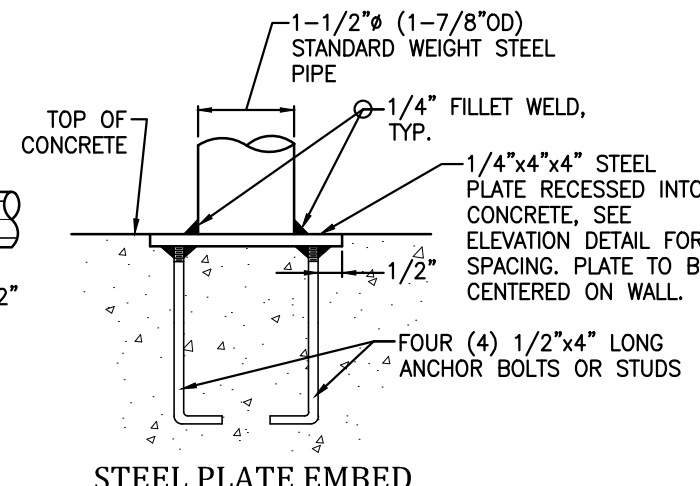


G 19 PEDESTRIAN RAILING/HANDRAIL
SCALE: NTS

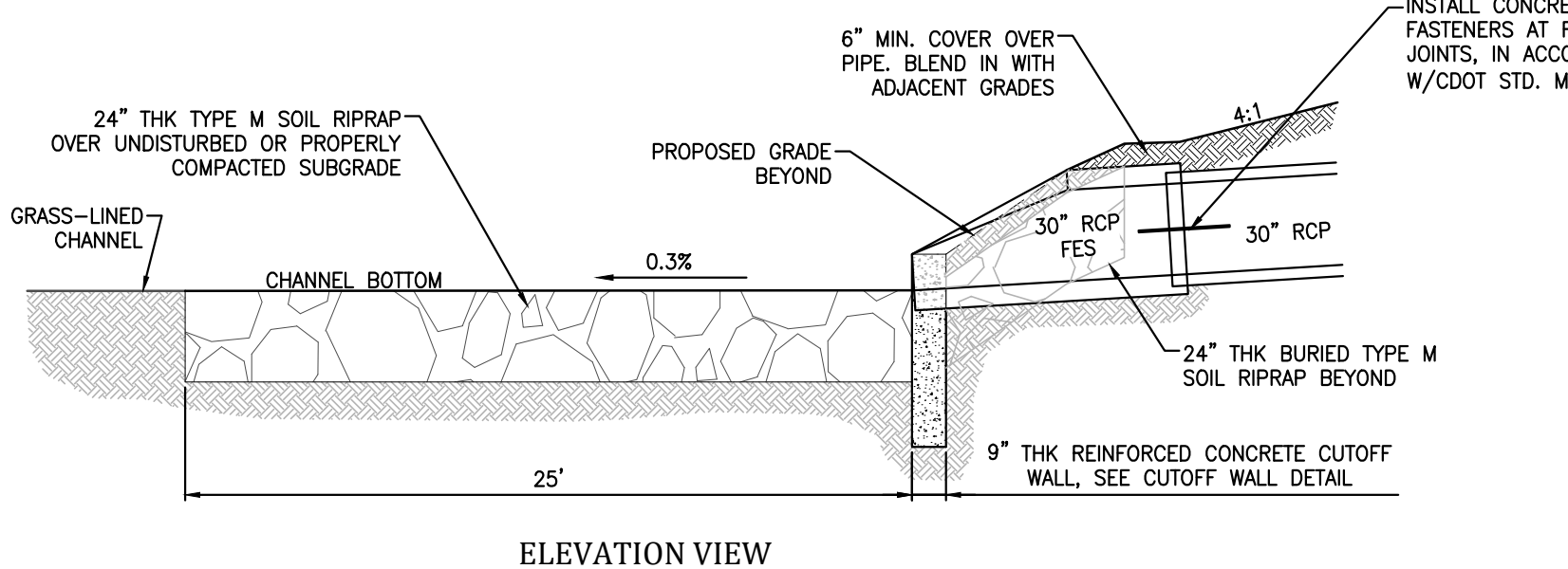
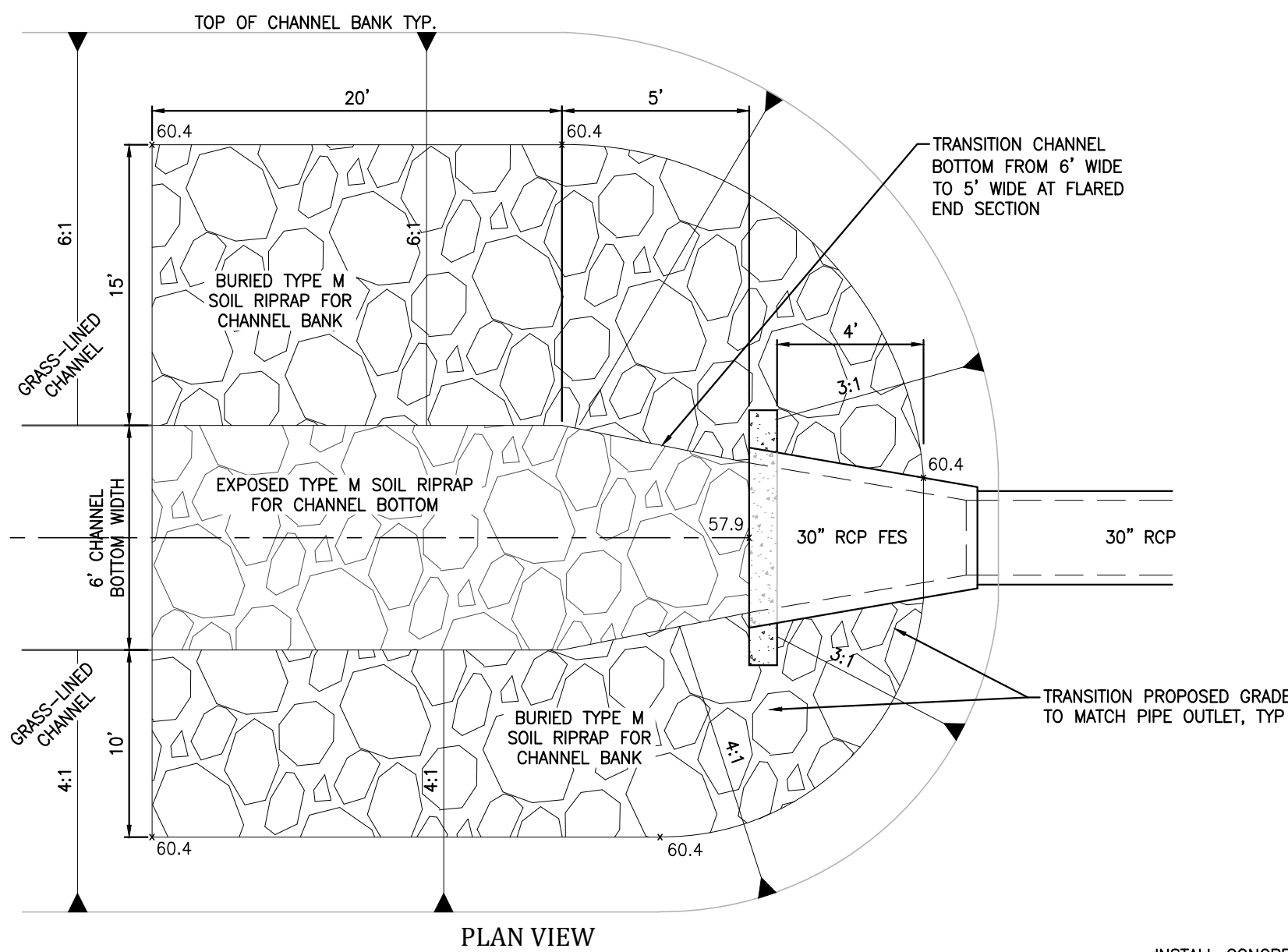
- PEDESTRIAN RAILING/HANDRAIL NOTES:
1. ALL HANDRAIL SHALL BE FABRICATED WITH NEW 1-1/2" (1-7/8" OD) DIAMETER STANDARD WEIGHT STEEL PIPE.
 2. WELD ALL PIPE JOINTS WITH 1/8" REINFORCED WELDS AND DRESS SMOOTH.
 3. CORNERS AND EDGES OF ALL BARS, PLATES AND PIPE ENDS SHALL BE SAVED SMOOTH AND FREE OF BURRS.
 4. ALL HANDRAIL MATERIAL REQUIRED FOR COMPLETE INSTALLATION SHALL BE PROVIDED.
 5. HANDRAIL FINISH SHALL BE ONE COAT METAL PRIMER AND TWO COATS SHERWIN WILLIAMS BRIDGE GREEN. COLOR SHALL BE VERIFIED BY COUNTY.
 6. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION.
 7. RAILING BETWEEN HEADWALL AND WINGWALL SHALL BE SEPARATE OR AN EXPANSION JOINT SHALL BE PROVIDED TO ALLOW FOR DIFFERENTIAL MOVEMENT.



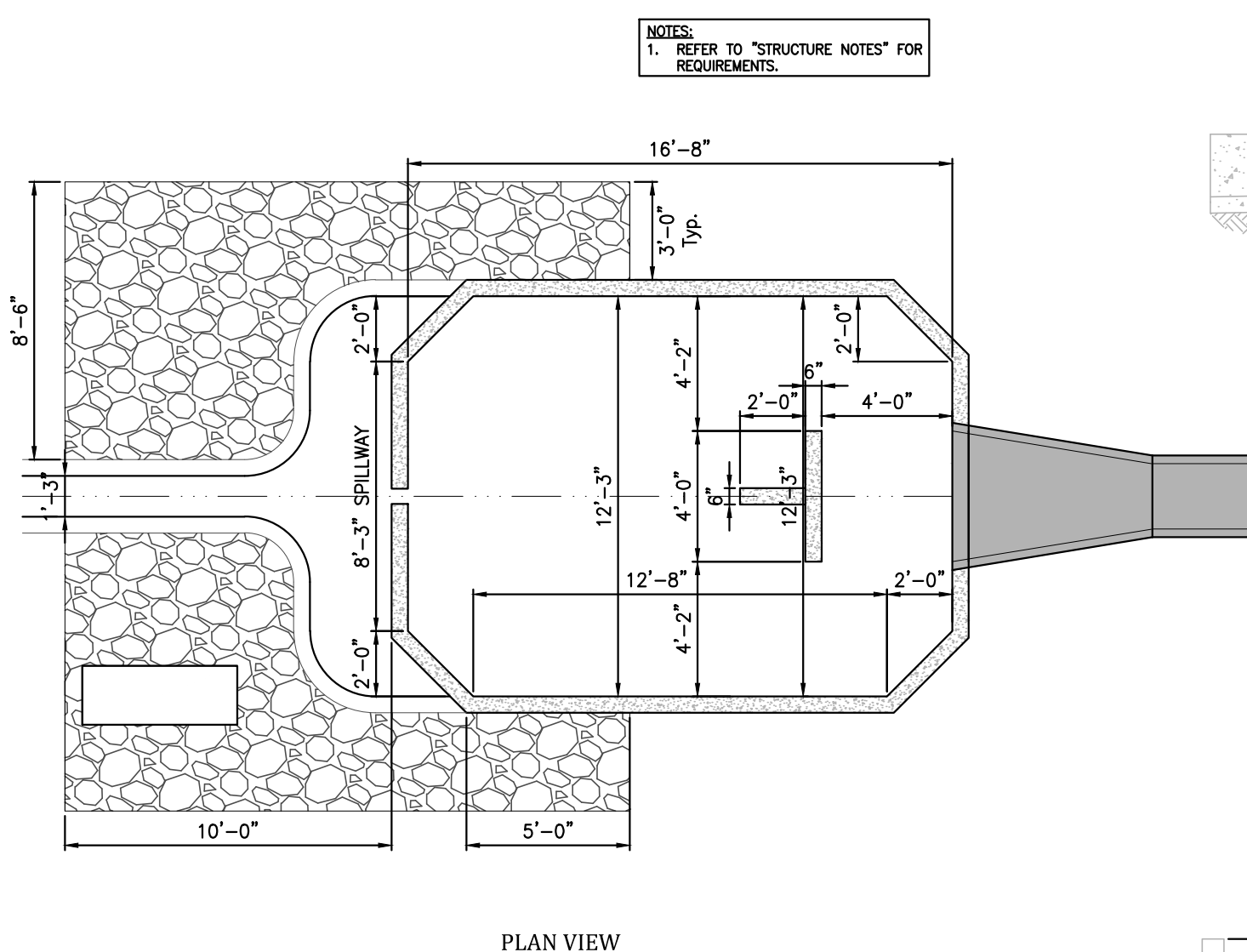
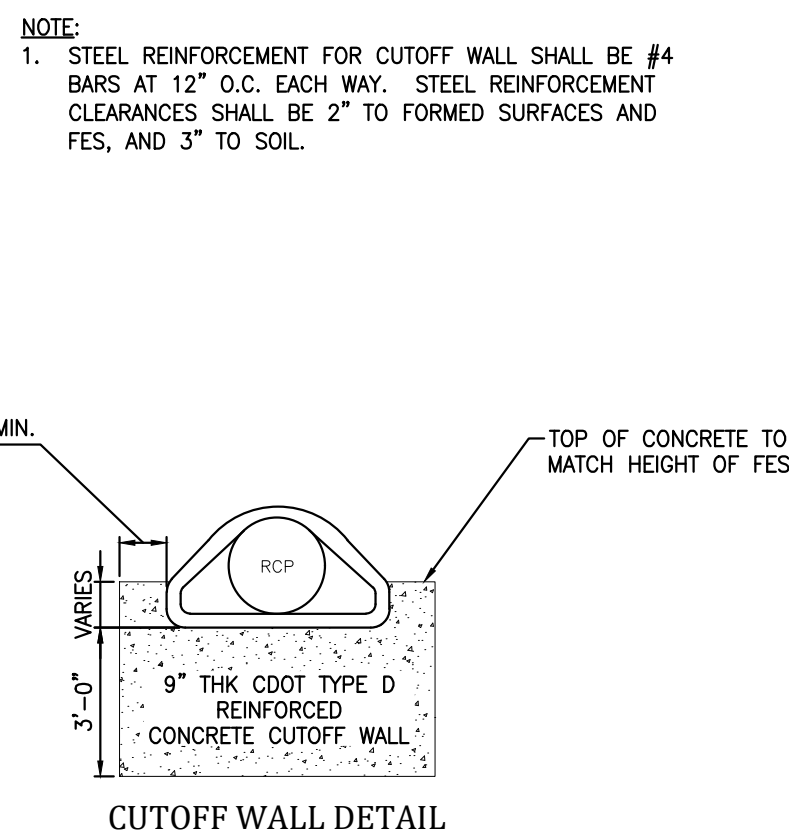
FIXED JOINT DETAIL



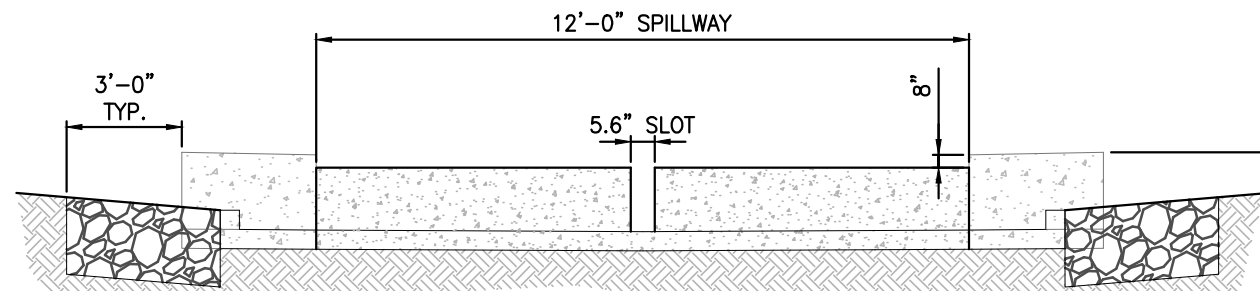
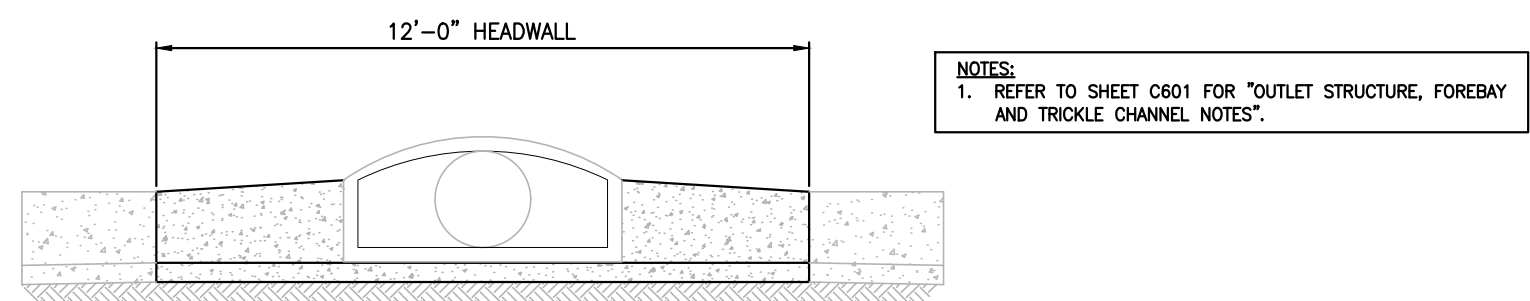
O 19 EMERGENCY SPILLWAY
SCALE: NTS



D 19 30" RCP FES PIPE OUTLET w/CONCRETE CUTOFF WALL AND JOINT RESTRAINTS
SCALE: NTS



R 19 PRESEDIMENTATION FOREBAY
SCALE: NTS



GLEN AT WIDEFIELD FILING NO. 9

SITE DETAIL PLAN
DETENTION BASIN DETAILS
EL PASO COUNTY, COLORADO

Project No.: 17038
Date: September 25, 2018
Design: JAK
Drawn: JAK
Check: AWMc
Revisions:

SHEET

18

18 of 20 Sheets

17038-CW3-17-18-DT.dwg/jun 03, 2019

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group

▲ — EXPANSION JOINTS SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK AND SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE.

MIN. 4' X 4' LANDING
@ 2% SLOPE (MATCH S/W WIDTH)

1" DEEP TOOL JOINT AT CORNERS
OF DETECTABLE WARNING AREA
(TYPICAL BOTH SIDES)

HINGE LINE
(TYP.)

9' MIN.

24" MAX.

12:1 MAX.

1'-6"

Varies

1'-6"

24" DETECTABLE WARNING
AREA, DETECTABLE
WARNING TRUNCATED DOME
PANELS SET INTO FRESH
CONCRETE

1/2" EXPANSION JOINT

RAMP SLOPE
12:1 MAX.

4' X 4' LANDING
@ 2% SLOPE

DETECTABLE WARNING AREA
SLOPE 20:1 MAX.

7" F GUTTER

9' MIN.

6" MIN. TO 8" MAX.

1'-6"

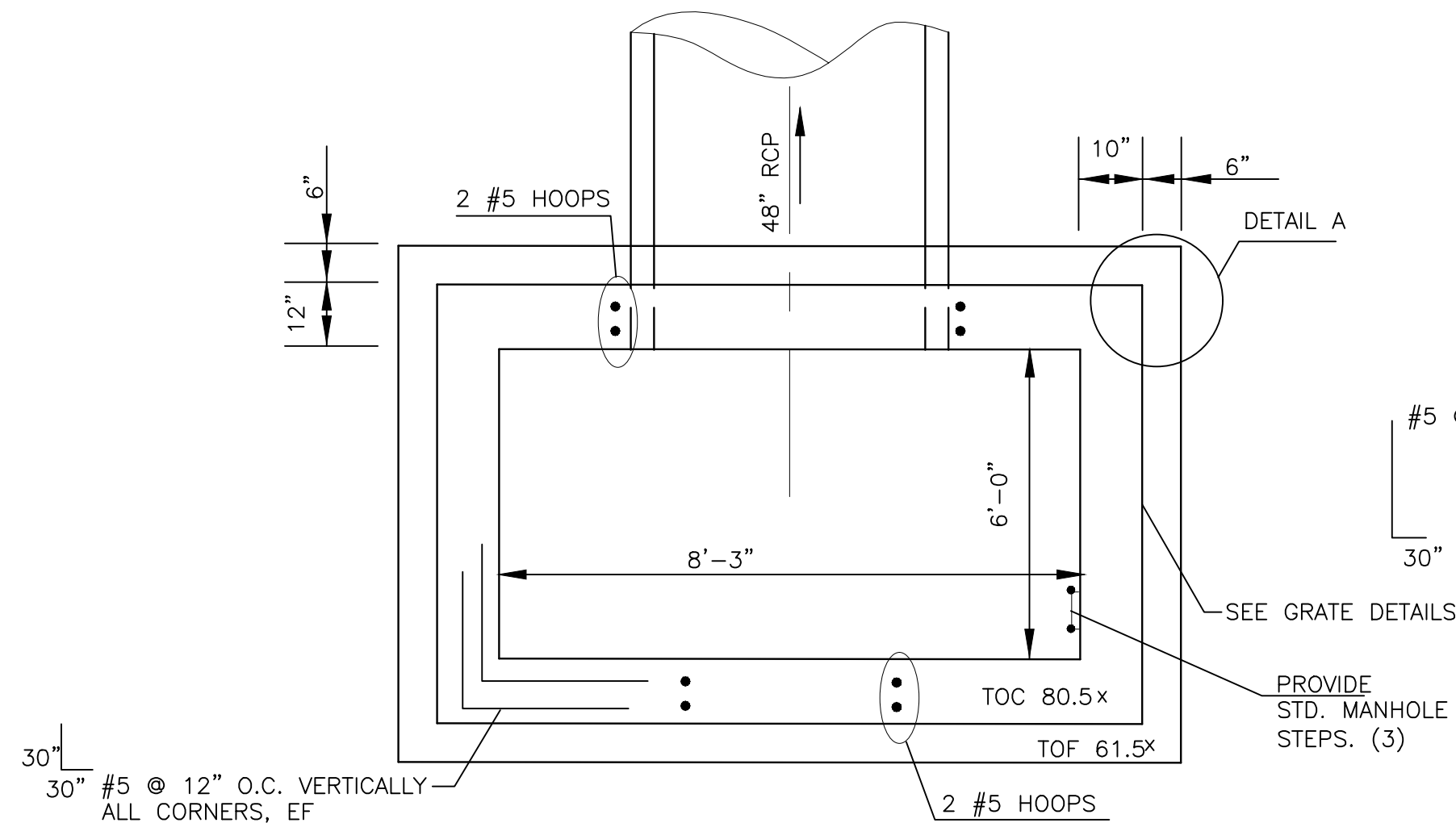
Varies

1'-6"

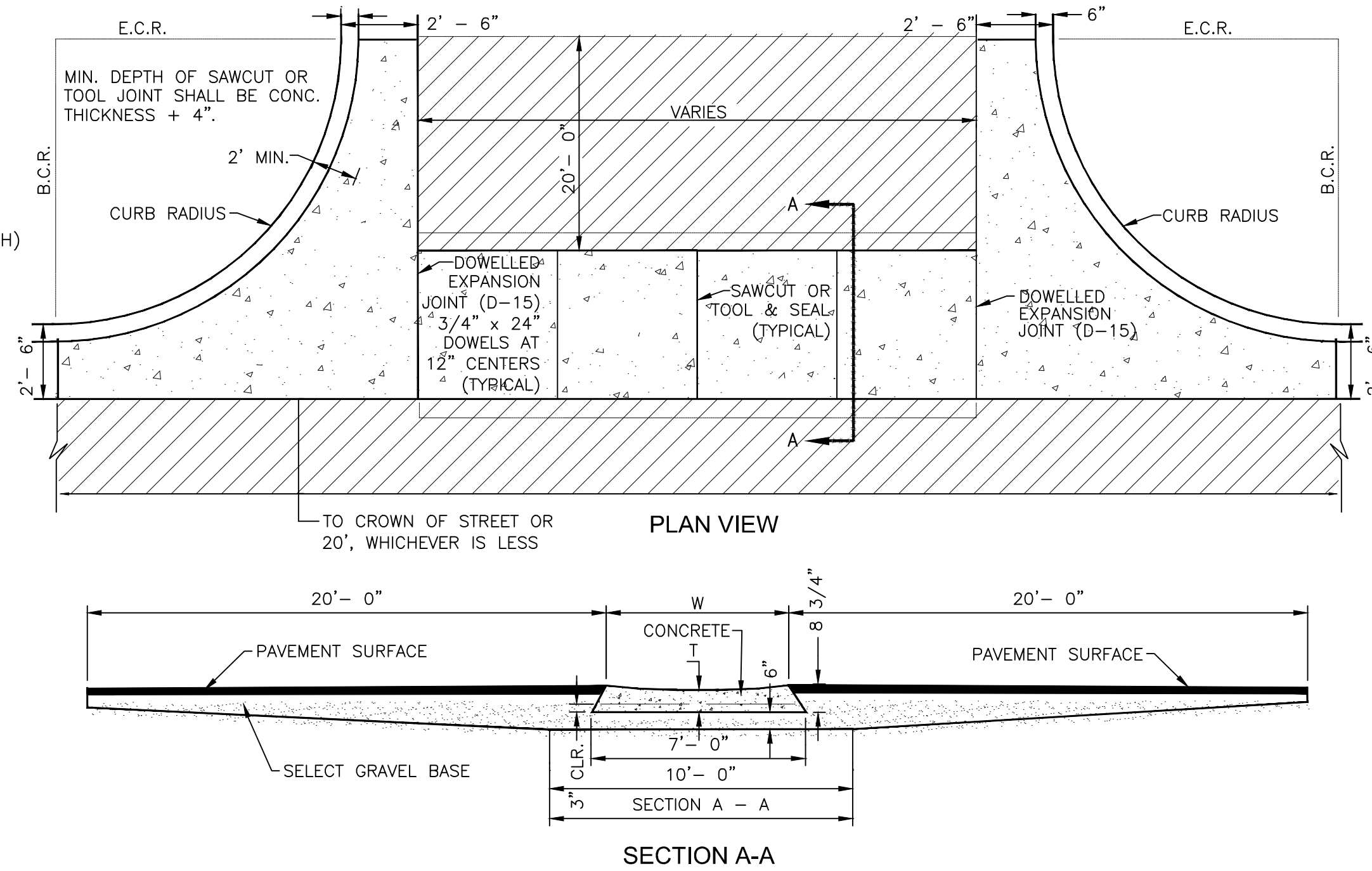
F GUTTER


EPC STD. SD_2-40
NOT TO SCALE

1. All work shall be done in accordance with current Engineering Manual and ADA requirements.
2. Contractor to notify Engineering Division inspection staff 48 hours prior to concrete placement.
3. Pedestrian ramp construction shall be a minimum 3000 psi concrete, minimum 4" thick, non-colored, non-scored, coarse broom finish.
4. Ramp location and length may require modification to maintain the 12:1 maximum running ramp slope and 20:1 detectable warning area due to street intersection grades and / or alignment.
5. Detectable warning area shall start a minimum of 6" but not more than 8" from the flow line of the curb at any point.
6. Detectable warning area shall be prefabricated reddish integrally colored truncated-dome surfaced thermoplastic.
7. The detectable warning area shall be 24" in length and the full width of the ramp.
8. Ramp width required is the same as approaching sidewalk, 4' minimum.
9. all ramps will be perpendicular to traffic with the exception of mid-block or terminal ramps which may be parallel subject to approval.
10. Avoid pacing drainage structures, traffic signal / signage, utilities / junction boxes, or other obstructions within proposed ramp areas.
11. Where the 1'- 6" flared side(s) of a perpendicular curb ramp is (are) contiguous with a pedestrian or hard surface area, the flare width shall be increased to 8' minimum and the maximum flare slope shall not exceed 10:1.
12. Pedestrian walkway and / or location of existing or future pedestrian ramps on opposite corners shall be reviewed before construction new ramps. New ramps shall align with existing ramps and pedestrian walkway.
13. At marked pedestrian crossings, the bottom of the ramps, exclusive of the flare sides, shall be totally contained within the markings.
14. Sidewalk cross-slope: 1/4"/ft.
15. Concrete mix design shall conform to the requirements of the color admixture manufacturer and the following:
 - 1) 28-day compressive strength = 4,000 PSI (min.)
 - 2) Water/cement ratio = 0.45 (max.)
 - 3) Cement content = 6-1/2 sacks/C.Y. (min.) (Type II cement)
 - 4) Maximum aggregate size = 3/4"
 - 5) Entrained air content = 6% - 10%
 - 6) Slump = 1 inch (min.) - 4 inches (max.)



NTS



1. W - WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL RAADS.
2. T - SQUARED-OFF RETURN TO BE POURED MONOLITHIC 8" P.C.C. MINIMUM WITH 6x6 - 4.4 W.W.F. OR #4 @ 18" E.W.
3.  = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR

EPC STD. SD_2-26
NOT TO SCALE

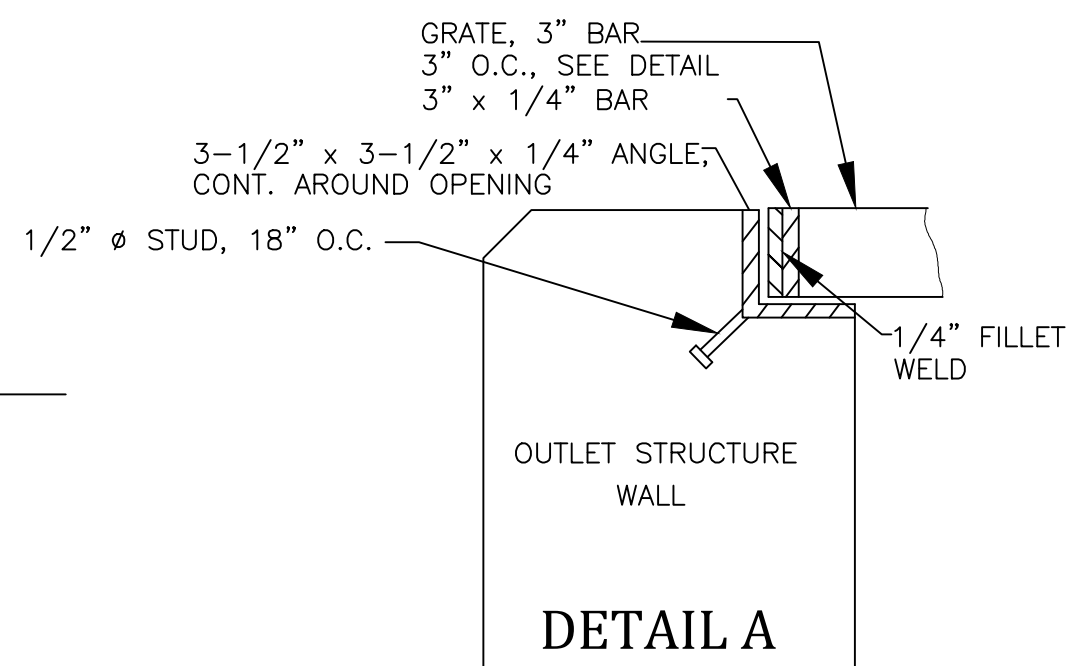
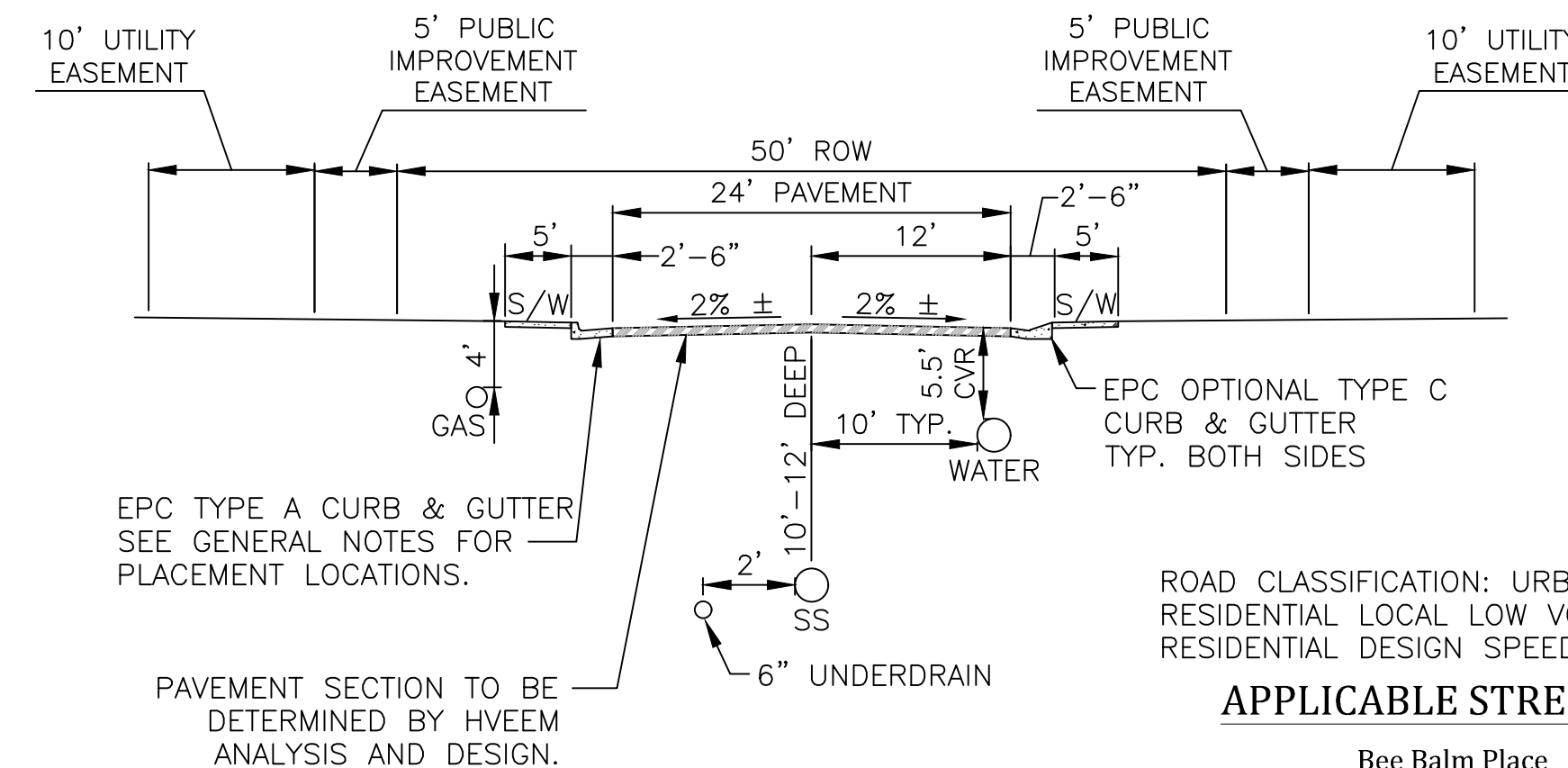
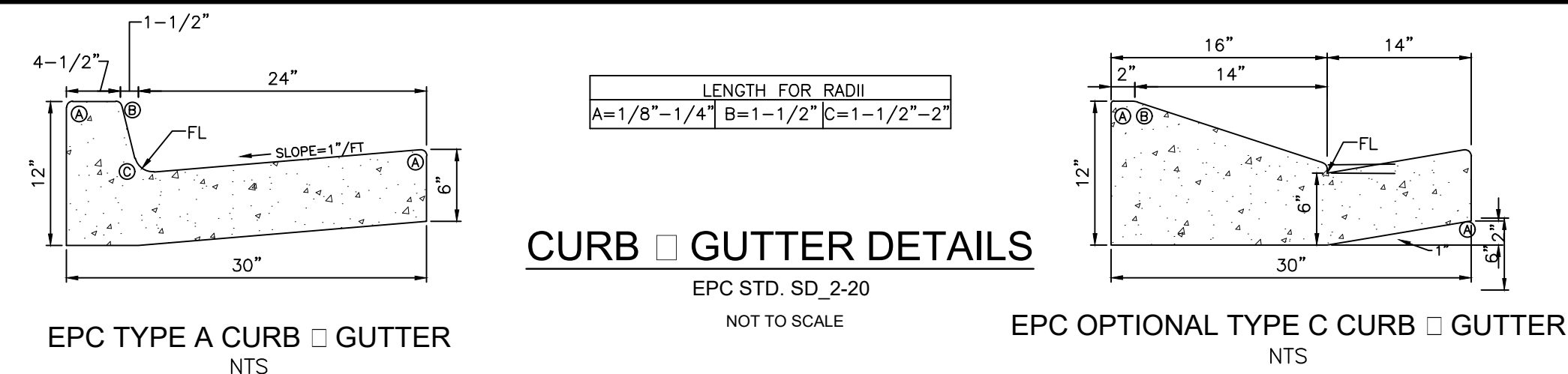


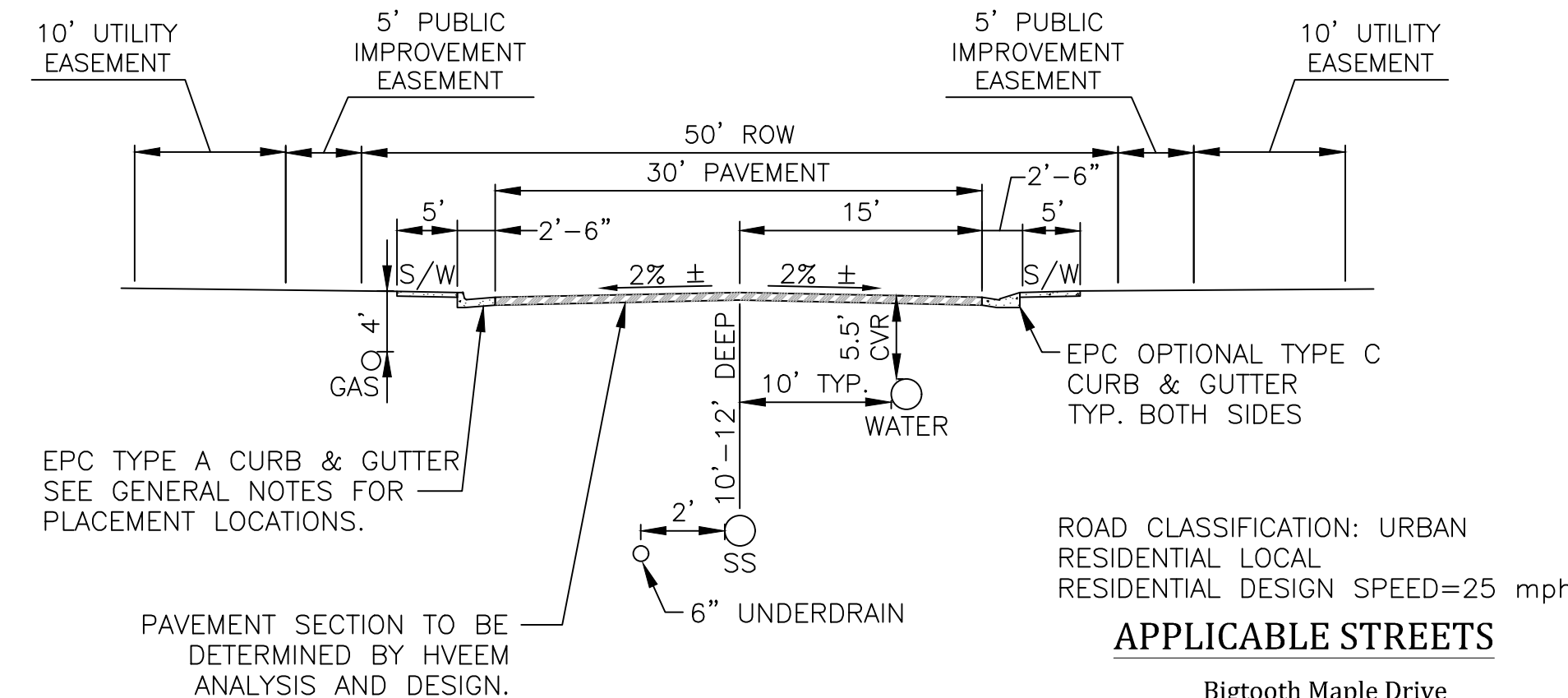
Diagram of a rectangular grate with dimensions and material specifications:

- Overall width: 6'-3"
- Overall height: 6'-6"
- Material: 1/2" ϕ ROUND BAR THROUGH BAR GRATE
- Bar spacing: 1/4" x 3" BAR, 3" O.C.
- Welds: ALL WELDS 1/4" FILLETS

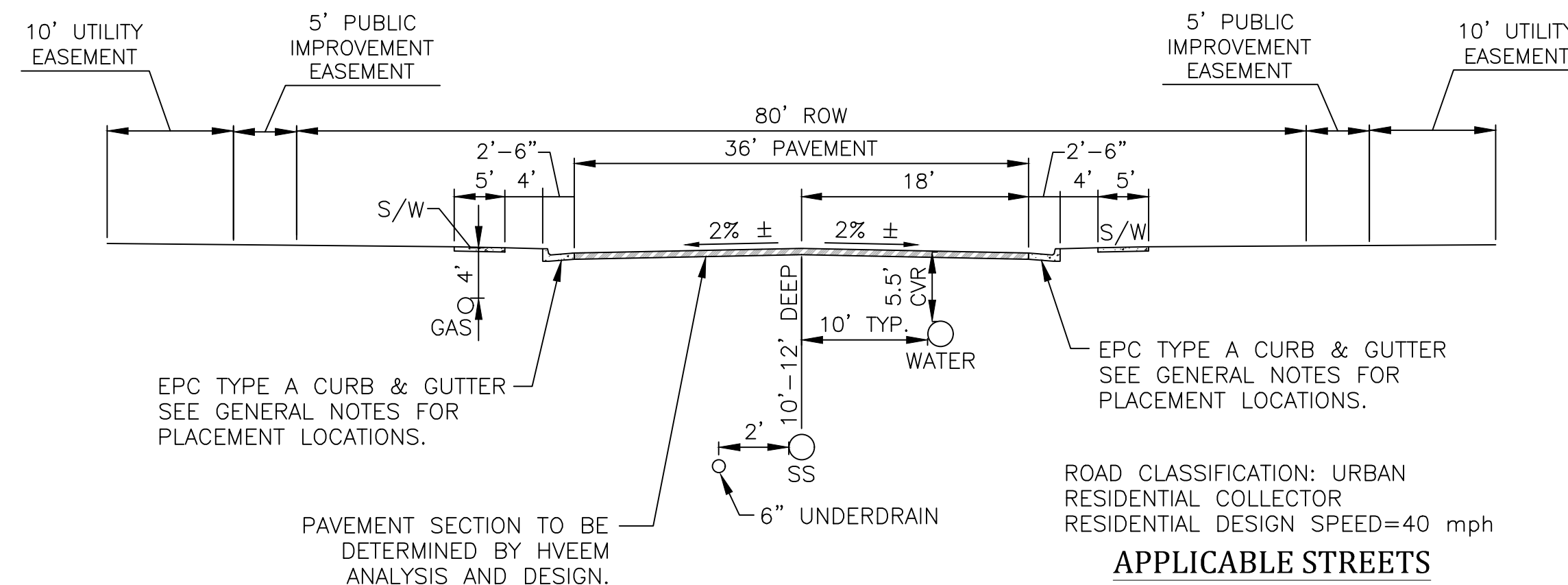
NOTE:
 ALL GRATE DIMENSIONS TO BE FIELD VERIFIED PRIOR TO FABRICATION.
 ALL GRATE MATERIALS SHALL BE GALVANIZED.
 GRATE MAY BE FABRICATED IN NO MORE THAN 3 EQUAL LENGTHS.

$$1''=2'$$


NOT TO SCALE



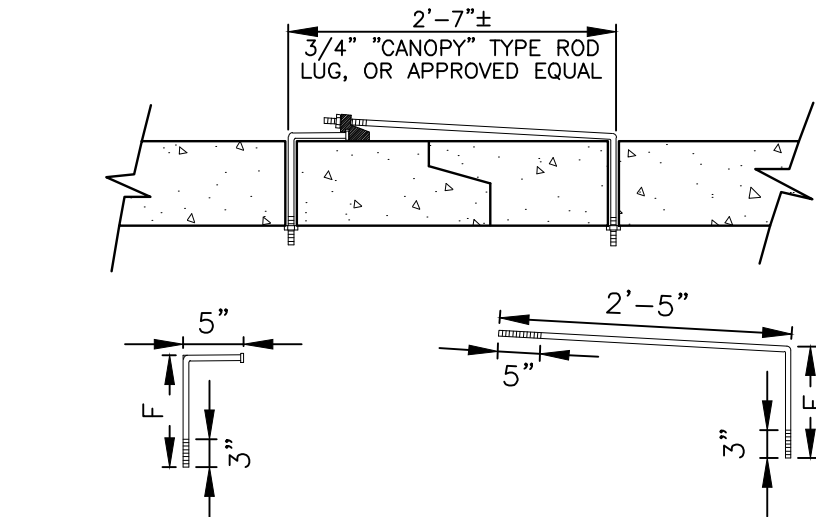
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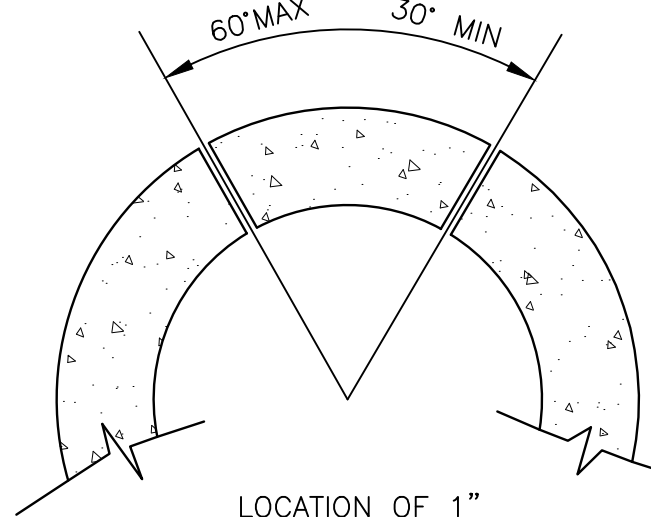
NOT TO SCALE

UNDERDRAIN NOTES

1. UNDERDRAIN TO BE CONSTRUCTED WHERE INDICATED BY A DASHED LINE (----).
2. SOLID DRAIN PIPE WILL BE USED IN AREAS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
3. ALL UNDERDRAIN CONSTRUCTION SHALL CONFORM WITH THE LATEST CITY OF COLORADO SPRINGS STANDARDS.
4. ENGINEERING FABRIC TO HAVE A MINIMUM 12-INCH OVERLAP ABOVE UNDERDRAIN GRANULAR FILL.
5. UNDERDRAIN PIPE TO BE CONSTRUCTED WITH THE TOP OF PIPE EQUAL TO OR BELOW THE BOTTOM OF THE SANITARY SEWER PIPE.
6. GEOTECHNICAL ENGINEER TO DETERMINE EXTENT OF ACTIVE/PASSIVE UNDERDRAIN DEPENDING UPON CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
7. THE CONNECTION BETWEEN THE ACTIVE AND PASSIVE PORTIONS OF THE UNDERDRAIN SYSTEM IS TO BE CONSTRUCTED WITH A NON-PERMEABLE BARRIER SO THAT ALL COLLECTED GROUNDWATER IS DIRECTED INTO THE PASSIVE PIPE SECTION.



3/4" GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS, MILD STEEL, ASTM A 307, ROD LUG SHALL BE COATED WITH COAL-TAR, EPOXY PAINT OR APPROVED EQUAL.



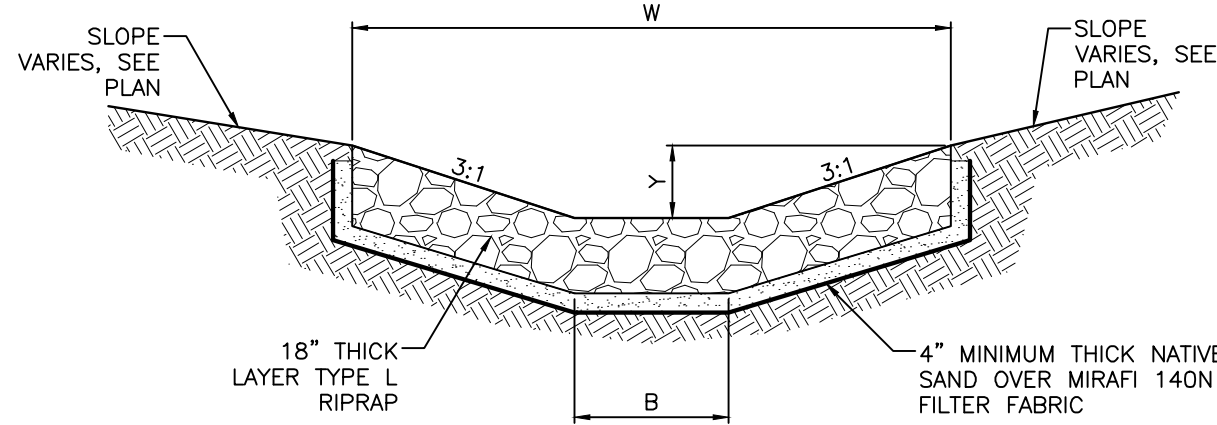
NOTE:
CONCRETE JOINT FASTENERS REQUIRED
ON THE FIRST TWO PIPE JOINTS FROM
A FLARED END SECTION.

PIPE DIAMETER	F
18"-30"	5"
36"-42"	6"
48"-60"	7"
72"-84"	9"

CONCRETE PIPE JOINT FASTENER DETAIL

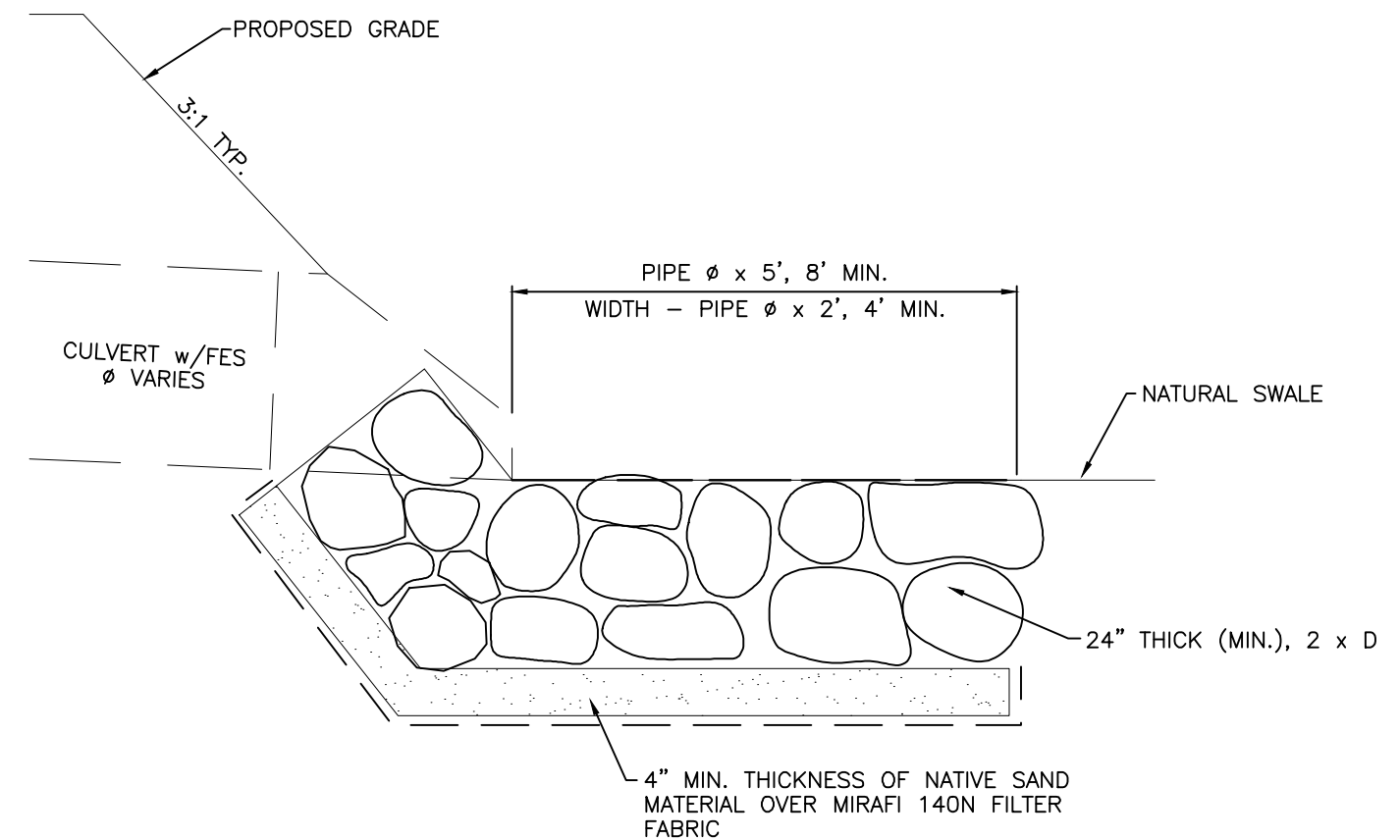
NOT TO SCALE

LOCATION	B	W	Y
NORTH RUNDOWN	1'	7'	1'
SOUTH RUNDOWN	1'	7'	1'



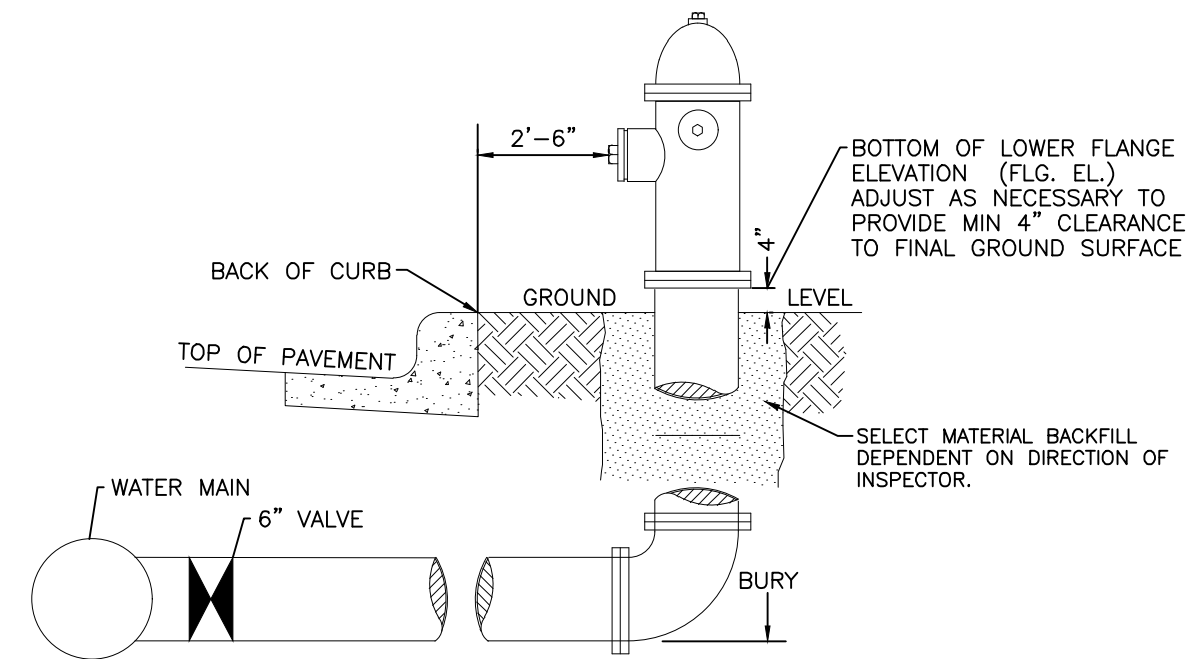
RIPRAP RUNDOWN DETAIL -
PEACEFUL VALLEY ROAD AT MARKSHEFFEL ROAD

SCALE: NTS



TYPICAL CULVERT OUTLET PROTECTION

NOT TO SCALE



GENERAL NOTES:

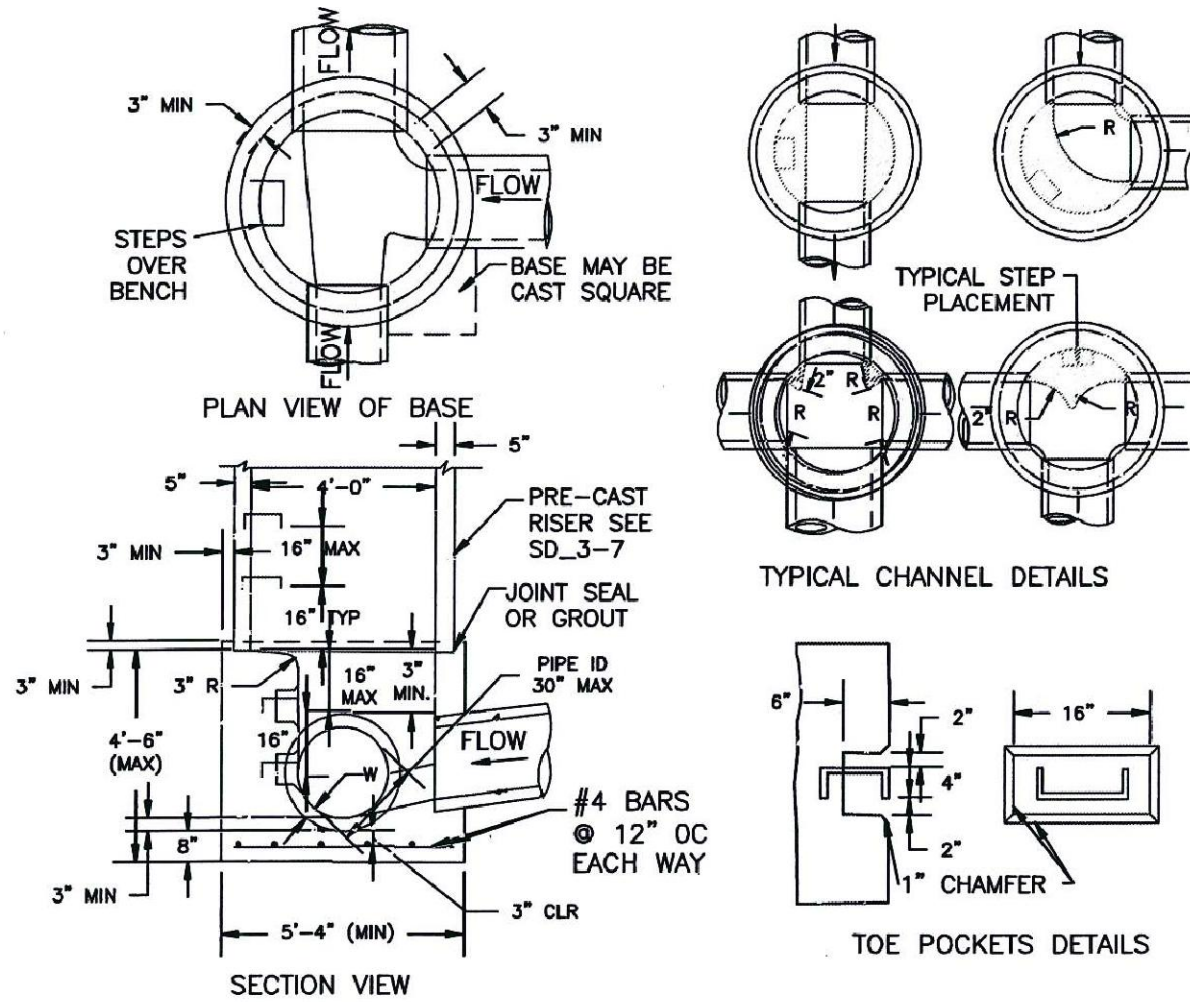
1. Hydrant nozzles shall be positioned at right angles to curb. If no curb or sidewalk exists, nozzles shall be placed at right angle to street or alley.
2. Hydrants shall be placed a minimum of 5.0 feet from any utility or drainage structure.
3. Any hydrant being installed with conditions other than those mentioned and/or detailed below will require signed approval from the Widefield Water District and Security Fire District.
4. See Site Utility Plan for hydrant locations and flange elevations.
5. The upper exposed section of the hydrant above ground shall be painted rustoleum 659 yellow or equal. The buried portion of the hydrant shall be given a bituminous coating in accordance with Section 10-8.1 of AWWA Standard C110.

FIRE HYDRANT DETAIL

NOT TO SCALE

SUBSEQUENT TO STRIPPING AND GRUBBING THE FOLLOWING OVERLOT/PIPE INSTALLATION PROCEDURES ARE ANTICIPATED FOR THE SANITARY SEWER LOCATED ON PROPOSED EMBANKMENTS:

- THE REMOVAL AND REPLACEMENT OF METASTABLE SOIL.
- TESTING OF THE FILL SUBSEQUENT TO THE PENETRATION OF THE METASTABLE SOIL WILL CONTINUE UNTIL A MINIMUM OF 7 FEET OF STRUCTURAL FILL HAS BEEN PLACED ABOVE THE PROPOSED SEWER LINE ELEVATION.
- UTILITY TRENCHES SHALL BE EXCAVATED AND SANITARY SEWER LINE INSTALLED. THE PIPE SHALL BE PROPERLY BEDDED AND STRUCTURAL FILL PLACED AND TESTED TO THE PREVIOUS GRADE.
- THE OVERLOT AND EMBANKMENT FILL CAN BE COMPLETED.
- WHERE THE SANITARY SEWER IS PLACED IN EMBANKMENT FILL DURING THE OVERLOT PROCESS, STE SHALL MONITOR AND TEST ALL WORK ASSOCIATED WITH THE AFFECTED PORTIONS.

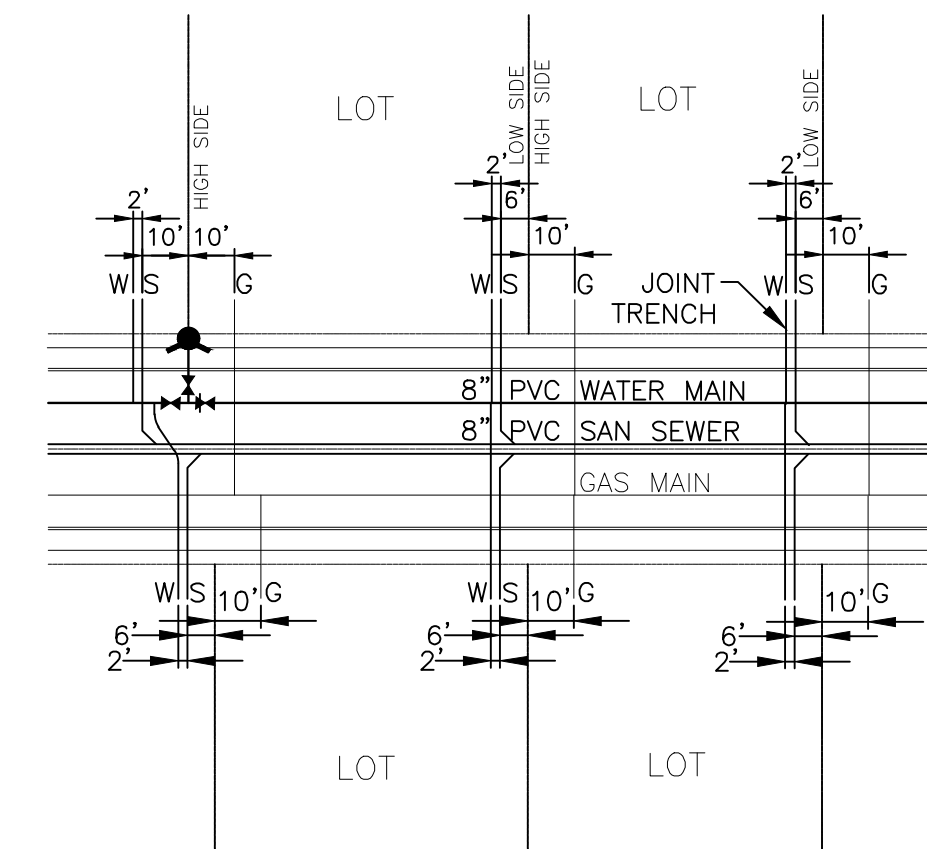


NOTES

1. TYPE II MANHOLES SHALL BE USED WHEN APPROPRIATE AND TYPICALLY WHEN THE PIPE SIZES ARE 30" OR LESS INSIDE DIAMETER.
2. VIEW AND DETAILS ARE TYPICAL. DESIGN ENGINEER SHALL DETERMINE MANHOLE BASE CONFIGURATION AND DIMENSIONS FOR PARTICULAR PIPE SIZES AND ALIGNMENT.
3. EITHER LADDER OF STEPS SHALL BE INSTALLED WHEN MANHOLE DEPTH EXCEEDS 30". STEPS IN BASE SHALL BE INSTALLED IN "TOE POCKETS" (SEE DETAIL THIS SHEET). LOWEST STEP SHALL BE A MAXIMUM OF 16" ABOVE THE FLOOR.
4. PIPES SHALL BE TRIMMED TO FINAL SHAPE AND SET BEFORE MANHOLE IS POURED.
5. BENCH SHALL BE SLOPED TOWARD CENTER OF MANHOLE BASE (4:1 MAX., 1/2" PER FOOT. MIN.).
6. FLOOR OF MANHOLE SHALL BE TROWELLED TO A SMOOTH, HARD SURFACE AND SHALL SLOPE TOWARDS THE OUTLET (8:1., 1/2" PER FT. MIN.). FLOOR SHALL BE SHAPED AND CHANNELED; SEE DETAILS THIS SHEET.

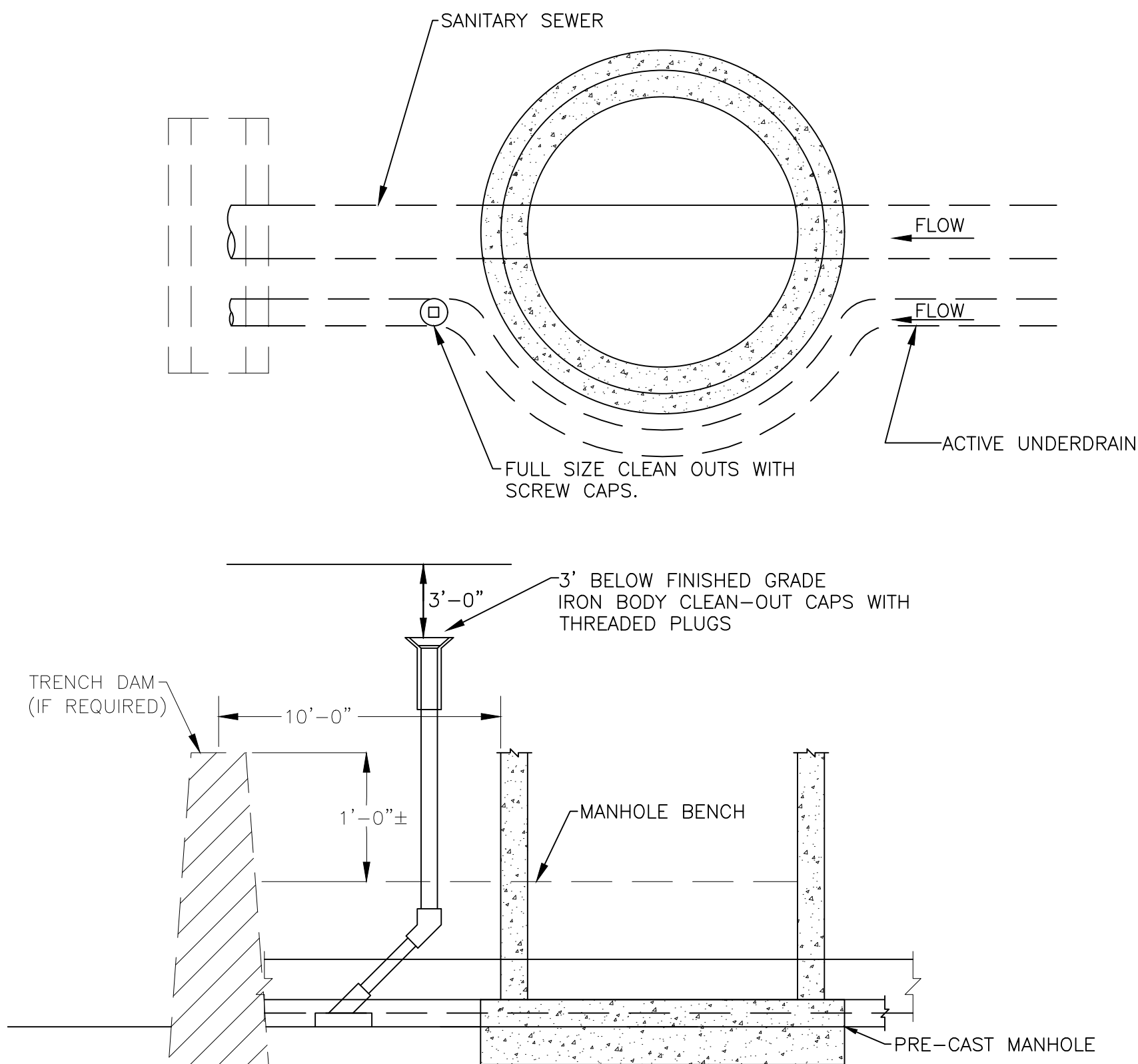
STORM SEWER MANHOLE DETAIL TYPE II

EPC STD. SD 3-2
NOT TO SCALE



TYPICAL JOINT-TRENCH UTILITY SERVICE DETAIL

NOT TO SCALE



GROUNDWATER UNDERDRAIN DETAIL

CLEANOUT LOCATIONS OUTSIDE MANHOLE
NOT TO SCALE