



## Street Improvements and Storm Drainage Facilities Certification Letter

June 16, 2022

Mr. Brad Walters  
El Paso County Development Services  
2880 International Circle Suite 110  
Colorado Springs, Colorado 80910

RE: The Glen Filing No 10

Dear Mr. Walters:

On behalf of Glen Development Company, Kiowa Engineering hereby requests that the public storm drainage facilities, and public street improvements, installed as a part of the Glen a Widefield Filing No. 10 development, be accepted for County Maintenance.

### Public Storm Drainage Facilities

The construction of public storm drainage Facilities for the Glen a Widefield Filing No 10 were observed by Kiowa Engineering Corporation. These facilities have been constructed in general compliance with the approved design plans and specifications as filed with the County.

The detention basin as-constructed drawings are attached (Sheets 11 and 12).

Based upon this information and information gathered during periodic site visits to the project during the installation of the storm sewer facilities, Kiowa Engineering Corporation is of the opinion that the storm drainage facilities have been constructed in general compliance with the approved design plans and specifications as filed with the County. Two additional forebays will be installed in the future. The interim storage capacity of the basin is adequate for future Filing No. 11 and 12. The 'regular' riprap on the upstream side of the wall be replaced with soil riprap with the improvements related to Filings No. 11 and 12.

The Site and adjacent properties (as affected by work performed under the County permit) are stable with respect to settlement and subsidence, sloughing of cut and fill slopes, revegetation or other ground cover. The Site Grading and Paving meet or exceed the minimum design requirements.

### The Public Street Improvements

The Public Street Improvements for The Glen at Widefield Filing No 10 consist of; curb and gutter, asphalt paving, crosspans, pedestrian ramps, and signage for the following street segments:

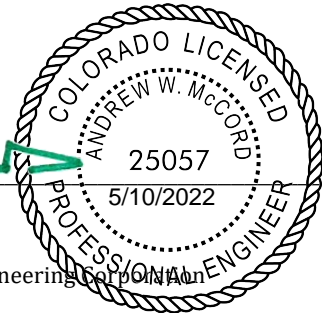
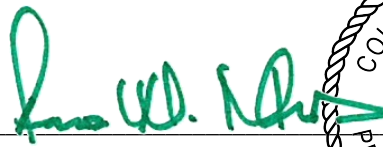
- Peaceful Valley Road (from Glen Filing No. 8 to Marksheffel Road)
- Pennycress Drive (from Glen Filing No. 8 to Peaceful Valley Road)
- Buffalo Bur Trail (from Pennycress Drive to cul-de-sac)

Based upon information gathered during construction and post-construction, Kiowa Engineering Corporation is of the opinion that the street improvements have been constructed in general compliance with the approved design plans and specifications as filed with the County.

**Statement of Engineer in Responsible Charge:**

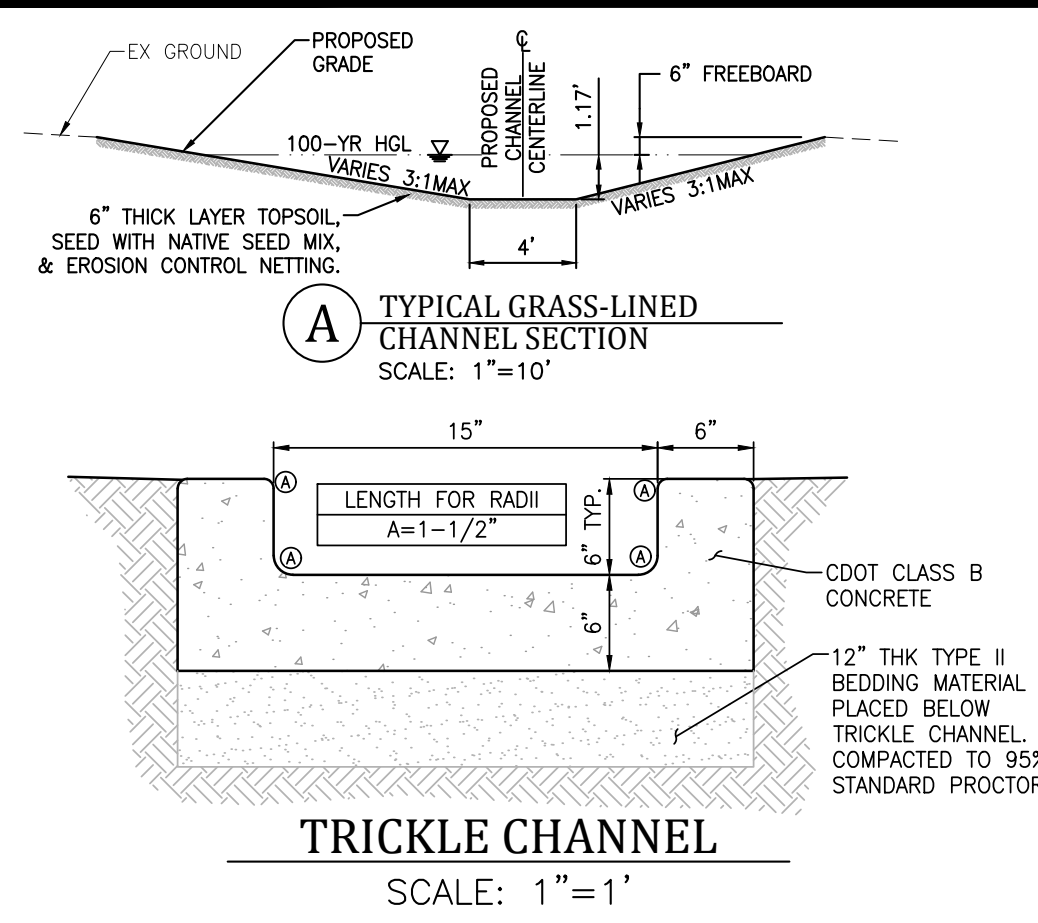
To the best of my knowledge, information and belief, the referenced Public Storm Drainage Facilities and Public Street Improvements have been constructed in general compliance with the approved design plans and specifications as filed with El Paso County.

Respectfully submitted,  
Kiowa Engineering Corporation



Andrew W. McCord, P.E.  
Colorado No. 25057  
For and on behalf of Kiowa Engineering Corporation

AWMc/awmc  
Kiowa File: 19016



**As-Built Comparison to FDR Report**

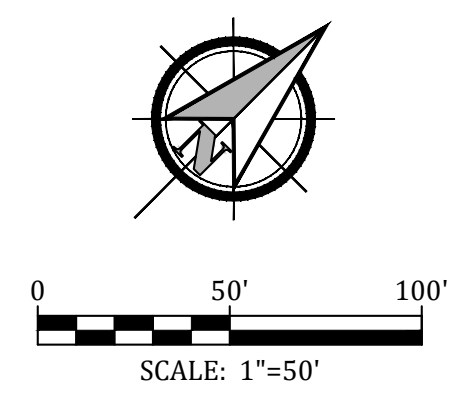
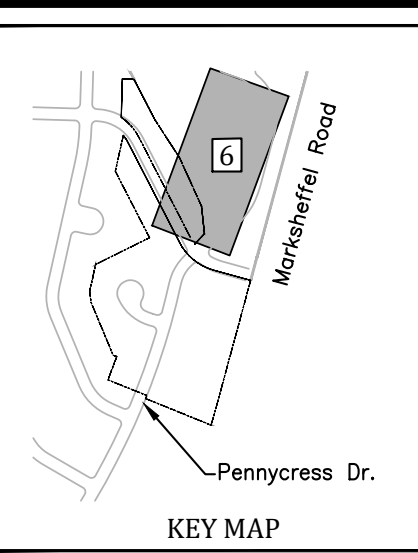
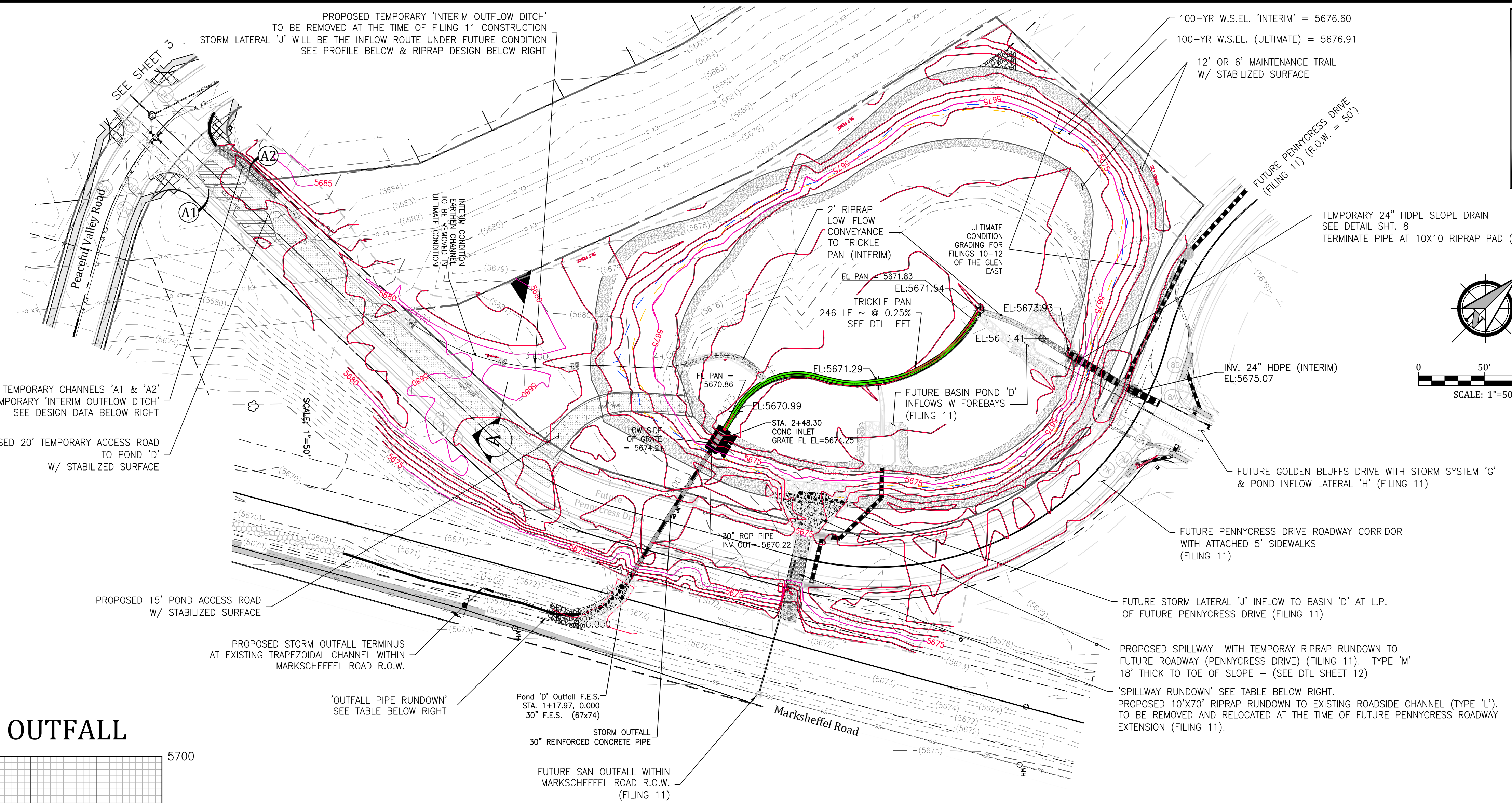
Project: The Glen No 10 EDB 'D'  
Date: 4/22/2022  
By: MJK

Elev	Report	As-Built	Cum. Rpt	Cum. AB	Delta
5670.67	26	26	0		
5671	84	42	17	11	-35.29%
5672	5906	8906	2954	4396	48.82%
5673	31084	41760	21508	29818	38.64%
5674	63050	68930	68575	85163	24.19%
5675	69093	75612	134646	157434	16.92%
5676	74861	81042	206,623	235761	14.10%
5677	81249	87734	284,678	320149	12.46%
5678	88132	97318	369,369	412675	11.72%
5679	96541	98000	461,705	510334	10.53%
5679.14	98509	98509	475,359	524089	10.25%

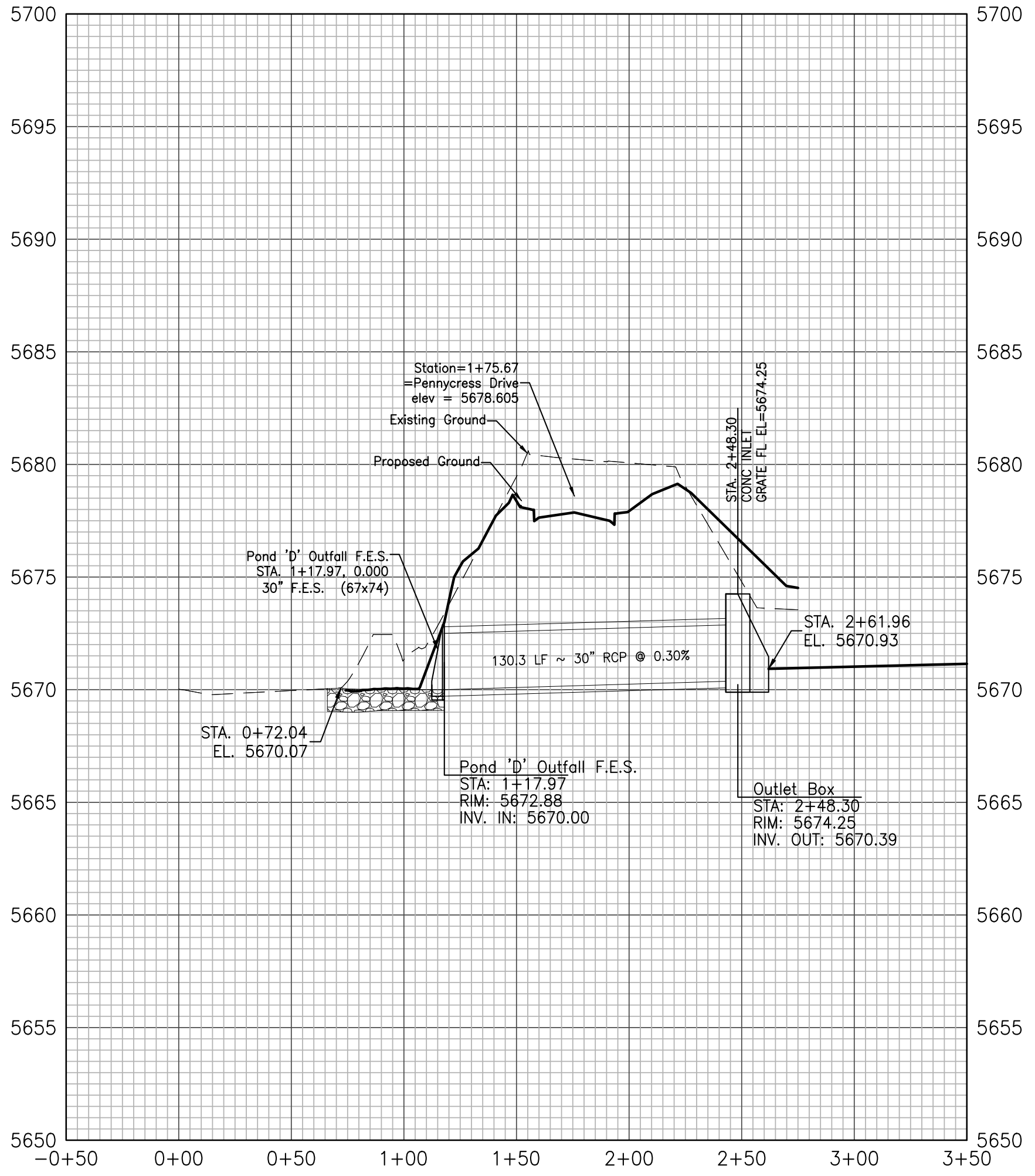
**Engineering Record Drawings**

"I hereby affirm that the improvements for The Glen at Widefield Filing No. 10 have been constructed in substantial compliance with the Construction Plans approved by El Paso County."

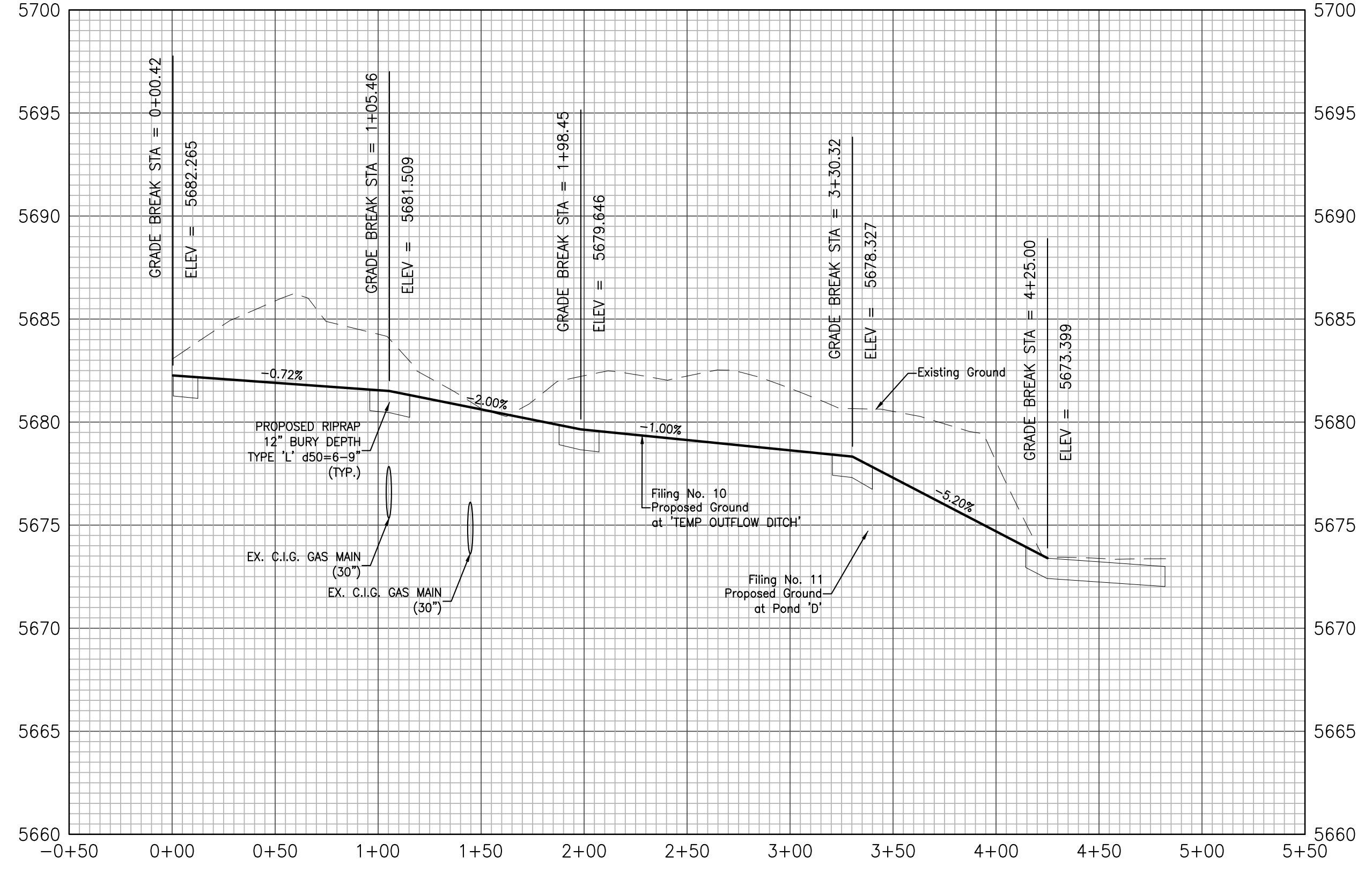
Andrew W. McCord, PE \_\_\_\_\_ Date \_\_\_\_\_



**PROFILE VIEW OF STORM OUTFALL**



**PROFILE VIEW OF TEMP OUTFLOW DITCH**

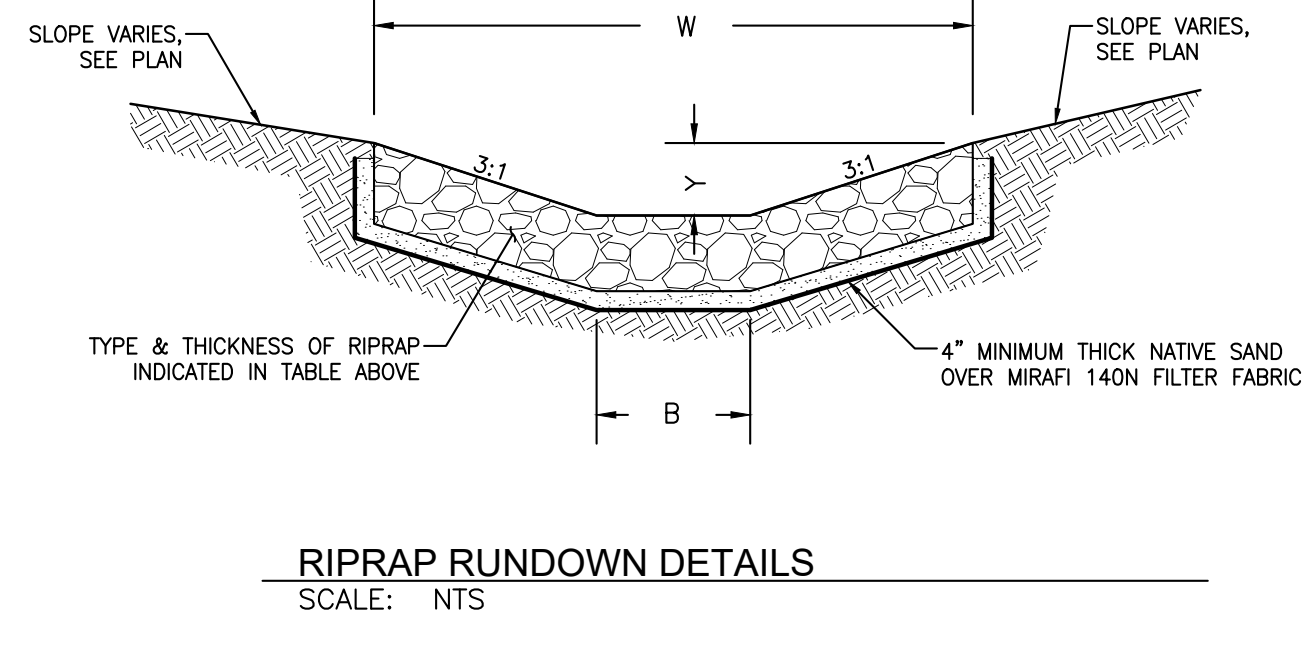


**CLASSIFICATION AND GRADATION OF RIPRAP**

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	d50* (INCHES)
TYPE VL	70-100	12	
	50-70	9	
	35-50	6	6**
	2-10	2	
TYPE L	70-100	15	
	50-70	12	
	35-50	9	9**
	2-10	3	
TYPE M	70-100	21	
	50-70	18	
	35-50	12	12**
	2-10	4	

\* d50=MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.  
\*\* MIX VL, L AND M RIPRAP WITH 35% TOPSOIL (BY VOLUME) AND BURY WITH 4-6 INCHES OF TOPSOIL, ALL VIBRATION COMPACTED & REVEGETATE. (TABLE MD-7: CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP. UDFCD, DRAINAGE CRITERIA MANUAL, VOL. 1)

LOCATION	B	W	Y	TYPE	DEPTH
'SPILLWAY RUNDOWN'	9'	27'	1.6'	'M'	18"
'OUTFALL PIPE RUNDOWN'	4'	10'	1.3'	'M'	18"
'INTERIM OUTFLOW DITCH'	4'	10'	1.2'	'L'/Soil	12"
'INTERIM POND BOTTOM 'SOUTH CURBLINE FLOWS''	0'	4.6'	0.57'	'L'/Soil	12"
'INTERIM POND BOTTOM 'NORTH CURBLINE FLOWS''	4'	9.3'	0.67'	'L'/Soil	12"
'INTERIM POND BOTTOM 'LOW-FLOW CONVEYANCE''	0'	4'	0.5'	'L'/Soil	6"



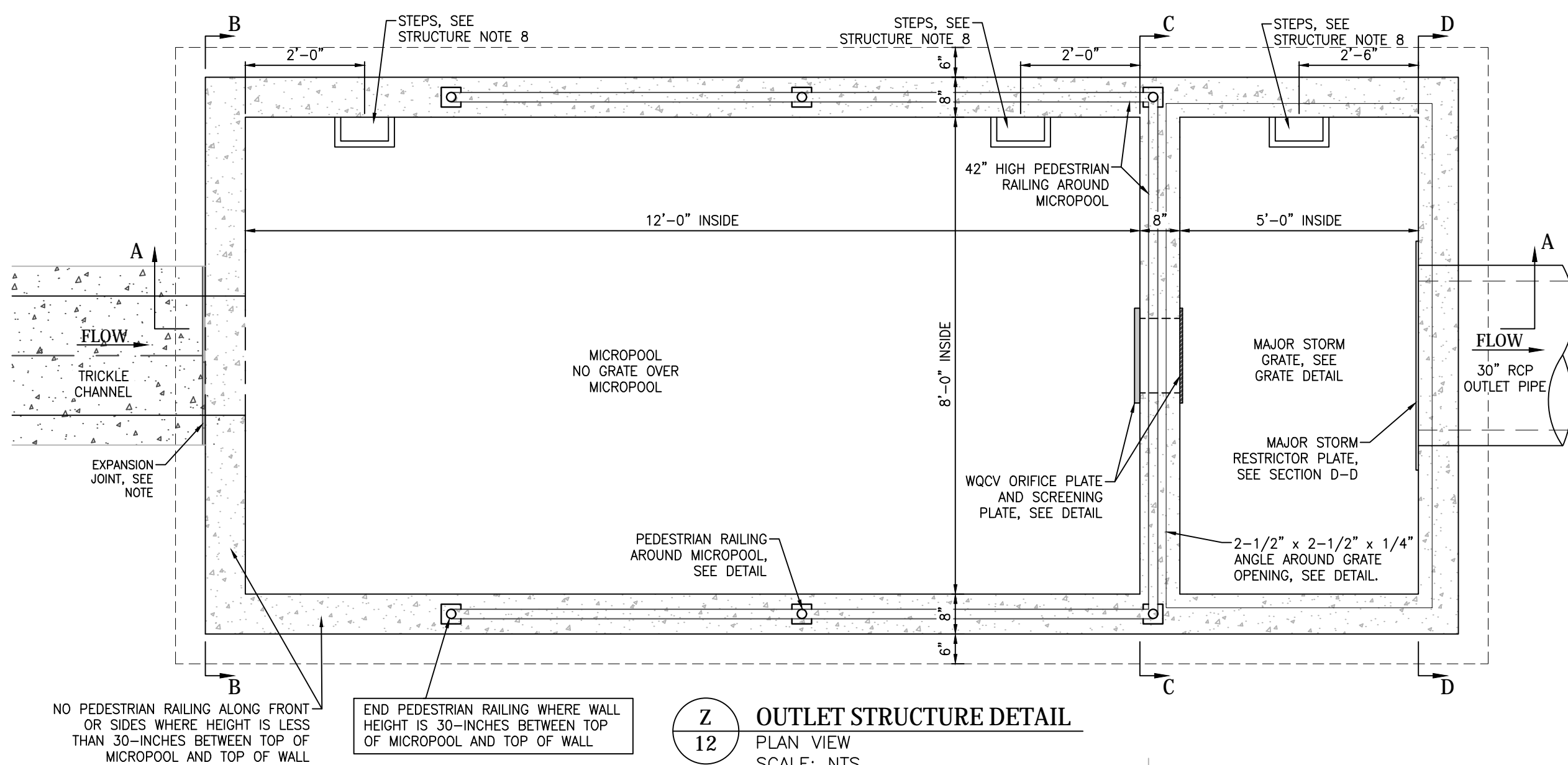
**Kiowa**  
Engineering Corporation  
1604 South 21st Street  
Colorado Springs, Colorado 80904  
(719) 630-7342

**W**  
WIDEFIELD  
Investment Group

**GLEN AT WIDEFIELD NO. 10**  
Proposed Basin 'D'  
Filing 10 Portions Only  
EL PASO, COUNTY, COLORADO

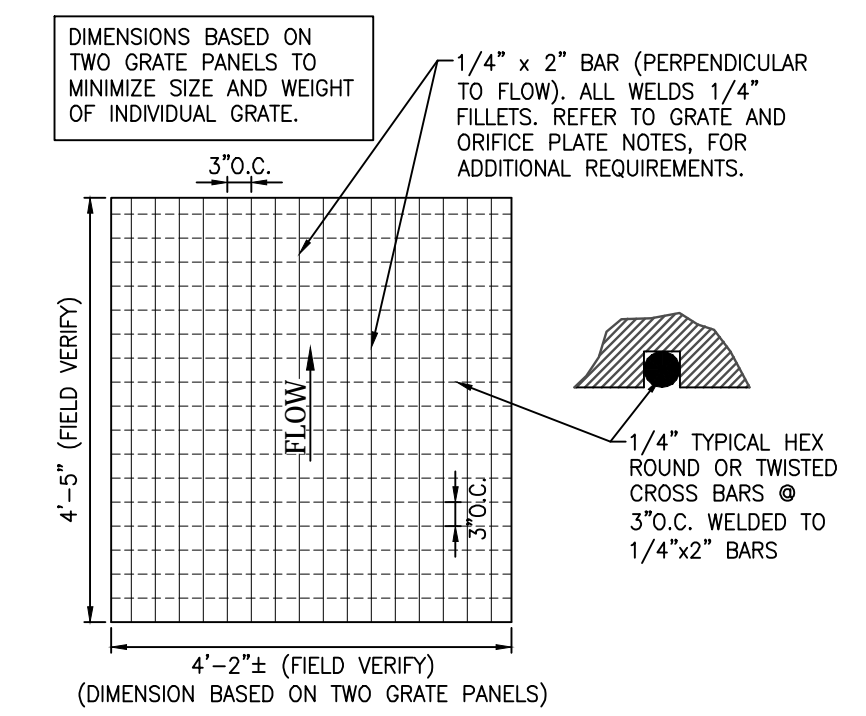
Project No.: 19016  
Date: Nov. 23, 2020  
Design: MK  
Drawn: MJK  
Check: AWMc  
Revisions:

SHEET  
**11**  
13 of 17 Sheets

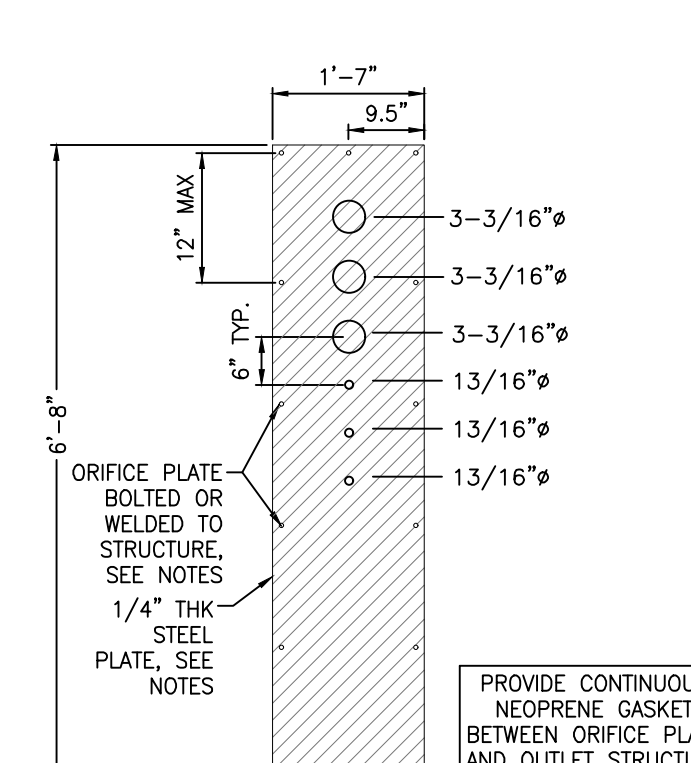


**Z OUTLET STRUCTURE DETAIL**  
PLAN VIEW  
SCALE: NTS

- STRUCTURE NOTES:**
- PRIOR TO CONSTRUCTION, CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
  - GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPICE 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.
  - MIN. SPICE LENGTH: #4: 1'-3", #5: 1'-7", #6: 2'-0"
  - CONCRETE FOR THE OUTLET STRUCTURE AND FOREBAYS SHALL BE CDOT CLASS D CONCRETE.
  - EXPANSION JOINT MATERIAL SHALL MEET ASHTO 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.
  - ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4-INCH CHAMFER UNLESS OTHERWISE NOTED.
  - BACKFILLING AGAINST WALLS SHALL NOT COMMENCE UNTIL CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH.
  - SUBGRADE TO BE 12" THK CLEAN FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM M698 UNDER STRUCTURES.
  - OUTLET STRUCTURE STEPS SHALL CONFORM TO ASHTO M199.
  - FOREBAY: CONSTRUCTION JOINTS SHALL BE INSTALLED AT 10' O.C. MAXIMUM. THE JOINTS SHALL BE SEALED WITH A JOINT SEALANT.

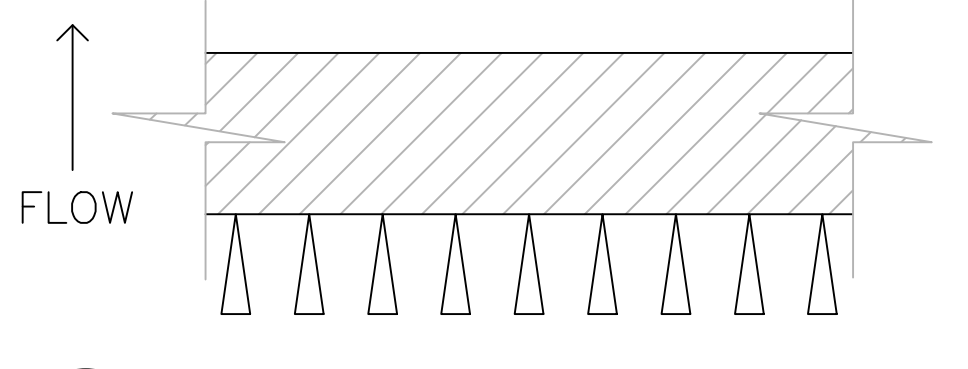


**E MAJOR STORM GRATE DETAIL**  
SCALE: NTS

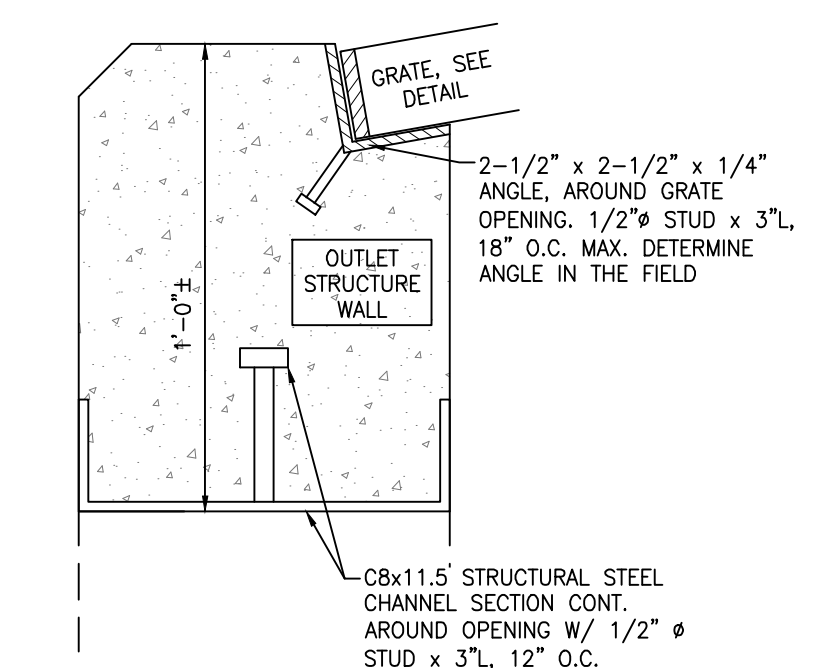


**F WQCV ORIFICE PLATE**  
SCALE: NTS

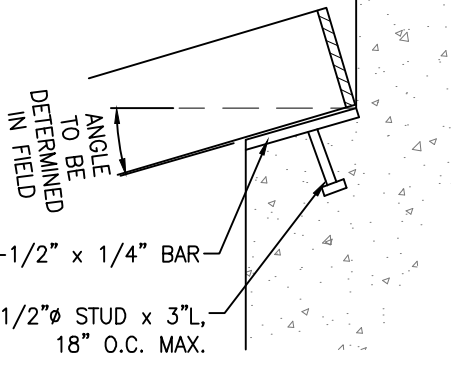
- WQCV WELL-SCREEN NOTES:**
- WELL-SCREEN SHALL BE STAINLESS STEEL AND ATTACHED BY INTERMITTENT WELDS OR STAINLESS STEEL BOLTS ALONG EDGE OF THE MOUNTING FRAME.
  - WQCV WELL SCREEN:
    - TYPE OF SCREEN: STAINLESS STEEL #93 VEE WIRE (JOHNSON VEE WIRE TM STAINLESS STEEL SCREEN OR EQUIVALENT WITH 60% 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



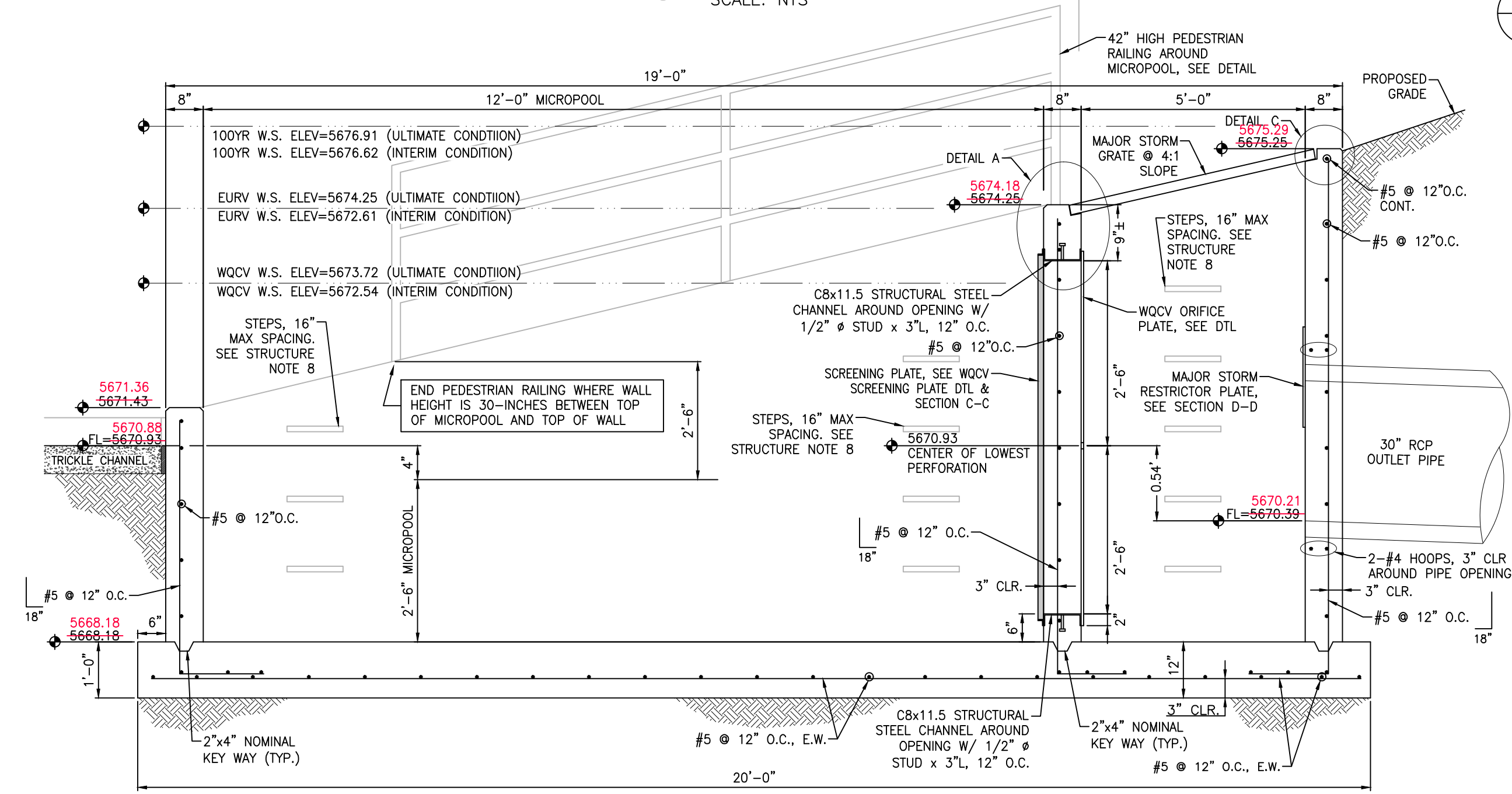
**K WQCV SCREENING PLATE**  
SCALE: NTS



**L DETAIL A**  
SCALE: NTS

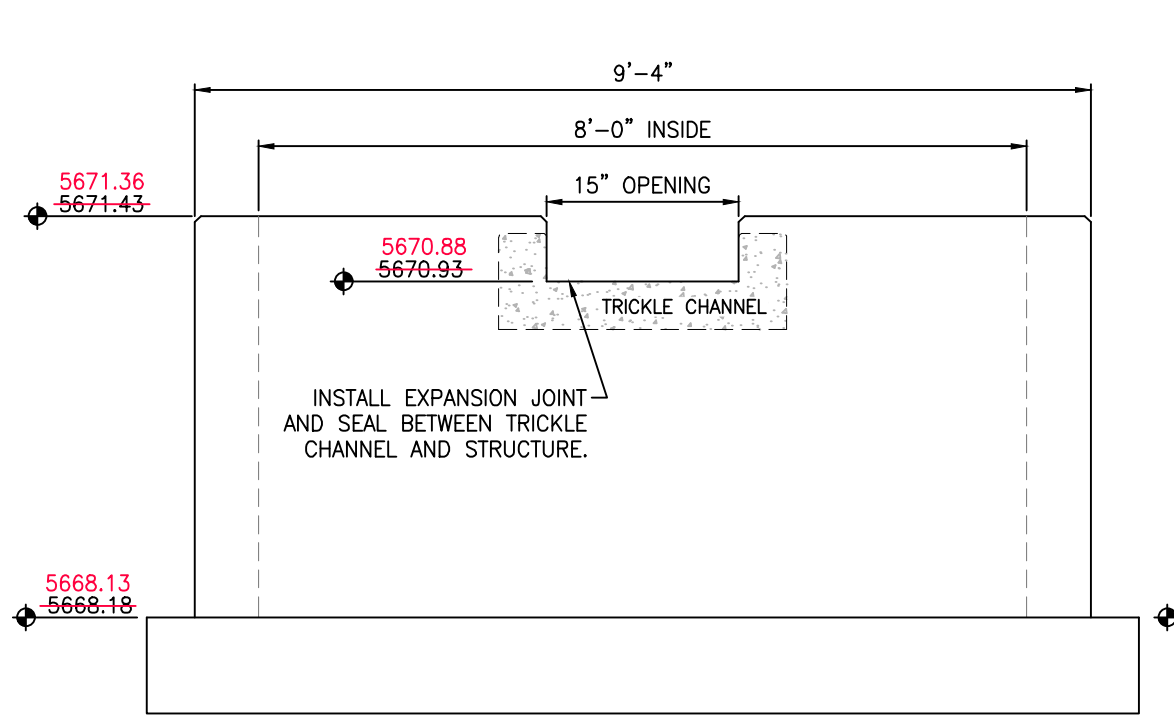


**M DETAIL C**  
SCALE: NTS

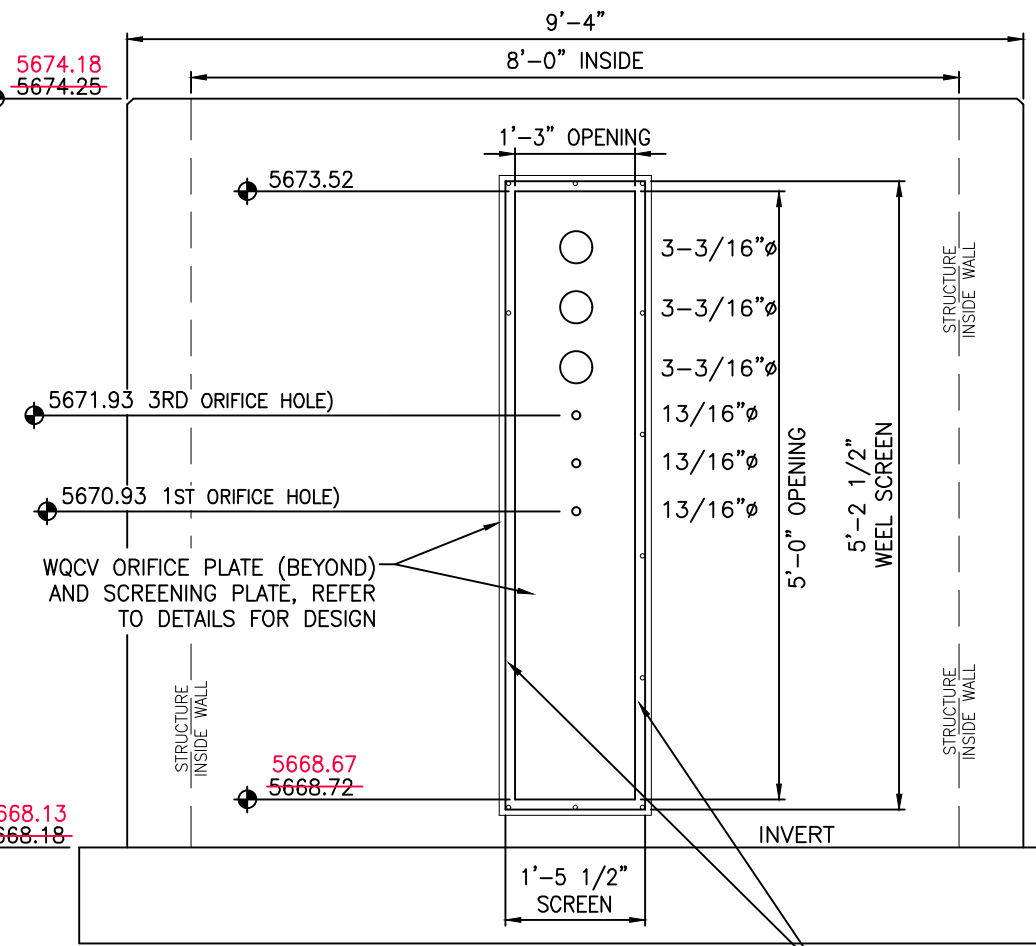


**A SECTION A-A**  
SCALE: NTS

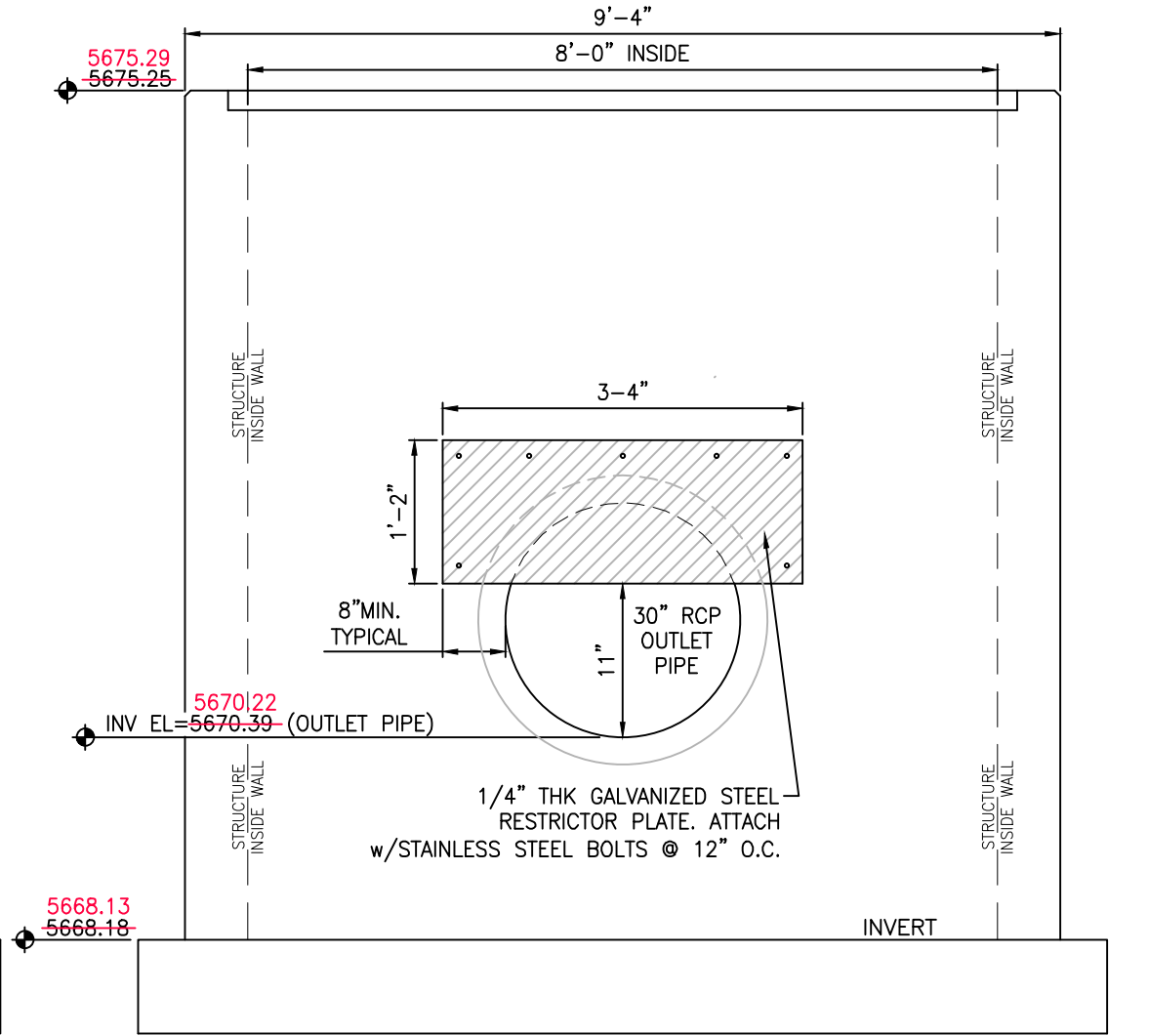
- GRATE AND ORIFICE PLATE NOTES:**
- GRATES AND ORIFICE PLATES SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE. GRATES TO BE BOLTED DOWN TO OUTLET STRUCTURE 18" O.C.
  - GRATES AND ORIFICE PLATES SHALL BE STAINLESS STEEL, ALUMINUM OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND HOT POWDER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



**B SECTION B-B**  
SCALE: NTS

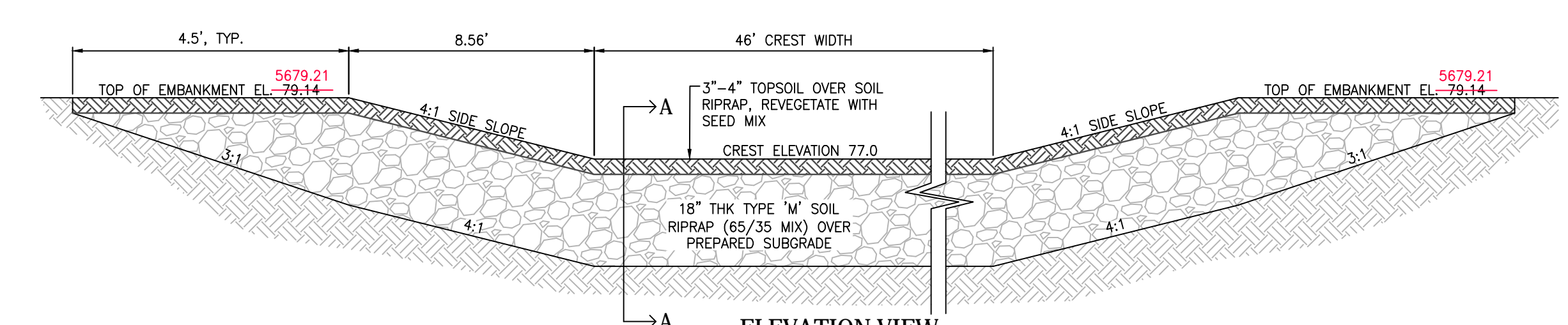


**C SECTION C-C**  
SCALE: NTS

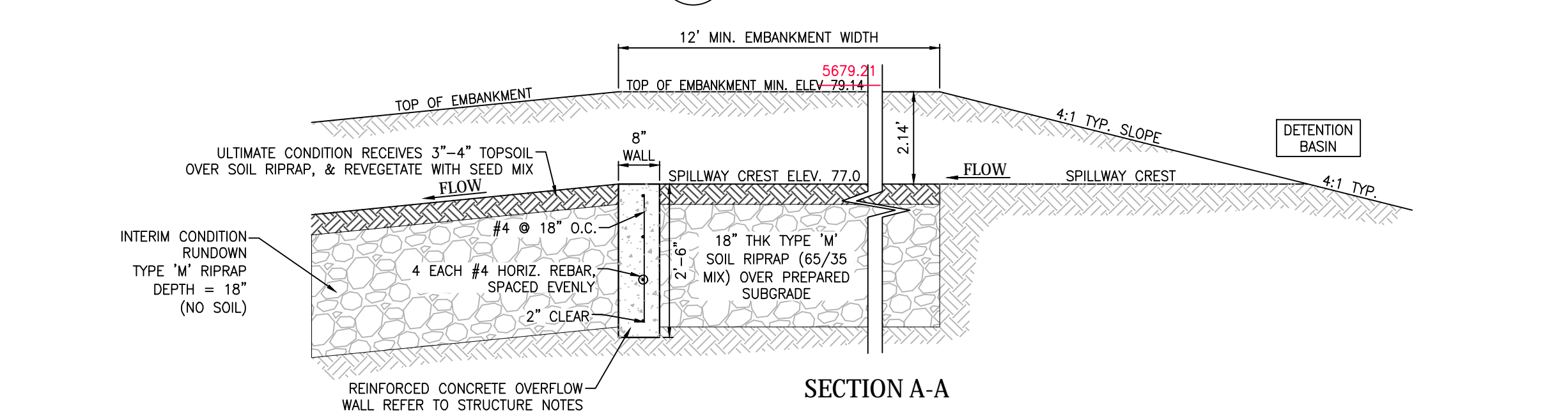


**D SECTION D-D**  
SCALE: NTS

INTERIM CONDITION  
TO BE MODIFIED AT THE TIME OF FUTURE DEVELOPMENT

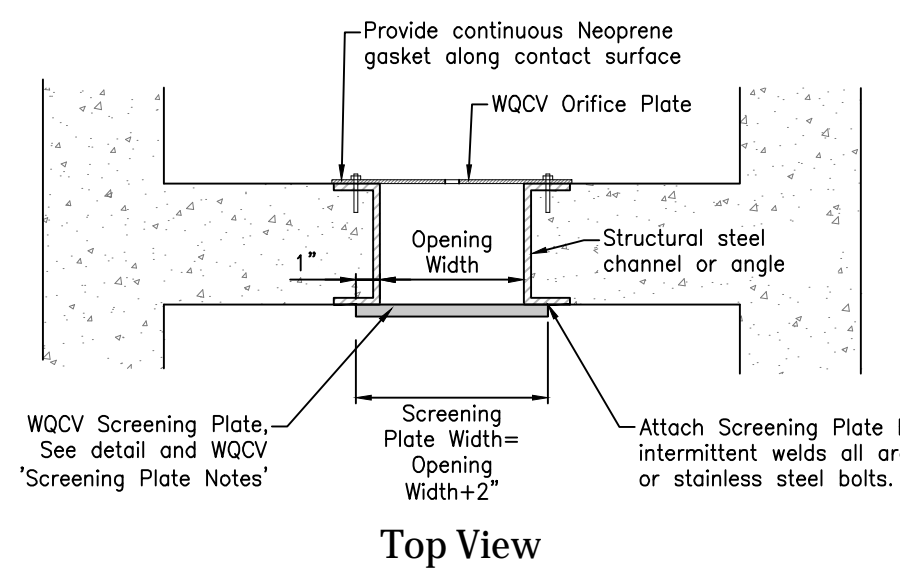


**O ELEVATION VIEW EMERGENCY SPILLWAY**  
SCALE: NTS



**A SECTION A-A**

- Screening Plate Notes:**
- Orifice plates shall be mounted using stainless steel hardware.
  - Screen Grate shall be hot-dipped galvanized steel.
  - Field verify screen dimension prior to fabrication.



**J WQCV ORIFICE PLATE AND SCREENING PLATE**  
SCALE: NTS

**Engineering Record Drawings**

"I hereby affirm that the improvements for The Glen at Widefield Filing No. 10 have been constructed in substantial compliance with the Construction Plans approved by El Paso County."

Andrew W. McCord, PE \_\_\_\_\_ Date \_\_\_\_\_

Project No.:	19016
Date:	Nov. 23, 2020
Design:	MJK
Drawn:	MJK
Check:	AWMc
Revisions:	