

SHEET		ESTATES AT CATHEDRAL PINES		H-SCALE	N/A	No.	REVISION	BY	DATE
1		COVER SHEET		V-SCALE	N/A				
OF				DATE	05/15/24				
8				DESIGNED BY	SAM				
				DRAWN BY	SAM				
				CHECKED BY					
JOB NO.		25260.00							



## LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE		
CENTERLINE		
CITY LIMITS		
WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
MASONRY FENCE		
GUARDRAIL		
CONC. BARRIER		
CABLE TV		
ELECTRIC		
FIBER OPTIC		
GAS MAIN		
IRRIGATION MAIN		
OIL/PETRO. MAIN		
OVERHEAD UTILITY		
SANITARY SEWER		
STORM DRAIN		
TELEPHONE		
WATER MAIN		
RAW WATER LINE		
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR		
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)		
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		
SILT FENCE		
100 YEAR FLOODPLAIN		
500 YEAR FLOODPLAIN		
FLOODWAY		
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		

## UTILITIES LEGEND

	EXISTING	PROPOSED
<b>STORM SEWER</b>		
MANHOLE		
STORM INLET		
AREA INLET - SQUARE		
AREA INLET - ROUND		
FLARED END SECTION		
RIPRAP		
<b>SANITARY SEWER</b>		
LINE MARKER		
SERVICE MARKER		
CLEAN-OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
<b>WATER LINE</b>		
LINE MARKER		
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW-OFF VALVE		
WELL		
METER		
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW-OFF ASSEMBLY		
<b>GAS LINE</b>		
MARKER		
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
<b>DRY UTILITIES</b>		
CABLE TV MARKER		
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER		
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER-OPTIC MARKER		
IRRIGATION PEDESTAL		
TELEPHONE MARKER		
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		

## MISC. UTILITIES

VENT PIPE		
TEST HOLE DESIGNATOR		

## STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 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.
- 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).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOIL AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND BRIDGE CONSTRUCTION
  - CDOT M&S STANDARDS
- 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 VERSIONS 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.
- 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.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES 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.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 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.

## GENERAL CONSTRUCTION NOTES:

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
- ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY PCD.
- ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASF), OR TOP OF INLET OR BOX (TOB).
- ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K - 1.2C.
- ALL INTERSECTION ACCESSSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL IN THIS AREA.
- ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
- ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.

## SIGNING AND STRIPING NOTES:

- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
- ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
- ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
- STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
- ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
- ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
- ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
- THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

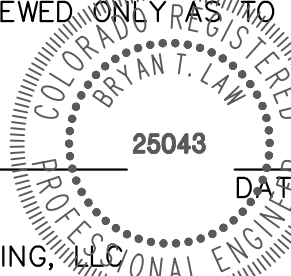


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## ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC



7/12/24

ESTATES AT CATHEDRAL PINES

LEGEND AND GENERAL NOTES

SHEET 2 OF 8

JOB NO. 25260.00

PREPARED FOR

VILLAGREE DEVELOPMENT LLC

5710 VESSEY RD

COLORADO SPRINGS, CO 80908

GREGG & ELAINE CAWLFIELD

(719) 413-6900

J.R. ENGINEERING

A Westman Company



Central 303-740-9888 • Colorado Springs 719-583-2583  
Fort Collins 970-491-9888 • www.jrengineering.com

BY

DATE

REVISION

No.

N/A

N/A

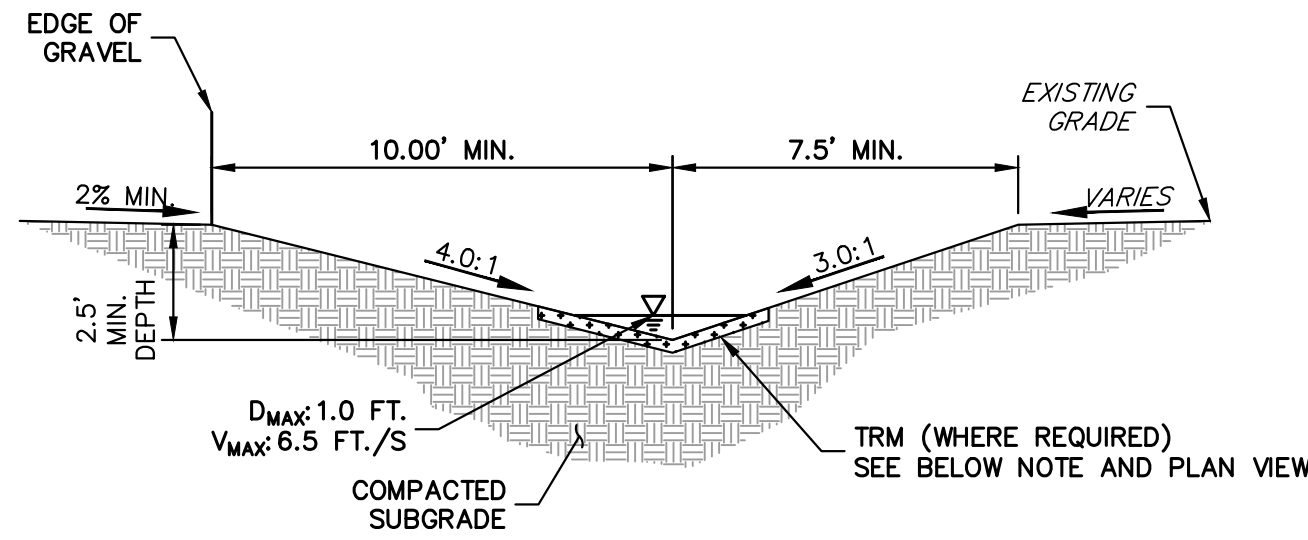
05/15/24

SAM

SAM

CHECKED BY

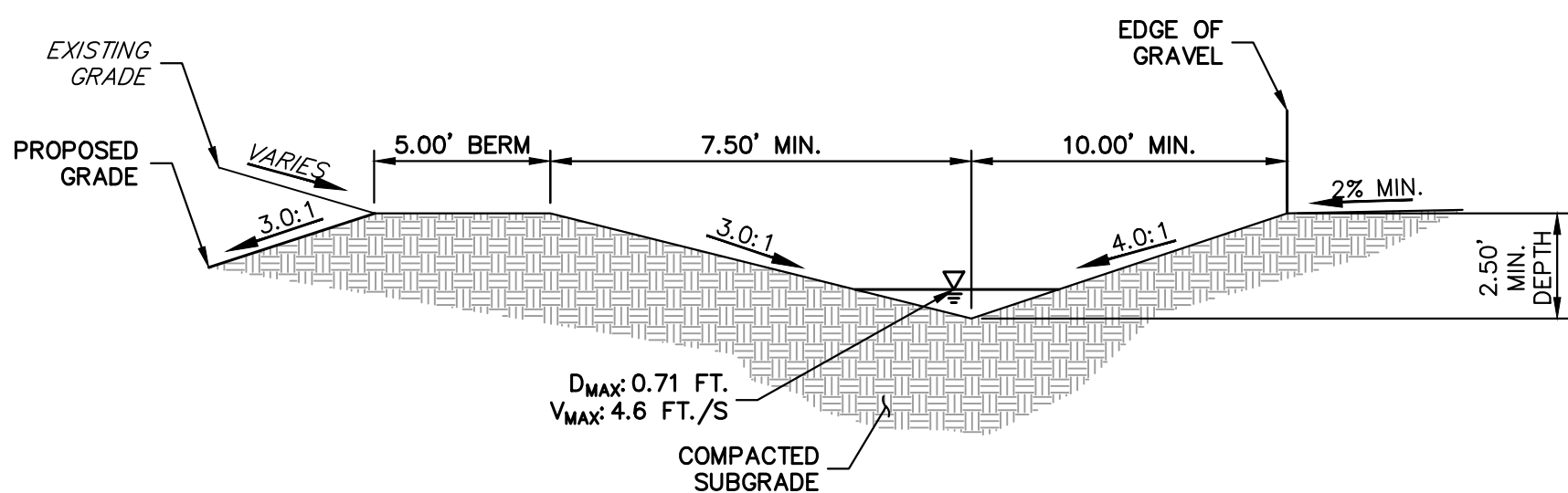




SWALE SECTION BASIN D

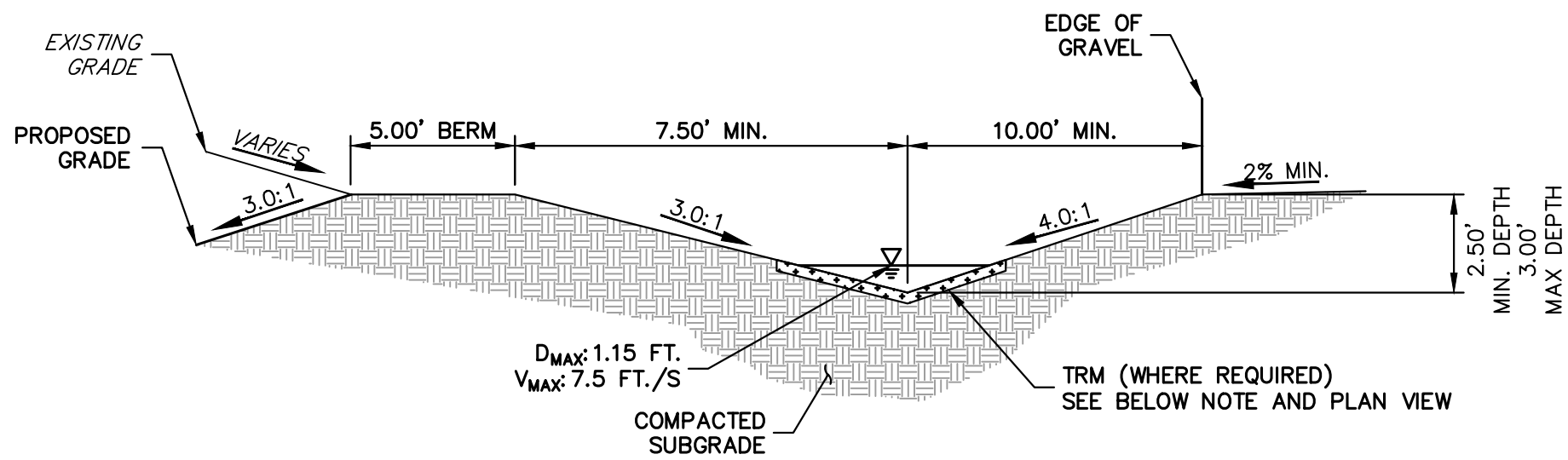
N.T.S.

SC250 VMAX (OR APPROVED EQUIVALENT) PERMANENT TURF REINFORCEMENT MAT (TRM) IS REQUIRED TO BE INSTALLED 70' NORTH OF THE ROAD HIGH POINT AND CONTINUE FOR 400' (SEE GEC PLAN FOR LOCATIONS)



SWALE SECTION BASIN E

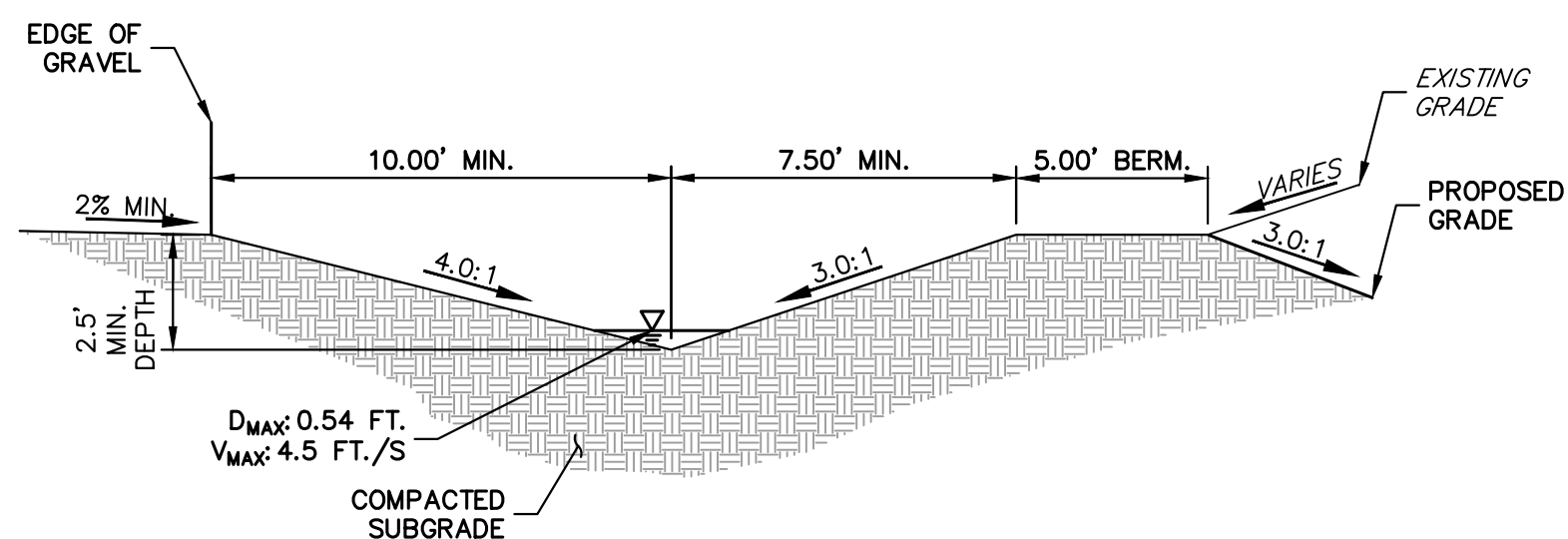
N.T.S.



SWALE SECTION BASIN L

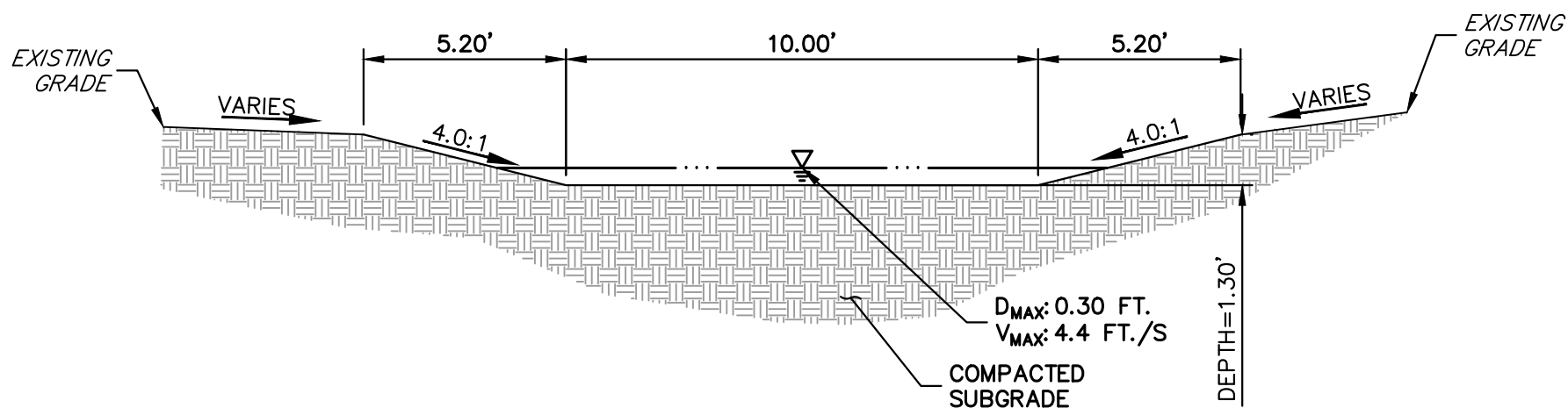
N.T.S.

SC250 VMAX (OR APPROVED EQUIVALENT) PERMANENT TURF REINFORCEMENT MAT (TRM) IS REQUIRED TO BE INSTALLED 60' SOUTH OF THE ROAD HIGH POINT AND CONTINUE FOR 280' (SEE GEC PLAN FOR LOCATIONS)



SWALE SECTION BASIN M

N.T.S.



SWALE SECTION POND A OUTFALL

SCALE: N.T.S.



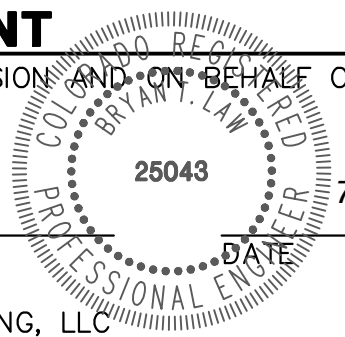
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ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

*Bryan T. Law*

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC



ESTATES AT CATHEDRAL  
PINES

TYPICAL SECTIONS

SHEET 3 OF 8

JOB NO. 25260.00

PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
(719) 413-6900

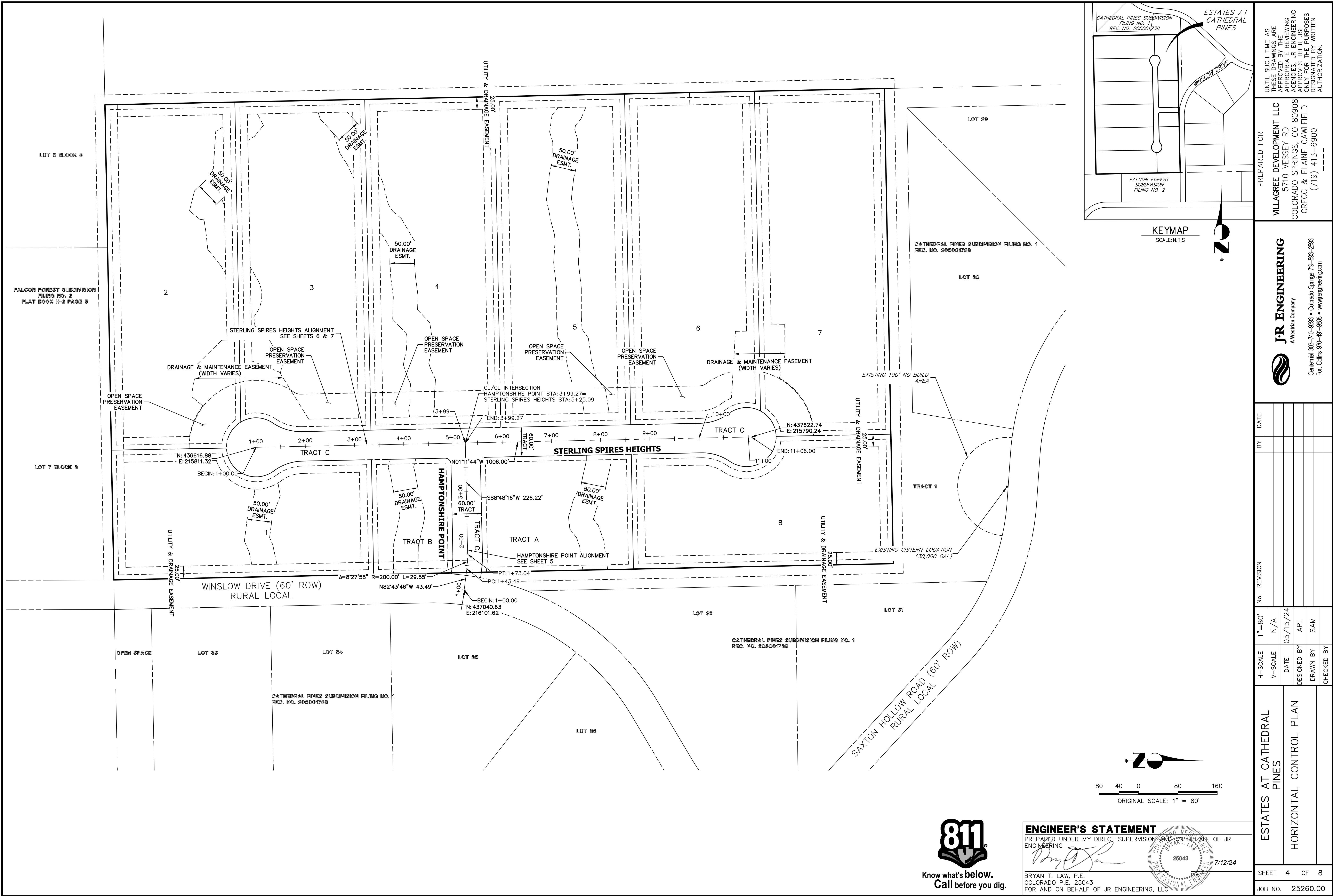
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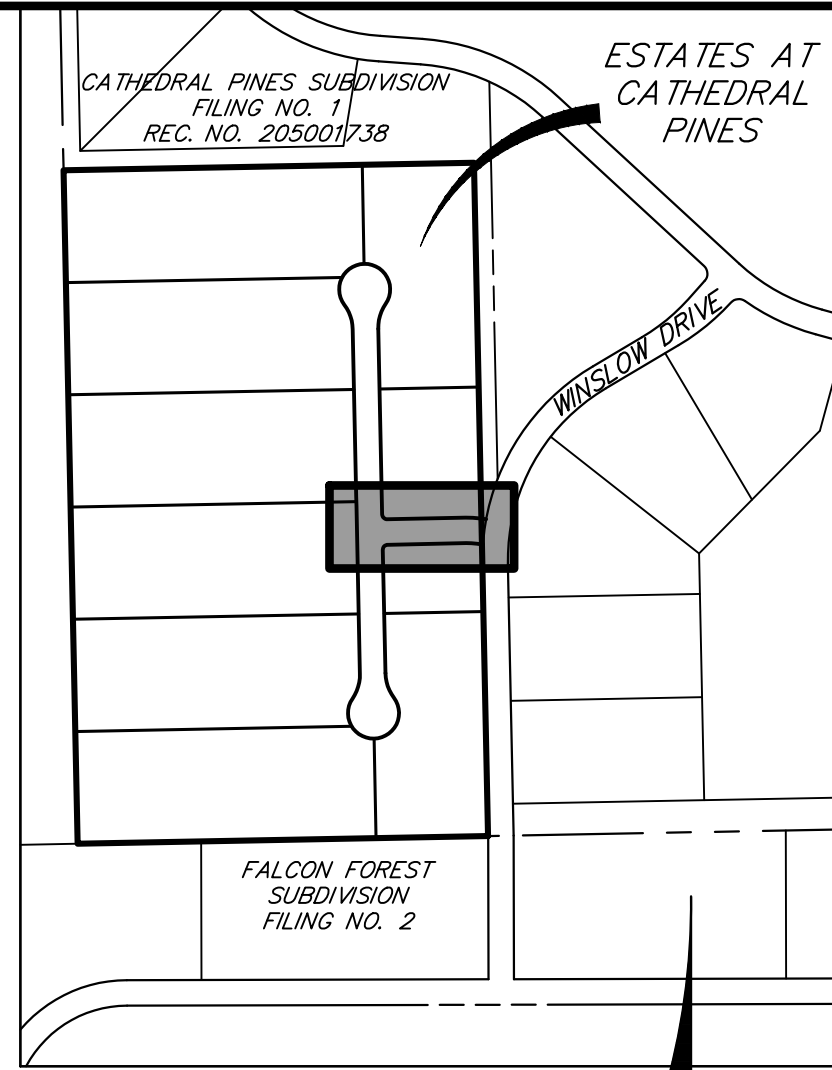
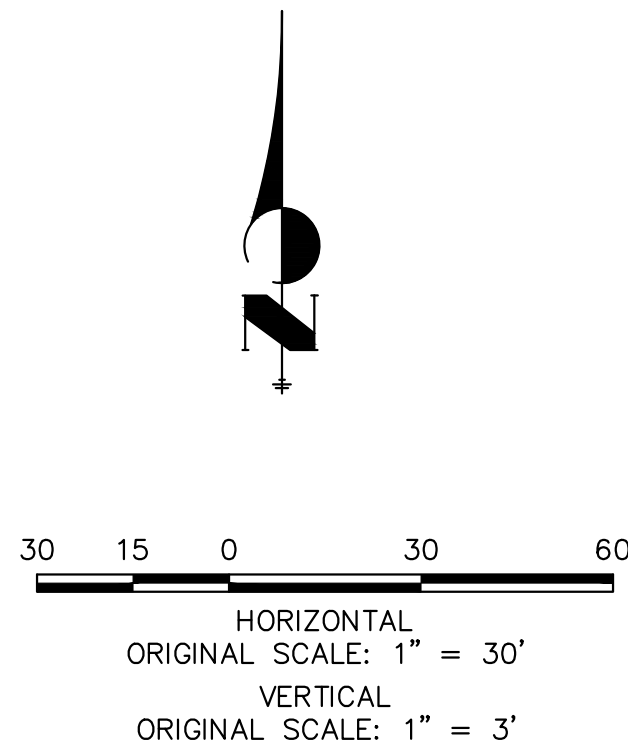
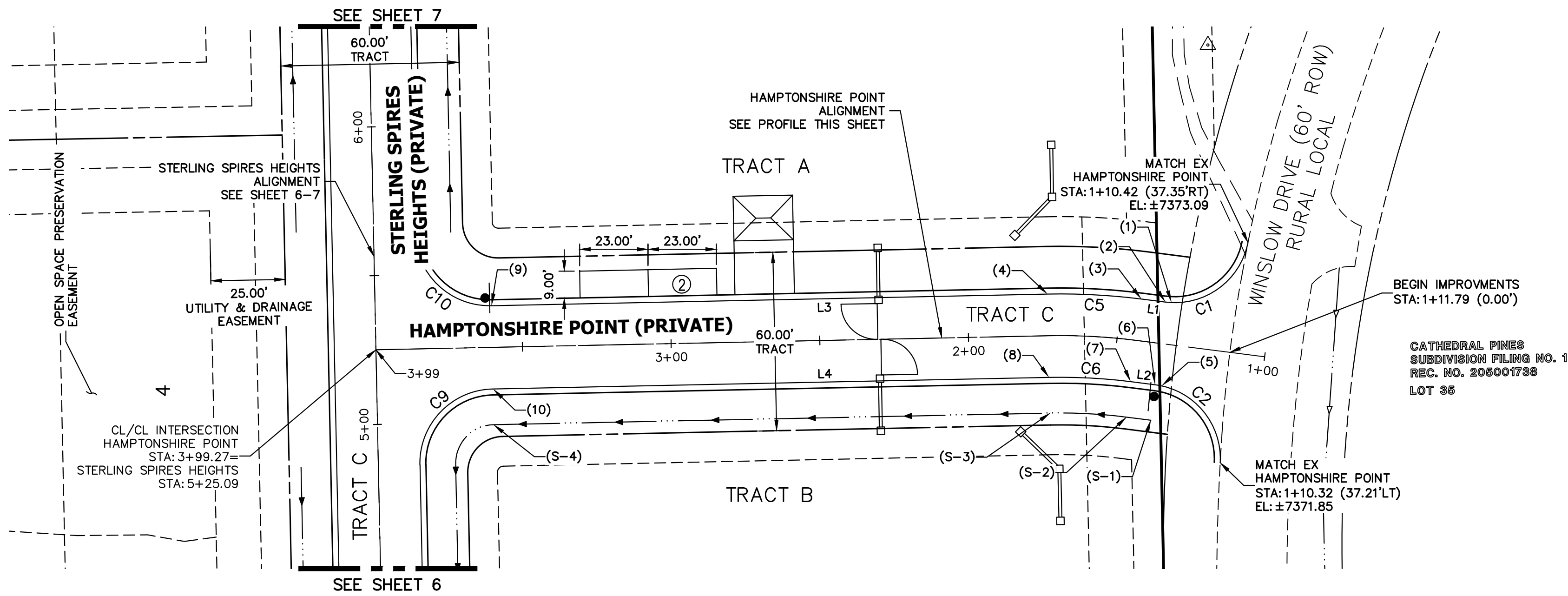
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AGENCIES, OR ENGINEERING  
APPROVES THEIR USE  
FOR ANY OTHER PURPOSES  
DESIGNATED BY WRITTEN  
AUTHORIZATION.





ESTATES AT CATHEDRAL PINES		HORIZONTAL CONTROL PLAN		SHEET 4 OF 8		JOB NO. 25260.00	
H-SCALE		V-SCALE		DATE		DESIGNED BY	
1"=80'		N/A		05/15/24		APL	
BY		DATE		NO.		REVISION	





UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

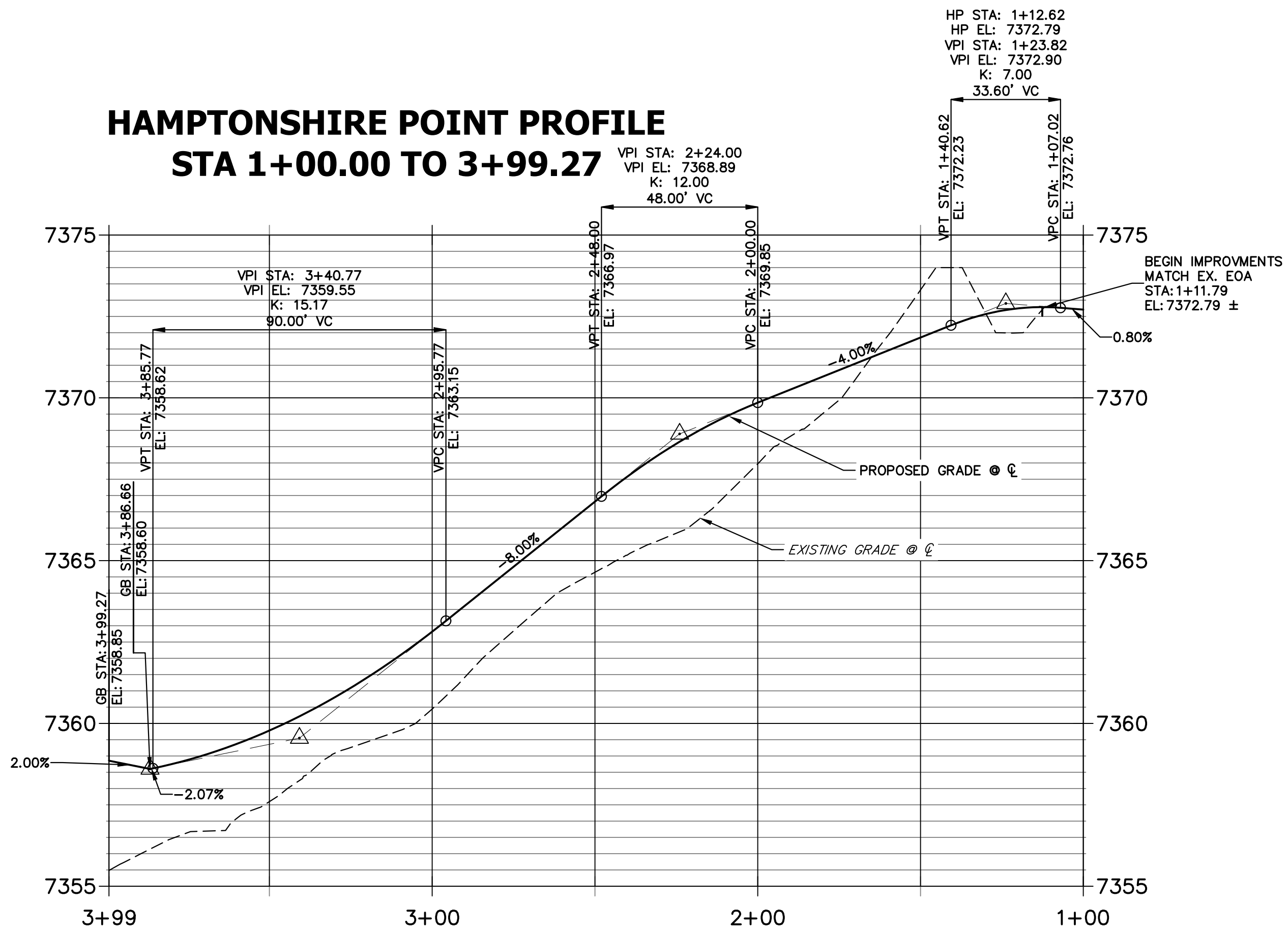
PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
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### HAMPTONSHIRE POINT PROFILE STA 1+00.00 TO 3+99.27



LINE TABLE		
LINE	BEARING	DISTANCE
L1	S82°43'46"E	8.12'
L2	S82°43'46"E	8.23'
L3	S88°48'16"W	187.22'
L4	N88°48'16"E	187.04'

CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	
C1	86°12'34"	25.00'	37.62'	
C2	85°54'02"	25.00'	37.48'	
C5	8°27'58"	214.00'	31.62'	
C6	8°27'58"	186.00'	27.48'	
C9	90°25'32"	25.00'	39.46'	
C10	85°45'49"	25.00'	37.42'	

POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(1)	1+33.30	14.09' (RT)	HAMPTONSHIRE POINT	7372.79	HIGH PT
(2)	1+35.37	14.00' (RT)	HAMPTONSHIRE POINT	7372.14	PT
(3)	1+43.49	14.00' (RT)	HAMPTONSHIRE POINT	7371.83	PC
(4)	1+73.04	14.00' (RT)	HAMPTONSHIRE POINT	7370.65	PT
(5)	1+33.21	14.08' (LT)	HAMPTONSHIRE POINT	7372.73	HIGH PT
(6)	1+35.26	14.00' (LT)	HAMPTONSHIRE POINT	7372.14	PT
(7)	1+43.49	14.00' (LT)	HAMPTONSHIRE POINT	7371.83	PC
(8)	1+73.04	14.00' (LT)	HAMPTONSHIRE POINT	7370.65	PT
(9)	3+60.27	14.00' (RT)	HAMPTONSHIRE POINT	7359.08	PC
(10)	3+60.27	14.00' (LT)	HAMPTONSHIRE POINT	7359.08	PC
(S-1)	1+35.26	26.00' (LT)	HAMPTONSHIRE POINT	7369.60	BEGIN SWALE SECTION L
(S-2)	1+43.49	26.00' (LT)	HAMPTONSHIRE POINT	7369.29	SWALE PC
(S-3)	1+73.04	26.00' (LT)	HAMPTONSHIRE POINT	7368.11	SWALE PT

### NOTES

- SEE SHEET 3 FOR TYPICAL SWALE SECTIONS.
- SEE STORM & POND PLANS BY JR ENGINEERING FOR ALL CULVERT & STORM SEWER INFORMATION.
- ALL POINTS ARE EDGE OF ASPHALT (EOA) UNLESS OTHERWISE SPECIFIED.



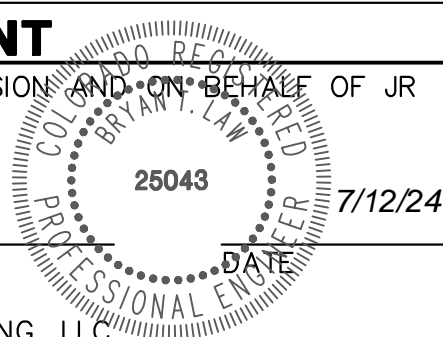
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### ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

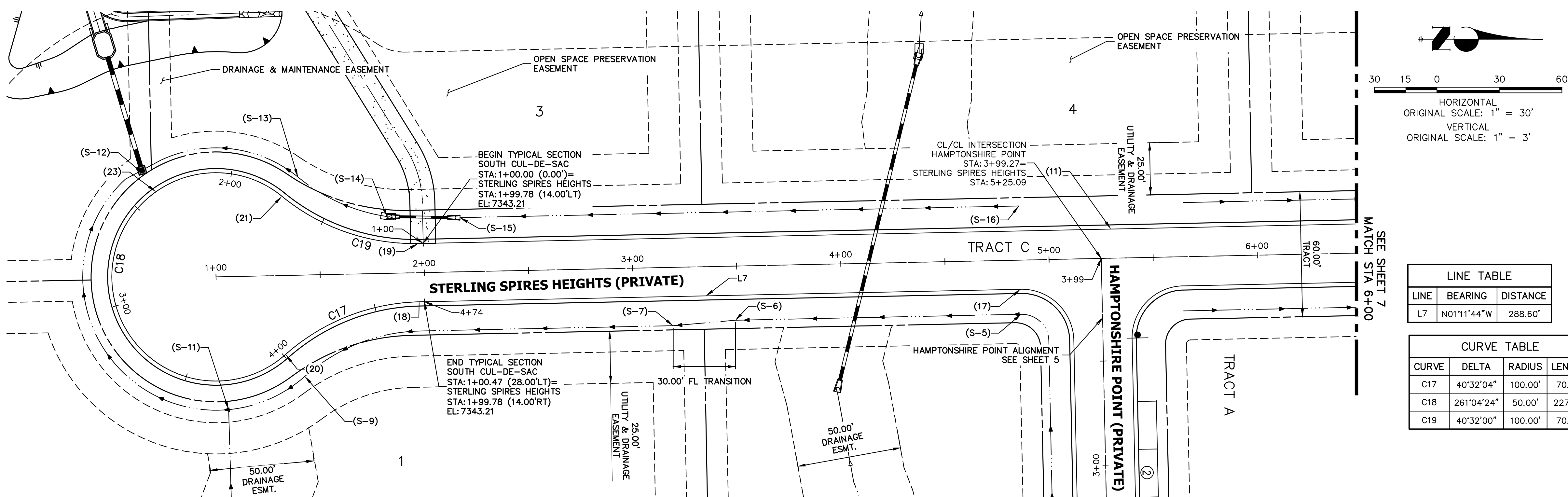
*Bryan T. Law*

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC



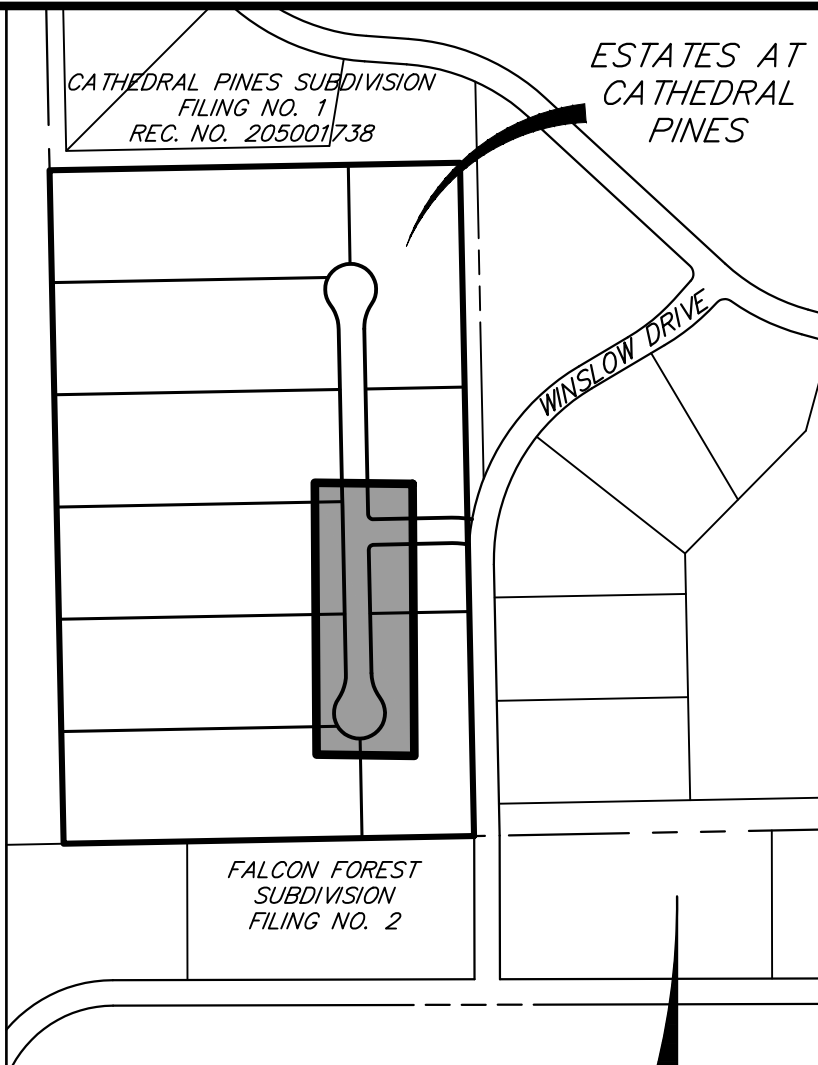
BY	DATE	No.	REVISION	H-SCALE 1"=30'	V-SCALE 1"=3'	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	ESTATES AT CATHEDRAL PINES	STREET IMPROVEMENT PLANS	SHEET 5 OF 8	JOB NO. 25260.00
						05/15/24	APL	SAM					





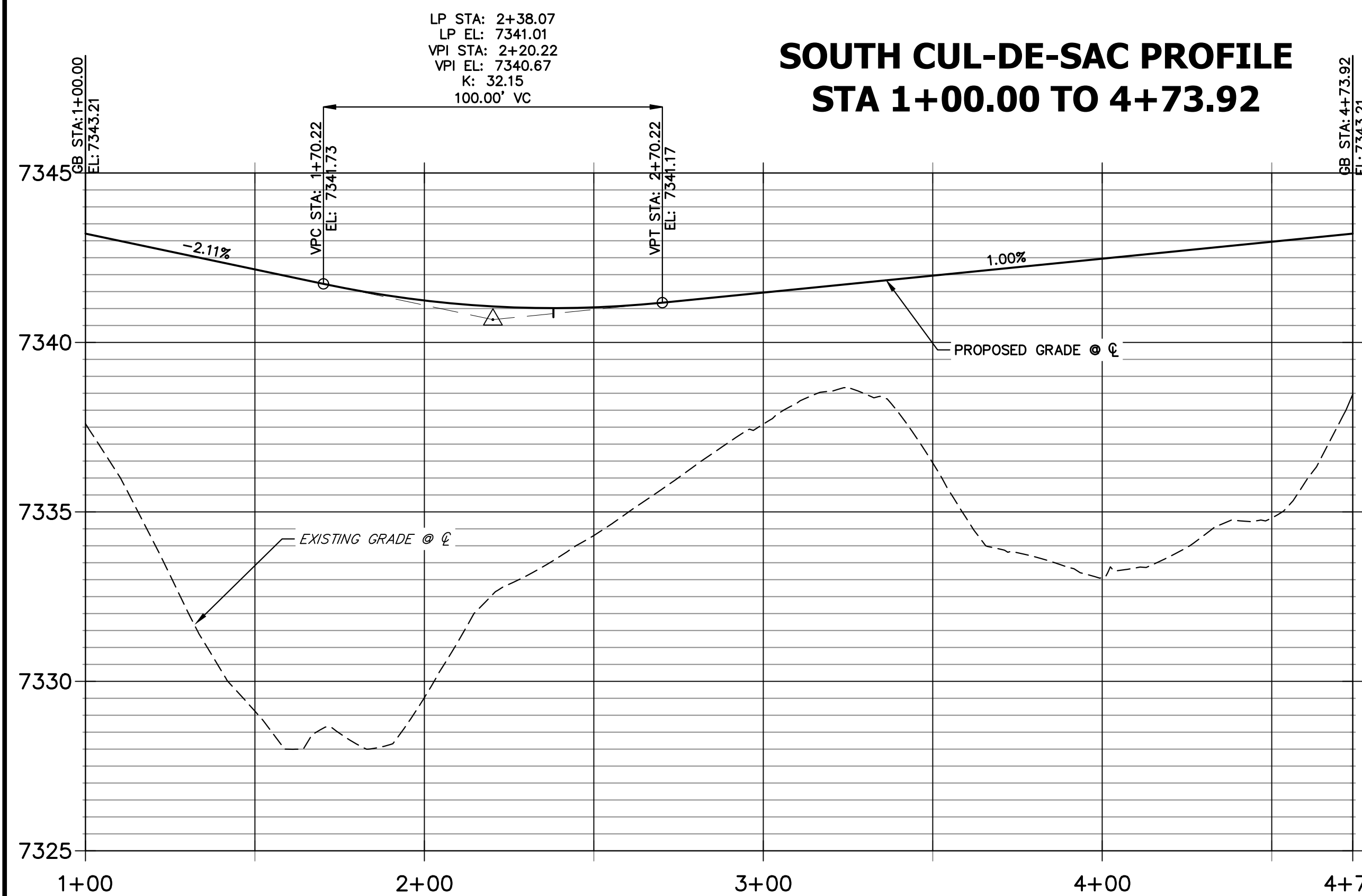
LINE TABLE		
LINE	BEARING	DISTANCE
L7	N01°11'44"W	288.60'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C17	40°32'04"	100.00'	70.75'
C18	261°04'24"	50.00'	227.83'
C19	40°32'00"	100.00'	70.75'



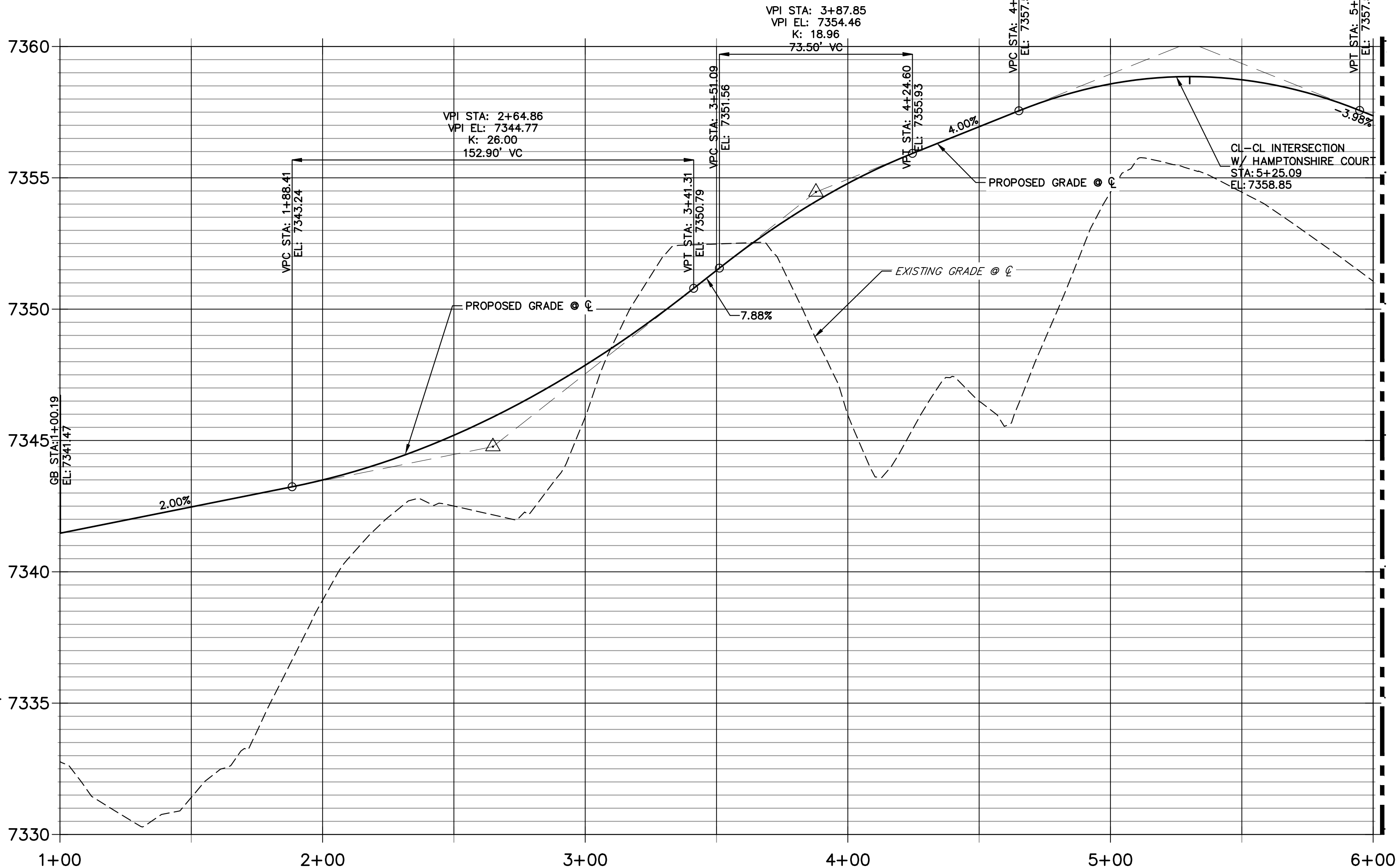
HP STA: 5+30.17  
HP EL: 7358.85  
VPI STA: 5+30.01  
VPI EL: 7360.15  
K: 16.24  
129.76' VC

### STERLING SPIRES HEIGHTS PROFILE (1) STA 1+00.00 TO 6+00.00



POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(11)	5+30.08	14.00' (LT)	STERLING SPIRES HEIGHTS	7358.55	HIGH PT
(17)	4+86.09	14.00' (RT)	STERLING SPIRES HEIGHTS	7357.98	PC
(18)	1+97.49	14.00' (RT)	STERLING SPIRES HEIGHTS	7343.19	PT
(19)	1+97.49	14.00' (LT)	STERLING SPIRES HEIGHTS	7343.12	PT
(20)	1+32.50	38.00' (RT)	STERLING SPIRES HEIGHTS	7342.48	PRC
(21)	1+32.50	38.00' (LT)	STERLING SPIRES HEIGHTS	7341.67	PRC
(23)	2+38.07	0.00' (I)	SOUTH CUL-DE-SAC	7341.03	LOW POINT
(S-5)	4+86.09	26.00' (RT)	STERLING SPIRES HEIGHTS	7355.44	SWALE PT
(S-6)	3+48.80	26.00' (RT)	STERLING SPIRES HEIGHTS	7348.56	SWALE TRANSION END 2.5' DEPTH
(S-7)	3+18.94	28.00' (RT)	STERLING SPIRES HEIGHTS	7345.81	SWALE TRANSION BEGIN 3.0' DEPTH
(S-8)	1+97.49	28.00' (RT)	STERLING SPIRES HEIGHTS	7340.15	SWALE PC
(S-9)	1+41.60	48.64' (RT)	STERLING SPIRES HEIGHTS	7339.44	SWALE PCC

POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(S-11)	1+04.74	63.82' (RT)	STERLING SPIRES HEIGHTS	7339.12	SWALE INTERSECTION
(S-12)	2+38.15	10.95' (RT)	SOUTH CUL-DE-SAC	7337.97	SWALE LOW POINT
(S-13)	1+40.30	47.12' (LT)	STERLING SPIRES HEIGHTS	7339.14	SWALE PCC
(S-14)	1+82.74	27.25' (LT)	STERLING SPIRES HEIGHTS	7340.27	CULVERT INVERT
(S-15)	2+17.70	26.00' (LT)	STERLING SPIRES HEIGHTS	7341.17	CULVERT INVERT
(S-16)	4+86.09	26.00' (LT)	STERLING SPIRES HEIGHTS	7355.44	BEGIN SWALE SECTION M



#### NOTES

- SEE SHEET 3 FOR TYPICAL SWALE SECTIONS.
- SEE STORM & POND PLANS BY JR ENGINEERING FOR ALL CULVERT & STORM SEWER INFORMATION.
- ALL POINTS ARE EDGE OF ASPHALT (EOA) UNLESS OTHERWISE SPECIFIED.

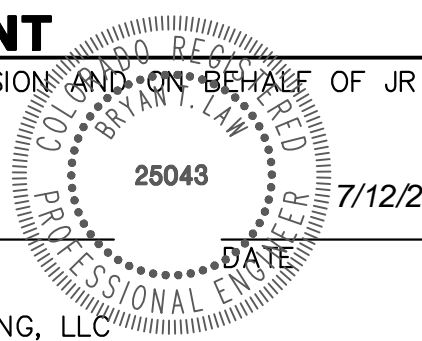


#### ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

*[Signature]*  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

FOR AND ON BEHALF OF JR ENGINEERING, LLC



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

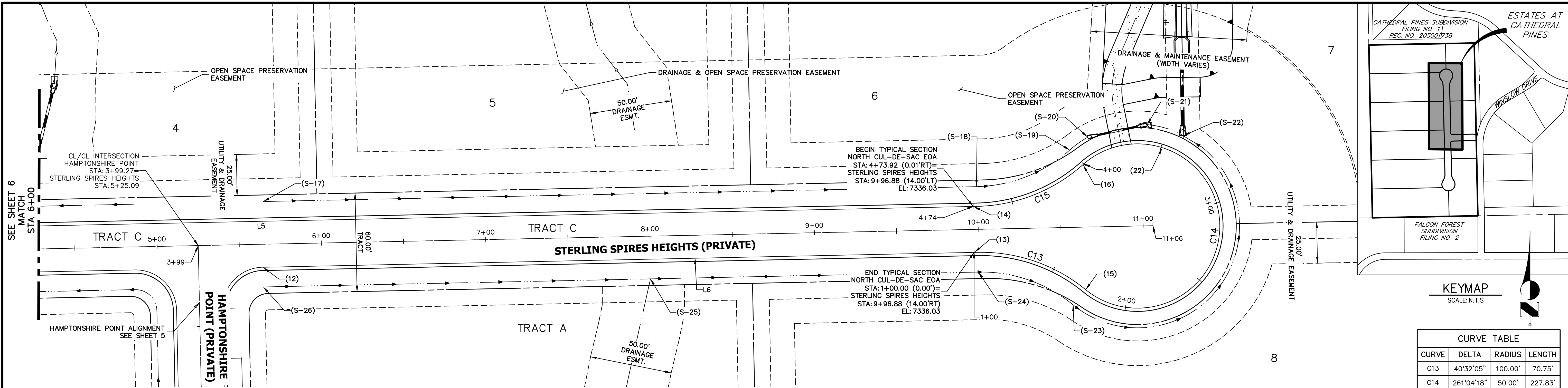
PREPARED FOR  
**VILLAGREE DEVELOPMENT LLC**  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWFIELD  
(719) 413-6900

**J.R. ENGINEERING**  
A Western Company  
Central 303-740-9888 • Colorado Springs 719-583-2583  
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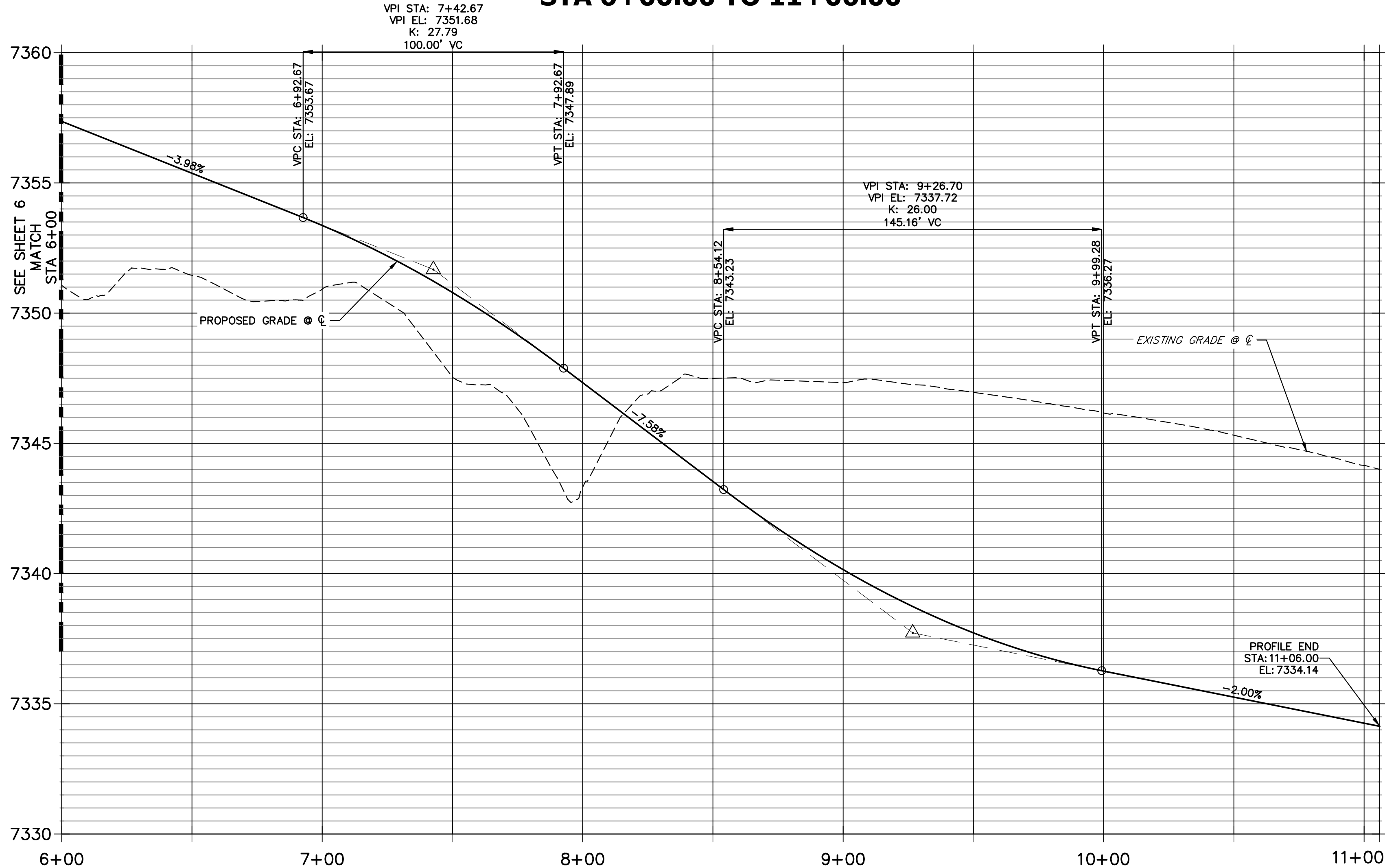
No.	REVISION	BY	DATE	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				1"=30'	1"=3'	05/15/24	APL	SAM	

ESTATES AT CATHEDRAL PINES	STREET IMPROVEMENT PLANS	SHEET 6 OF 8
JOB NO.	25260.00	





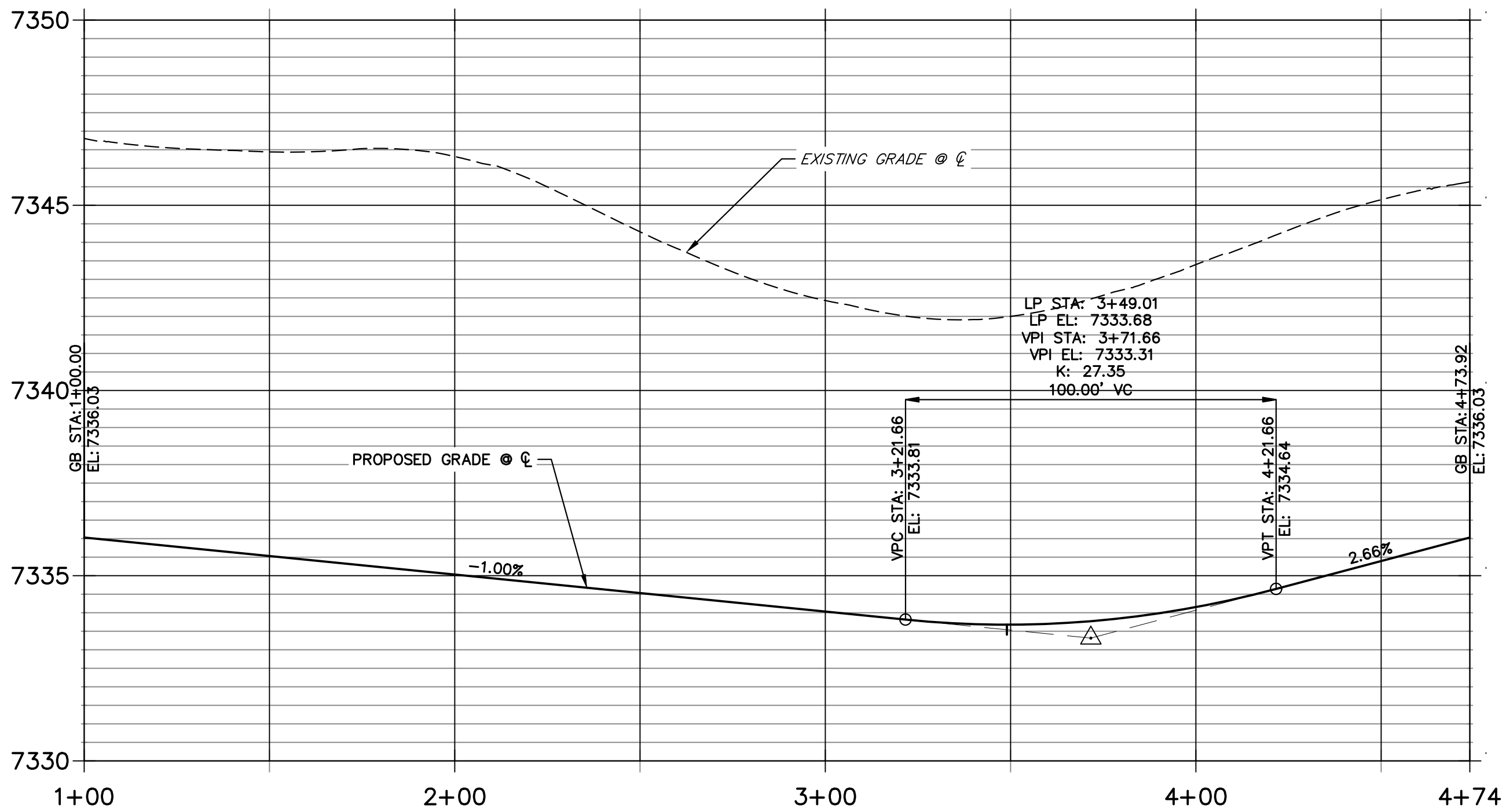
**STERLING SPIRES HEIGHTS PROFILE  
STA 6+00.00 TO 11+06.00**



POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(12)	5+64.09	14.00' (RT)	STERLING SPIRES HEIGHTS	7358.22	PT
(13)	9+96.87	13.95' (RT)	STERLING SPIRES HEIGHTS	7336.03	PC
(14)	9+96.88	13.99' (LT)	STERLING SPIRES HEIGHTS	7336.03	PC
(15)	10+64.16	38.00' (RT)	STERLING SPIRES HEIGHTS	7335.30	PRC
(16)	10+64.16	38.00' (LT)	STERLING SPIRES HEIGHTS	7334.17	PRC
(22)	3+49.08	0.00' ( )	NORTH CUL-DE-SAC EOA	7333.69	LOW PT

POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(S-17)	5+64.17	26.00' (LT)	STERLING SPIRES HEIGHTS	7355.65	BEGIN SWALE SECTION E
(S-18)	9+99.17	26.00' (LT)	STERLING SPIRES HEIGHTS	7333.43	SWALE PC
(S-19)	10+56.36	47.12' (LT)	STERLING SPIRES HEIGHTS	7331.63	SWALE PCC
(S-20)	3+90.00	12.00' (RT)	NORTH CUL-DE-SAC EOA	7331.49	CULVERT INVERT
(S-21)	3+59.82	12.00' (RT)	NORTH CUL-DE-SAC EOA	7331.16	CULVERT INVERT
(S-22)	3+40.89	11.85' (RT)	NORTH CUL-DE-SAC EOA	7331.11	SWALE LOW POINT

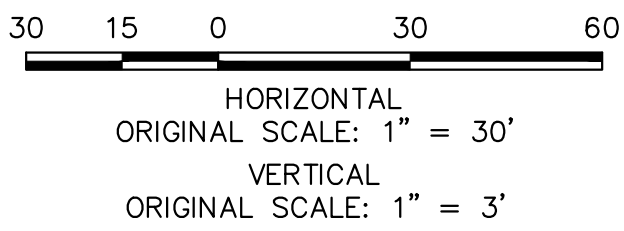
**NORTH CUL-DE-SAC EOA PROFILE  
STA 1+00.00 TO 4+73.92**



**NOTES**

- SEE SHEET 3 FOR TYPICAL SWALE SECTIONS.
- SEE STORM & POND PLANS BY JR ENGINEERING FOR ALL CULVERT & STORM SEWER INFORMATION.
- ALL POINTS ARE EDGE OF ASPHALT (EOA) UNLESS OTHERWISE SPECIFIED.

POINT TABULATION					
POINT NUMBER	STATION	OFFSET	ALIGNMENT	ELEVATION	DESCRIPTION
(S-23)	10+56.36	47.12' (RT)	STERLING SPIRES HEIGHTS	7332.77	SWALE PCC
(S-24)	9+99.17	26.00' (RT)	STERLING SPIRES HEIGHTS	7333.47	SWALE PC
(S-25)	7+99.69	26.00' (RT)	STERLING SPIRES HEIGHTS	7344.53	SWALE INTERSECTION
(S-26)	5+64.09	26.00' (RT)	STERLING SPIRES HEIGHTS	7355.68	BEGIN SWALE SECTION D



**ENGINEER'S STATEMENT**

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC  
7/12/24

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
**VILLAGREE DEVELOPMENT LLC**  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWFIELD  
(719) 413-6900

**J.R. ENGINEERING**  
A Western Company  
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Fort Collins 970-491-9888 • [www.jrengineering.com](http://www.jrengineering.com)

BY	DATE	REVISION	No.	1"=30'	1"=3'	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
						05/15/24	APL	SAM	

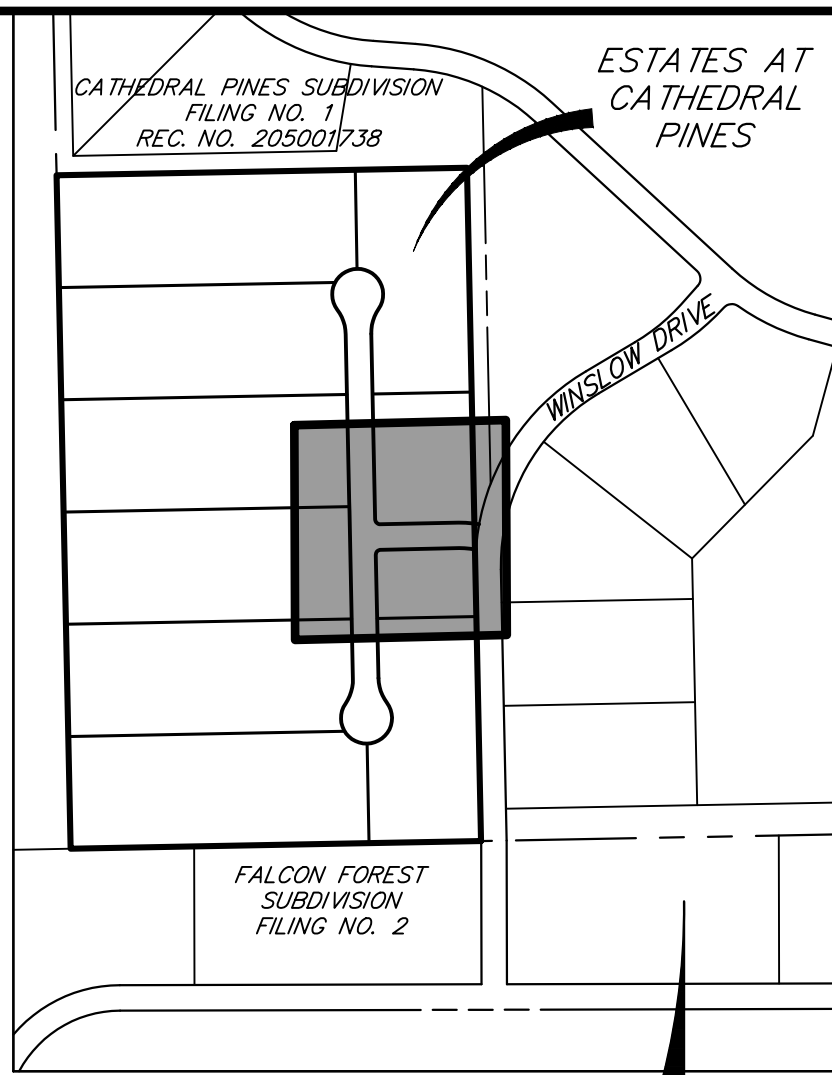
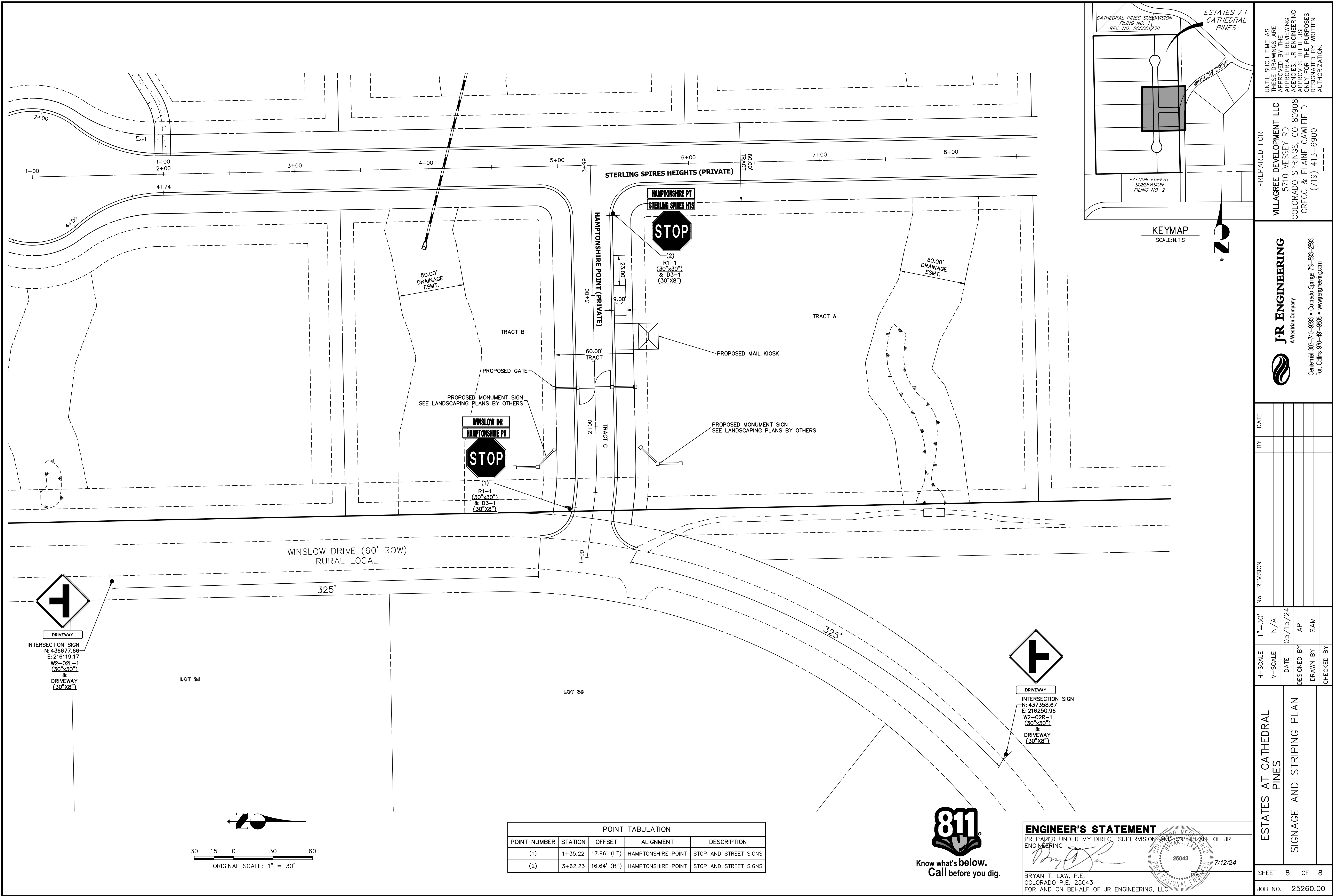
ESTATES AT CATHEDRAL PINES

STREET IMPROVEMENT PLANS

SHEET 7 OF 8

JOB NO. 25260.00





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COLORADO SPRINGS, CO 80908  
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SHEET 8 OF 8		ESTATES AT CATHEDRAL PINES		H-SCALE	1"=30'	No.	REVISION	BY	DATE
		SIGNAGE AND STRIPING PLAN		V-SCALE	N/A				
				DATE	05/15/24				
				DESIGNED BY	APL				
				DRAWN BY	SAM				
				CHECKED BY					
JOB NO. 25260.00									

POINT TABULATION				
POINT NUMBER	STATION	OFFSET	ALIGNMENT	DESCRIPTION
(1)	1+35.22	17.96' (LT)	HAMPTONSHIRE POINT	STOP AND STREET SIGNS
(2)	3+62.23	16.64' (RT)	HAMPTONSHIRE POINT	STOP AND STREET SIGNS



**ENGINEER'S STATEMENT**  
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
*Bryan T. Law*  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC  
25043  
7/12/24



ESTATES AT CATHEDRAL PINES  
COUNTY OF EL PASO, STATE OF COLORADO  
STORM SEWER AND POND PLANS

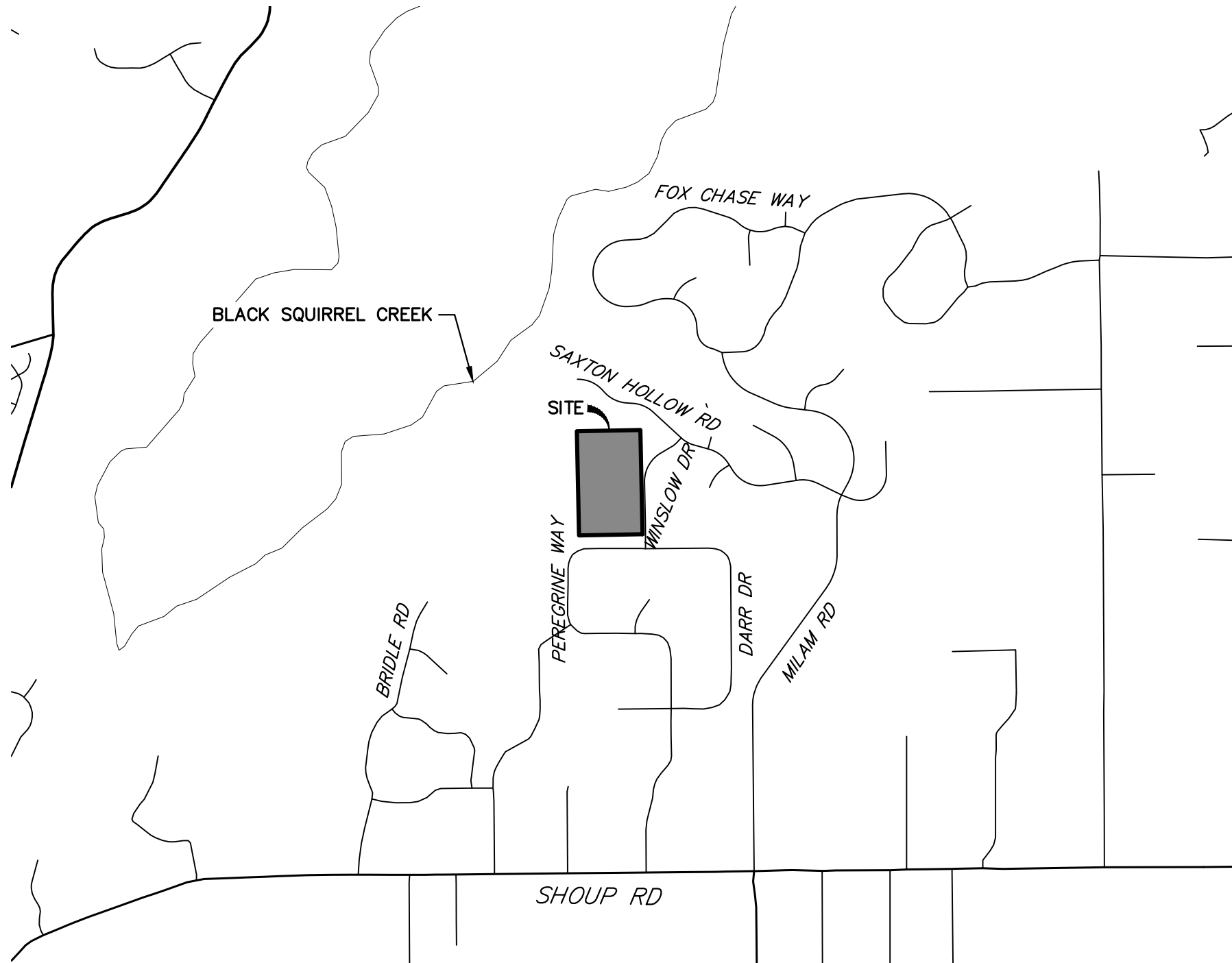


Know what's below.  
Call before you dig.

UNTIL SUCH TIME AS  
THESE DRAWINGS ARE  
APPROVED BY THE  
APPROPRIATE REVIEWING  
AGENCIES, OR ENGINEERING  
APPROVES THEIR USE,  
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AUTHORIZATION.

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COLORADO SPRINGS, CO 80908  
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VICINITY MAP  
SCALE: 1"=2000'



BASIS OF BEARINGS

THE WEST LINE OF THE SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE 6TH P.M. BEING MONUMENTED BY A 3-1/4" ALUMINUM CAP STAMPED "LS 9132" AT THE SOUTH 1/2 CORNER AND A 2-1/2" ALUMINUM CAP STAMPED "LS 9132" AT THE CENTER 1/4 CORNER, SAID LINE BEARING N00°11'44"W AS SHOWN ON THE PLAT OF CATHEDRAL PINES SUBDIVISION FILING NO. 1 RECORDED UNDER RECEPTION NO. 205001738 IN THE RECORDERS OF THE EL PASO COUNTY CLERK AND RECORDER.

BENCHMARKS

1. SITE VERTICAL DATUM NGVD88 FROM PLANS BY LEIGH-WHITEHEAD ELEVATION 7436.65 NO. 4 REBAR 23' NORTH AND 20' EAST OF THE SOUTHEAST CORNER OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY COLORADO, SAID SECTION CORNER BEING A 3-1/4" ALUMINUM SURVEYORS CAP STAMPED "PLS 9132" BEING APPROPRIATELY MARKED

2. 1" IRON PIPE AT SOUTHEAST CORNER OF SITE BEING 367' +/- NORTH OF THE INTERSECTION OF PEREGRINE WAY AND WINSLOW DRIVE AND 30' WESTERLY OF THE CENTERLINE OF WINSLOW DRIVE ELEVATION = 7347.65

3. THE NORTHWEST CORNER OF AN AREA INLET BEING EASTERLY OF WINSLOW DRIVE AND BEING 900' +/- NORTH OF THE INTERSECTION OF PEREGRINE WAY AND WINSLOW DRIVE ELEVATION = 7347.47

SHEET INDEX:

1	-	COVER SHEET
2	-	LEGEND AND GENERAL NOTES
3-5	-	STORM SEWER PLAN & PROFILE
6-13	-	POND PLANS AND DETAILS
14-16	-	DETAILS
16	-	TOTAL SHEETS

AGENCIES

OWNER/DEVELOPER:	VILLAGREE DEVELOPMENT LLC 5710 VESSEY RD COLORADO SPRINGS, CO 80908 GREGG & ELAINE CAWLFIELD (719) 413-6900	FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
CIVIL ENGINEER:	JR ENGINEERING, LLC 5475 TECH CENTER DRIVE COLORADO SPRINGS, CO 80919 BRYAN LAW P.E. (303) 267-6254	GAS DEPARTMENT:	BLACK HILLS ENERGY 7080 ALEGRE STREET FOUNTAIN, CO 80817 (719) 393-6625
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 CHARLENE DURHAM, P.E. (719) 520-7951	ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JOSHUA PALMER, P.E. (719) 520-6460	COMMUNICATIONS:	U.S. WEST COMMUNICATIONS (LOCATORS) (800) 922-1987

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

*Elaine Cawlfieled*  
ELAINE CAWLFIELD, OWNER  
5/31/2024  
DATE

VILLAGREE DEVELOPMENT  
5710 VESSEY ROAD  
COLORADO SPRINGS, CO 80908

EL PASO COUNTY STATEMENT

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.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, 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.

JOSHUA PALMER, P.E.  
DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT 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 PLAN 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.

*Bryan T. Law*  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC  
7/12/24  
DATE

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

PCD FILE NO. SF-2234

BY	DATE	No.	REVISION	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SHEET	OF	JOB NO.
						05/15/24	GAG			1	16	25260.00
ESTATES AT CATHEDRAL PINES COVER SHEET												



LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE		
CENTERLINE		
CITY LIMITS		
WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
MASONRY FENCE		
GUARDRAIL		
CONC. BARRIER		
CABLE TV		
ELECTRIC		
FIBER OPTIC		
GAS MAIN		
IRRIGATION MAIN		
OIL/PETRO. MAIN		
OVERHEAD UTILITY		
SANITARY SEWER		
STORM DRAIN		
TELEPHONE		
WATER MAIN		
RAW WATER LINE		
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR		
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)		
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		
SILT FENCE		
100 YEAR FLOODPLAIN		
500 YEAR FLOODPLAIN		
FLOODWAY		
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		



UTILITIES LEGEND

	EXISTING	PROPOSED
<b>STORM SEWER</b>		
MANHOLE		
STORM INLET		
AREA INLET - SQUARE		
AREA INLET - ROUND		
FLARED END SECTION		
RIPRAP		
<b>SANITARY SEWER</b>		
LINE MARKER		
SERVICE MARKER		
CLEAN-OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
<b>WATER LINE</b>		
LINE MARKER		
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW-OFF VALVE		
WELL		
METER		
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW-OFF ASSEMBLY		
<b>GAS LINE</b>		
MARKER		
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
<b>DRY UTILITIES</b>		
CABLE TV MARKER		
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER		
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER-OPTIC MARKER		
IRRIGATION PEDESTAL		
TELEPHONE MARKER		
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		
<b>MISC. UTILITIES</b>		
VENT PIPE		
TEST HOLE DESIGNATOR		

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 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.
- 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).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOIL AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND BRIDGE CONSTRUCTION
  - CDOT M&S STANDARDS
- 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 VERSIONS 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.
- 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.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES 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.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 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.

STORM SEWER NOTES

- SEE SHEET 1 FOR BENCHMARK. SEE SHEET 2 FOR LEGEND.
- ALL STORM SEWER PIPES, INLETS, MANHOLES, AND APPURTENANCES WITHIN THE R.O.W. ARE PUBLIC. STORM FACILITIES OUTSIDE OF THE PUBLIC R.O.W. ARE PRIVATE, UNLESS OTHERWISE NOTED.
- ALL STATIONING IS PIPE CENTERLINE UNLESS OTHERWISE NOTED.
- ALL PROPOSED RCP STORM SEWER PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
- PIPE LENGTHS ARE FROM INSIDE INLET WALL TO INSIDE INLET WALL, FROM CENTER OF MANHOLE TO INSIDE INLET OF WALL, OR FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE LENGTHS INCLUDE FES OR HEADWALL.
- WHERE PIPES ENTER STRUCTURES, THE CENTERLINE STATION CALLED OUT ON THE PLANS IS TO THE CENTER OF STRUCTURE. WHERE PIPES ENTER STRUCTURES ON A SKEW, CONTRACTOR IS REQUIRED TO EXTEND PIPE TO ENSURE THAT BOTH EDGES OF THE PIPE EXTEND INTO THE STRUCTURE. CONTRACTOR WILL THEN BE REQUIRED TO CUT PIPE FLUSH WITH THE INSIDE FACE OF THE STRUCTURE AND GROUT IN PLACE.
- PIPES SHALL HAVE JOINT RESTRAINTS ON LAST 3 JOINTS AT PIPE OUTFALL.
- PIPES WITH PRESSURE HEAD SHALL USE WATER TIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.
- PIPE BEDDING SHALL CONFORM TO EL PASO COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS. BEDDING FOR RCP SHALL BE AG7122 NO. 57/67 CRUSHED ROCK. SQUEEGEE OR MIXTURES CONTAINING SQUEEGEE SHALL NOT BE USED. BEDDING SHALL BE 6 TO 8 INCHES DEEP UNDER THE PIPE AND BACKFILLED TO THE SPRING LINE.
- ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH MANUFACTURES SPECIFICATIONS AND EL PASO COUNTY STANDARDS AND SPECIFICATION.
- SEE DETAIL SHEET 14 FOR APPLICABLE DETAILS.

POND NOTES

- ALL PROPOSED POND IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
- SEE SHEETS 3-5 FOR PROPOSED STORM SEWER DESIGN.
- SEE PRIVATE STREET IMPROVEMENT PLANS BY JR ENGINEERING FOR PROPOSED PRIVATE STREET DESIGN.
- SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.

PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
(719) 413-6900

J.R. ENGINEERING  
A Westman Company



Central 303-740-9383 • Colorado Springs 719-583-2583  
Fort Collins 970-491-9888 • www.jrengineering.com

DATE

BY

REVISION

No.

N/A

H-SCALE

V-SCALE

DATE

DESIGNED BY

DRAWN BY

CHECKED BY

ESTATES AT CATHEDRAL PINES

LEGEND AND GENERAL NOTES

SHEET 2 OF 16

JOB NO. 25260.00



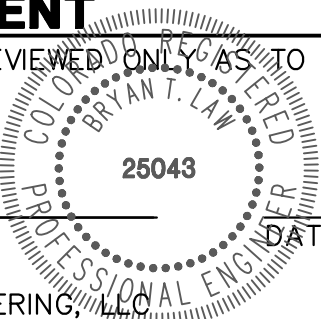
Know what's below.  
Call before you dig.

ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

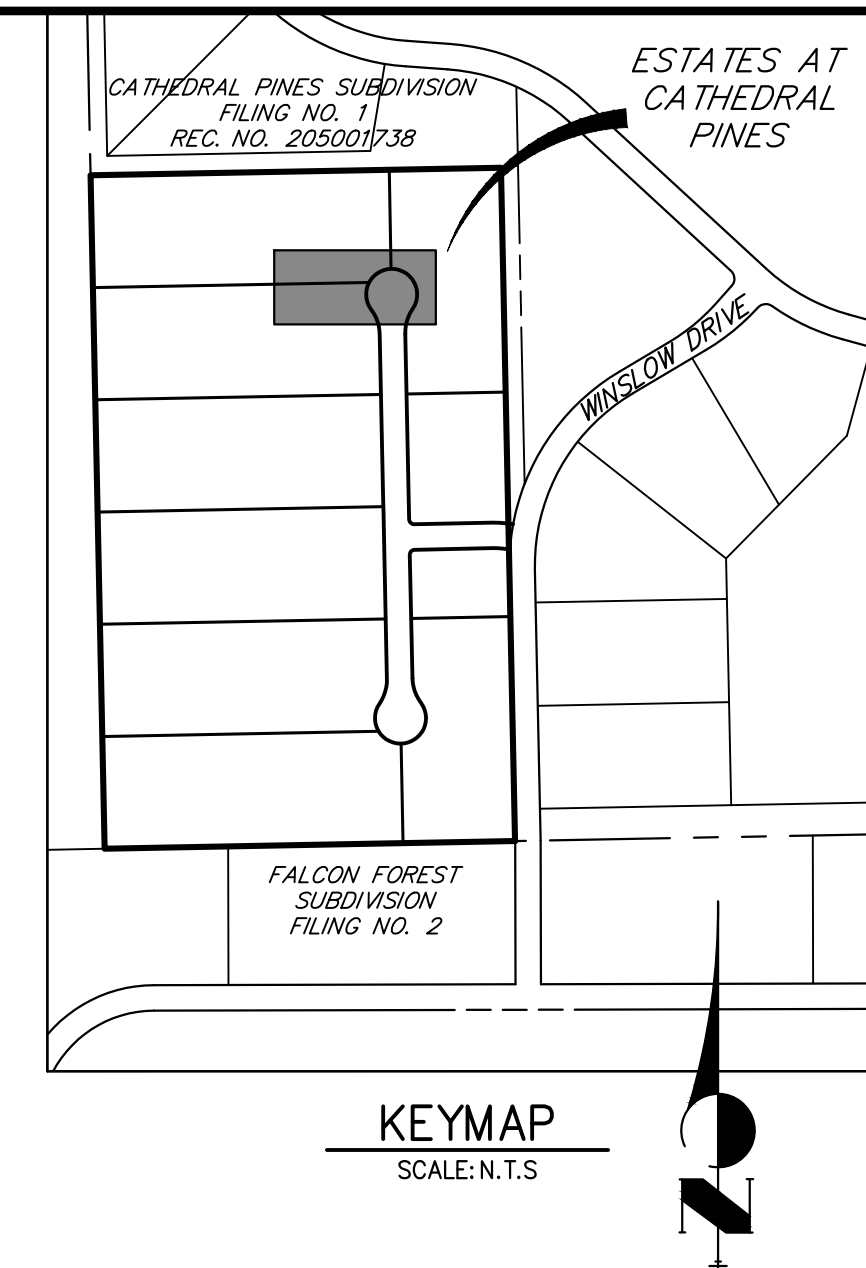
FOR AND ON BEHALF OF JR ENGINEERING



DATE

7/12/24





PREPARED FOR  
**VILLAGREE DEVELOPMENT LLC**  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWFIELD  
(719) 413-6900

 **J·R ENGINEERING**  
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-533-2533  
Fort Collins 970-491-9888 • [www.jrengineering.com](http://www.jrengineering.com)

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

EXISTING GRADE  
@ PIPE (TYP.)

7340

7340

POND A MAINT. TRAIL  
STA: 10+23.49  
EL: 7334.23

PROPOSED GRADE  
@ PIPE (TYP.)

POND A MAINT. TRAIL  
STA: 10+35.66  
EL: 7334.44

7335

7335

DP01-01  
FES  
STA: 10+11.94  
INV: 7331.16

DP01-02  
FES  
STA: 10+35.66  
INV: 7331.49

100-YEAR HGL

5-YEAR HGL

0.50%

36.64 LF 12" RCP @  
0.79%

1.57%

7330

7330

PROP. TYPE L SOIL RIPRAP  
(MIN. DEPTH = 18")

7327

7327

10+00

10+66

## STORM SEWER NOTES

1. SEE SHEET 1 FOR BENCHMARK. SEE SHEET 2 FOR LEGEND.
2. ALL STORM SEWER PIPES, INLETS, MANHOLES, AND APPURTENANCES WITHIN THE R.O.W. ARE PUBLIC. STORM FACILITIES OUTSIDE OF THE PUBLIC R.O.W. ARE PRIVATE. UNLESS OTHERWISE NOTED.
3. ALL STATIONING IS PIPE CENTERLINE UNLESS OTHERWISE NOTED.
4. ALL PROPOSED RCP STORM SEWER PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
5. PIPE LENGTHS ARE FROM INSIDE INLET WALL TO INSIDE INLET WALL. FOR CENTER OF MANHOLE TO INSIDE INLET OF WALL, OR FOR CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE LENGTHS INCLUDE FES OR HEADWALL.
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11. SEE DETAIL SHEET 14 FOR APPLICABLE DETAILS.



Know what's **below**.  
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HORIZONTAL  
ORIGINAL SCALE: 1" = 20'

VERTICAL  
ORIGINAL SCALE: 1" = 2'

### ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR  
ENGINEERING

*[Signature]*

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC

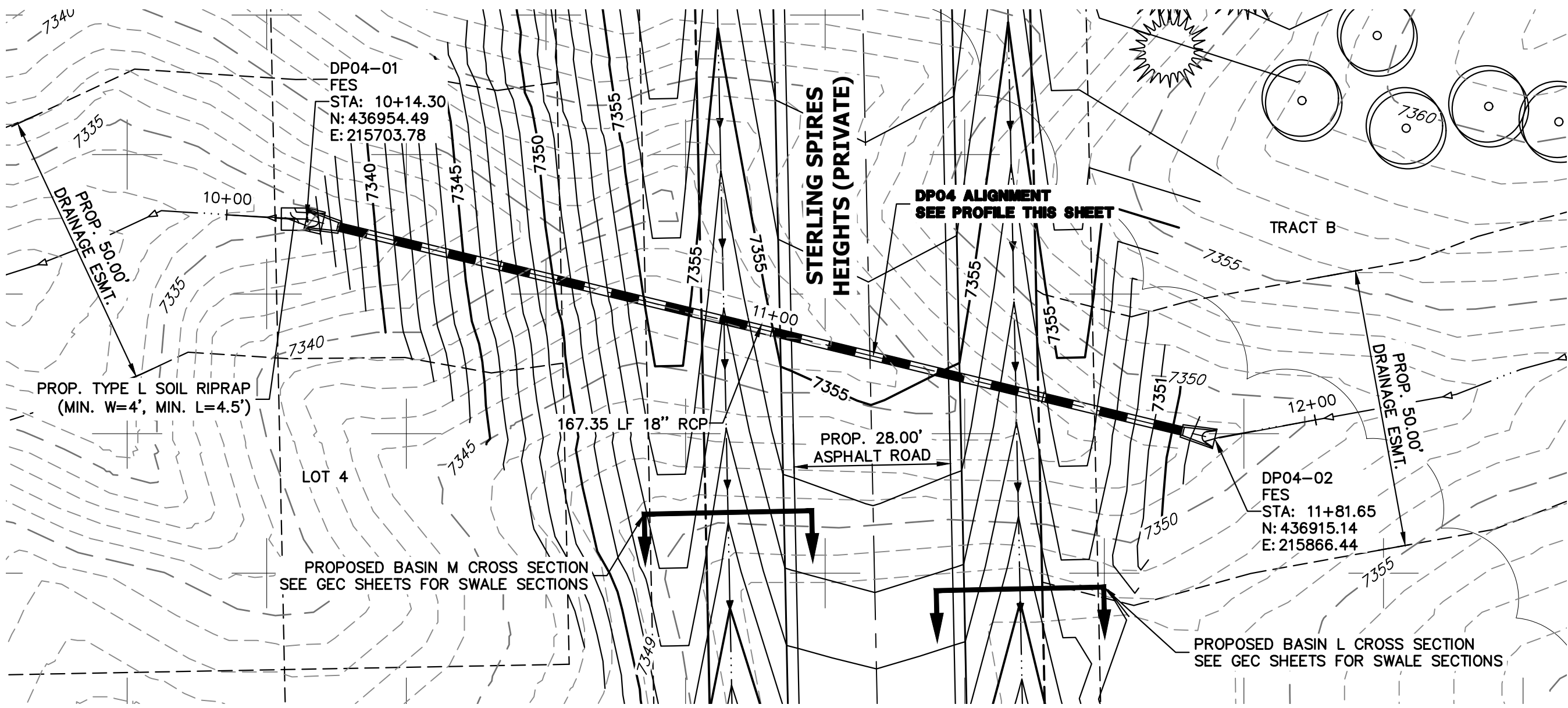
ESTATES AT CATHEDRAL  
PINES

STORM SEWER PLAN &  
PROFILE

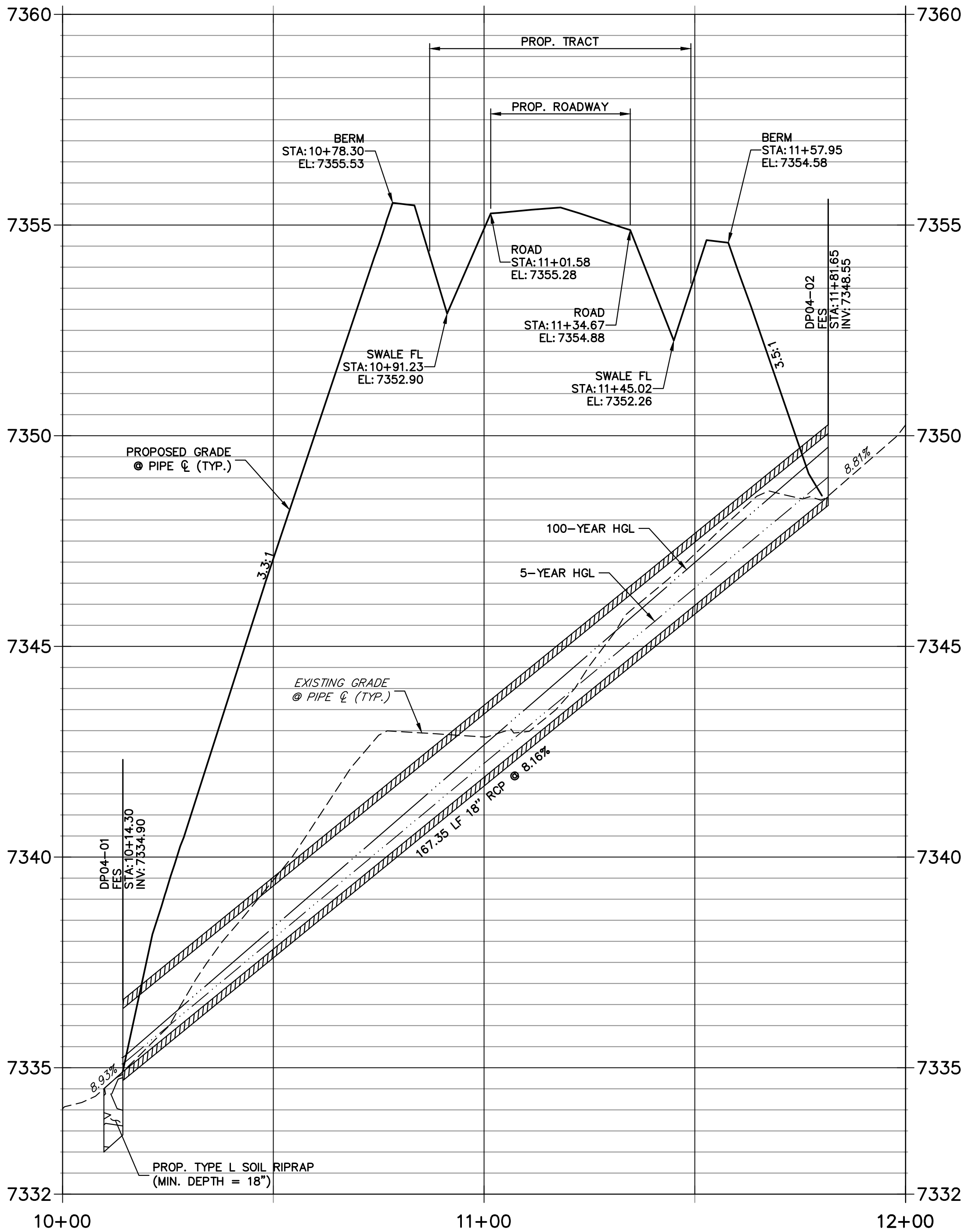
SHEET 3 OF 16

JOB NO. 25260.00

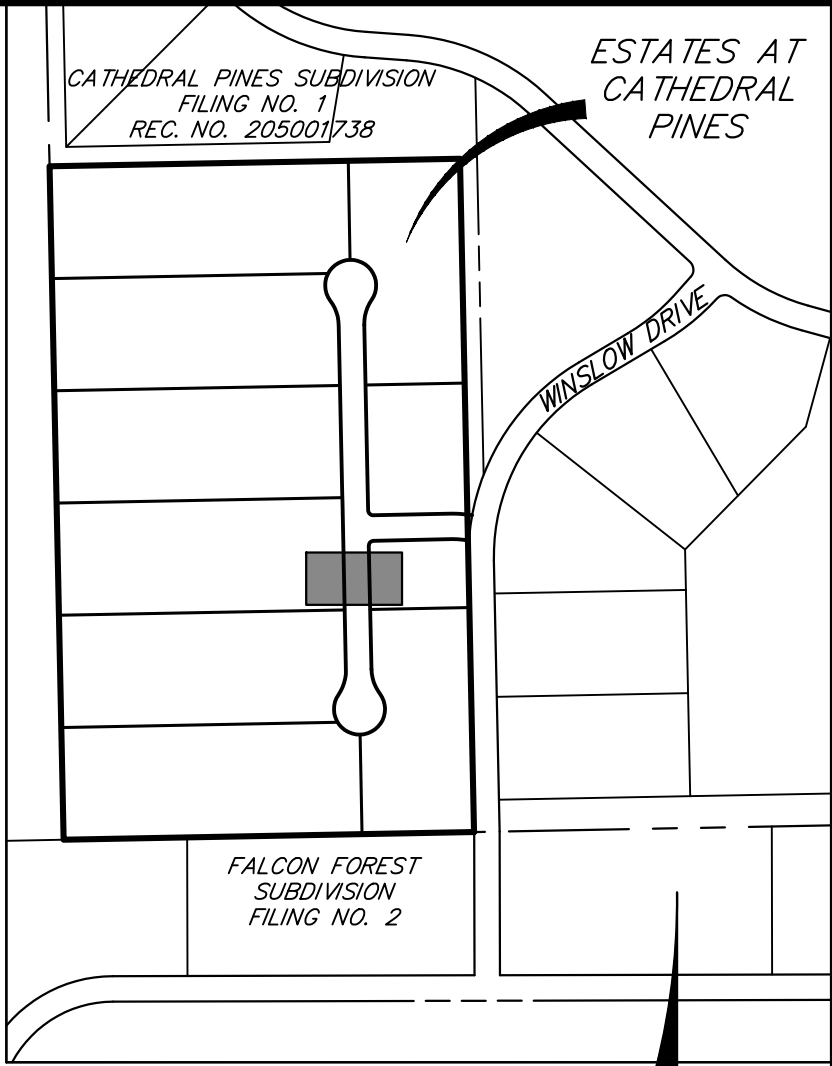




**DP04 PROFILE  
STA 10+00.00 TO 12+00.00**



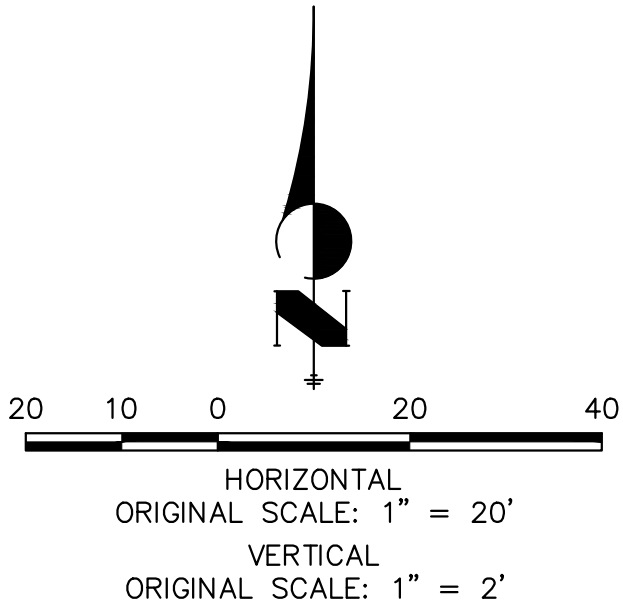
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**KEYMAP**  
SCALE: N.T.S.

**STORM SEWER NOTES**

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**ENGINEER'S STATEMENT**

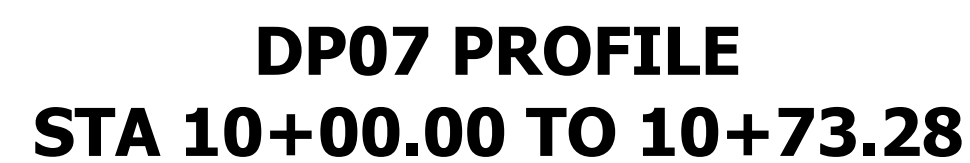
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING

DATE: 7/12/24

ESTATES AT CATHEDRAL PINES		H-SCALE 1"=20'		No.		REVISION		BY		DATE	
		V-SCALE 1"=2'									
		DATE 05/15/24									
		DESIGNED BY GAG									
		DRAWN BY GAG									
		CHECKED BY									
SHEET 4 OF 16											
JOB NO. 25260.00											



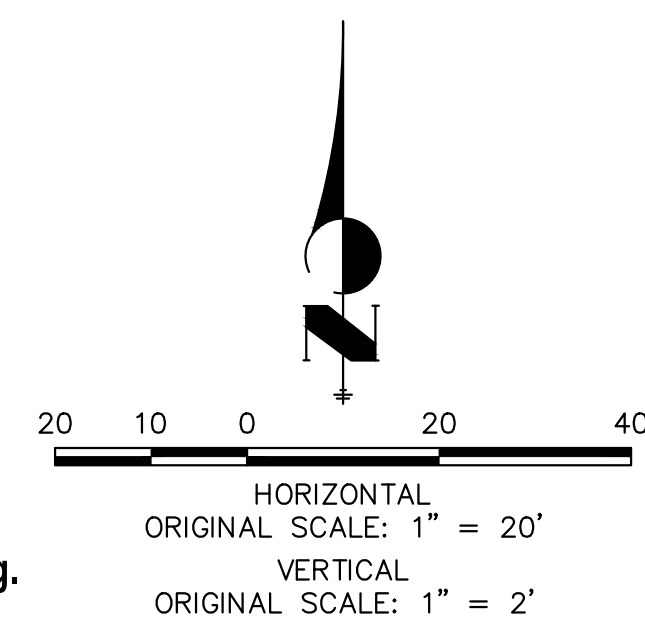
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12. SEE DETAIL SHEET 14 FOR APPLICABLE DETAILS.



**811**  
Know what's below.  
**Call** before you dig.



PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR  
ENGINEERING

*[Signature]*

25043

7/12/24

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE



PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CRAWFIELD  
(719) 413-6900

**J·R ENGINEERING**  
A Westrian Company



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	H-SCALE	1" = 20'	No.	REVISION	BY	DATE
	V-SCALE	1" = 2'				
	DATE	05/15/24				
	DESIGNED BY	GAG				
	DRAWN BY	GAG				
	CHECKED BY					

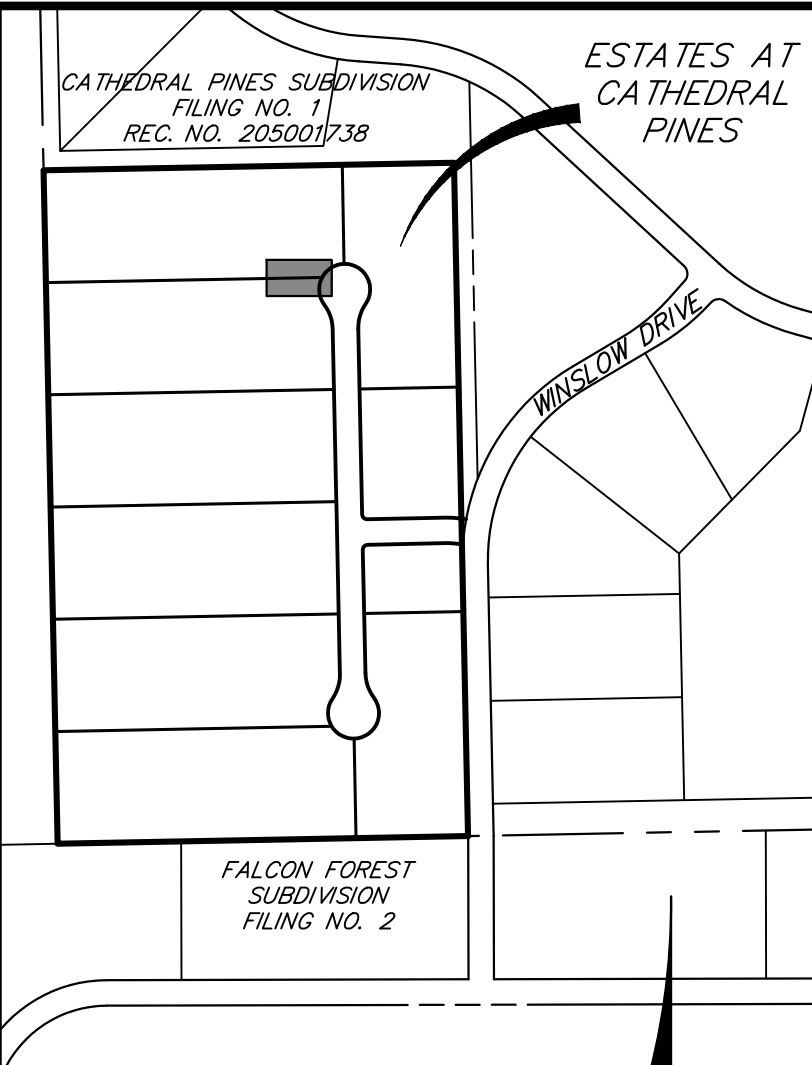
ESTATES AT CATHEDRAL  
PINES

# STORM SEWER PLAN & PROFILE

SHEET 5 OF 16

JOB NO. 25260.00





UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
(719) 413-6900

 **J·R· ENGINEERING**  
A Western Company

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Fort Collins 970-491-9888 • [www.jrengr.com](http://www.jrengr.com)

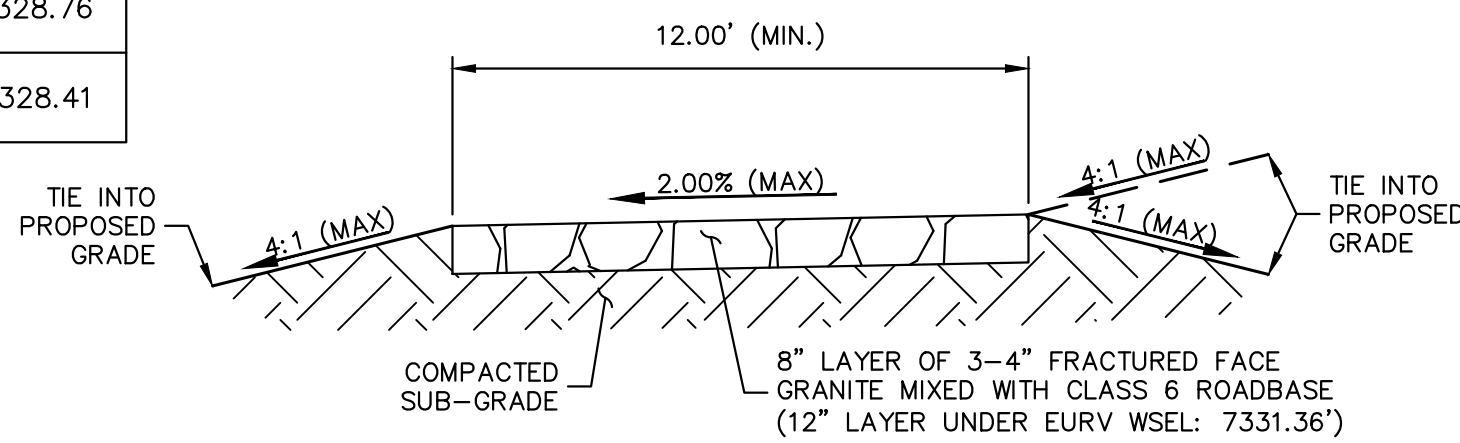
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V-SCALE	N/A				
DATE	05/15/24				
DESIGNED BY	GAG				
DRAWN BY	GAG				

SHEET	6	OF	16
JOB NO.	25260.00		
ESTATES AT CATHEDRAL PINES			
POND PLANS AND DETAILS			

POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
T3	TOE	N: 437644.09 E: 215606.10	7328.95
T4	TOE	N: 437642.77 E: 215606.27	7328.91
T5	TOE	N: 437635.77 E: 215606.36	7328.91
T6	TOE	N: 437629.89 E: 215605.72	7329.09
T7	TOE	N: 437629.18 E: 215676.08	7329.49
T8	TOE	N: 437636.64 E: 215675.04	7329.26
T10	TOP	N: 437651.46 E: 215699.83	7335.50
T11	TOP	N: 437671.20 E: 215679.57	7335.50
T12	TOP/ BERM	N: 437670.19 E: 215599.58	7335.50
T13	TOP	N: 437616.43 E: 215580.26	7335.50
T14	TOP	N: 437596.70 E: 215599.36	7335.50
T15	TOP/ TRAIL	N: 437592.01 E: 215703.49	7335.50
T16	TOP/ TRAIL	N: 437603.97 E: 215704.43	7335.50
T17	TOP/ BERM	N: 437622.36 E: 215700.74	7335.50

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N78°39'42"E	24.18'
L3	S66°48'29"E	86.15'
L4	N89°16'28"E	68.69'

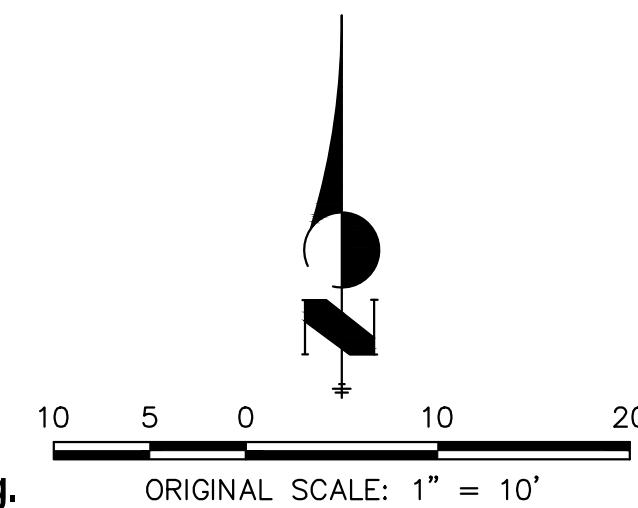
CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	34°31'50"	50.00'	30.13'




1. ALL PROPOSED POND IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
2. SEE SHEETS 3-5 FOR PROPOSED STORM SEWER DESIGN.
3. SEE PRIVATE STREET IMPROVEMENT PLANS BY JR ENGINEERING FOR PROPOSED PRIVATE STREET DESIGN.
4. SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.




Know what's **below**.  
**Call** before you dig.



PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR  
ENGINEERING

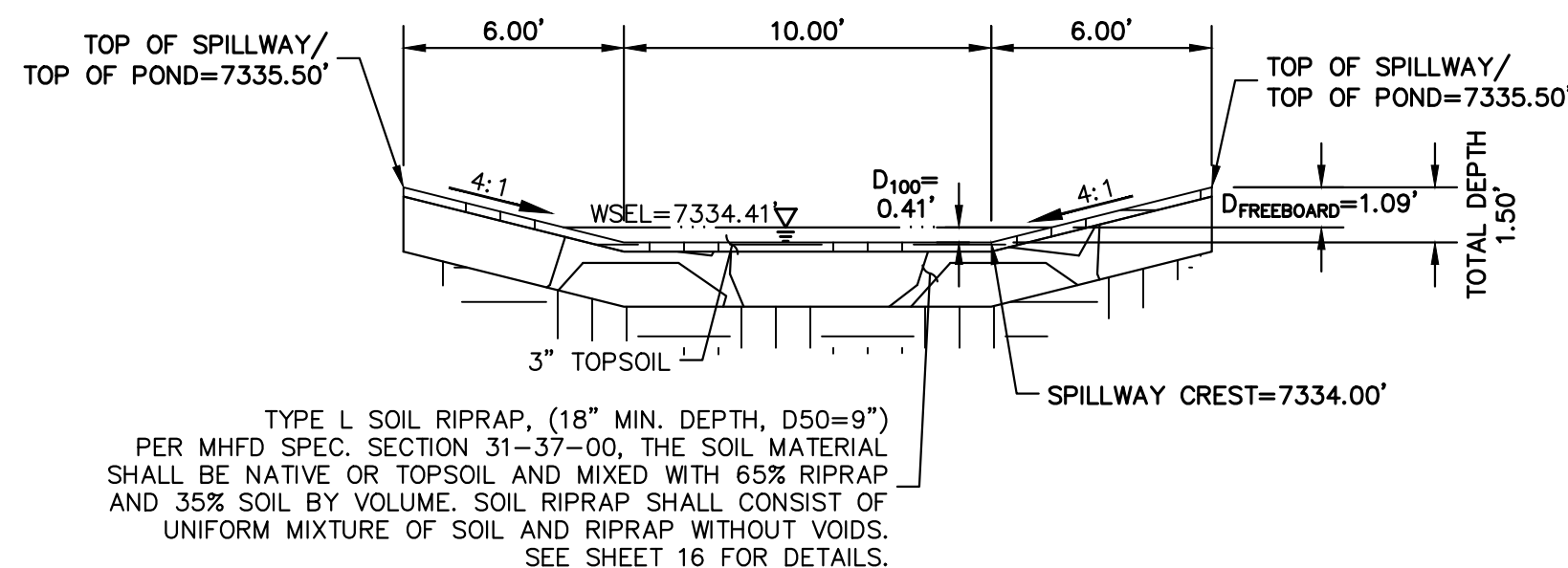
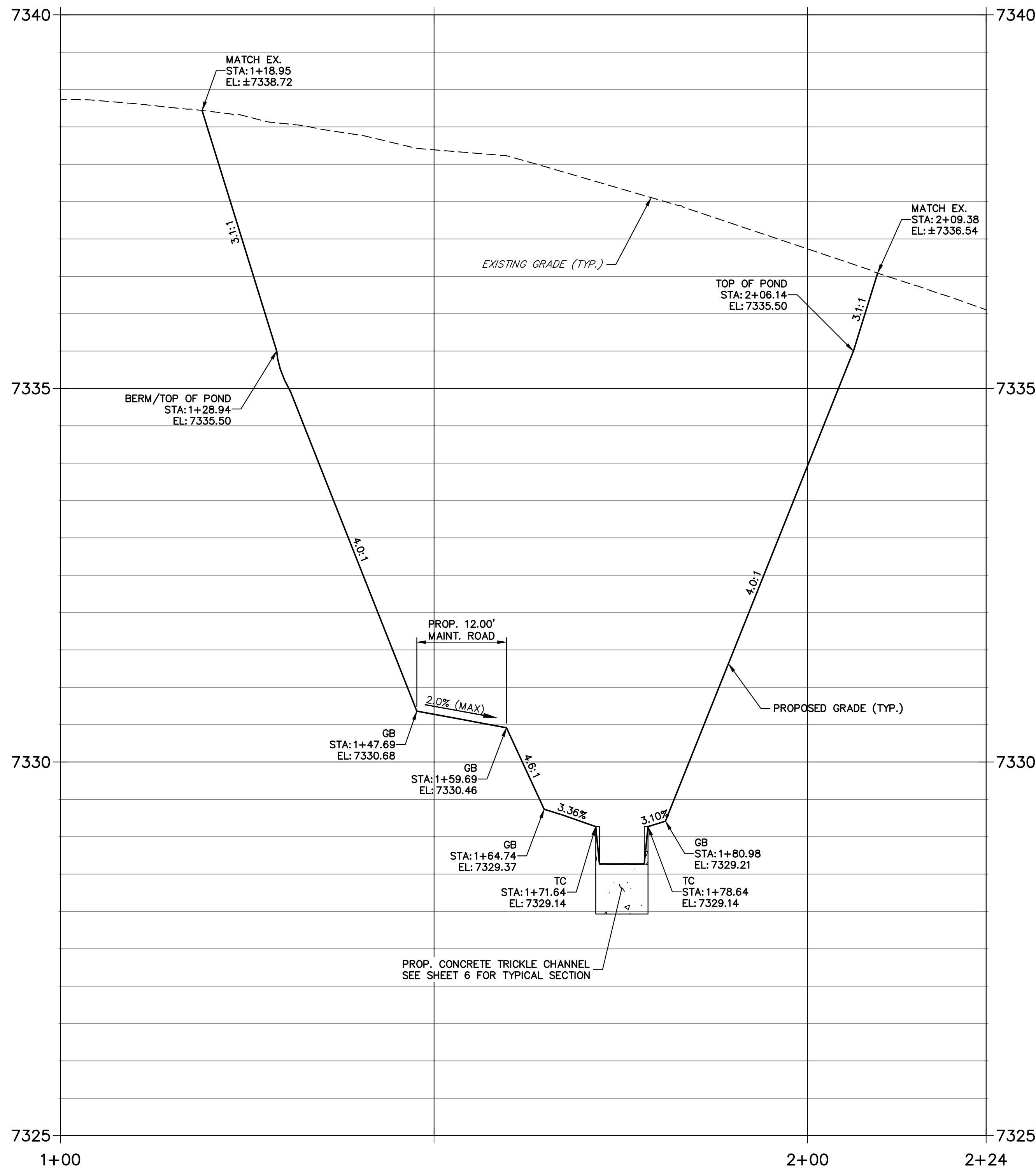
  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC

  
25043  
DATE 7/12/24

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.



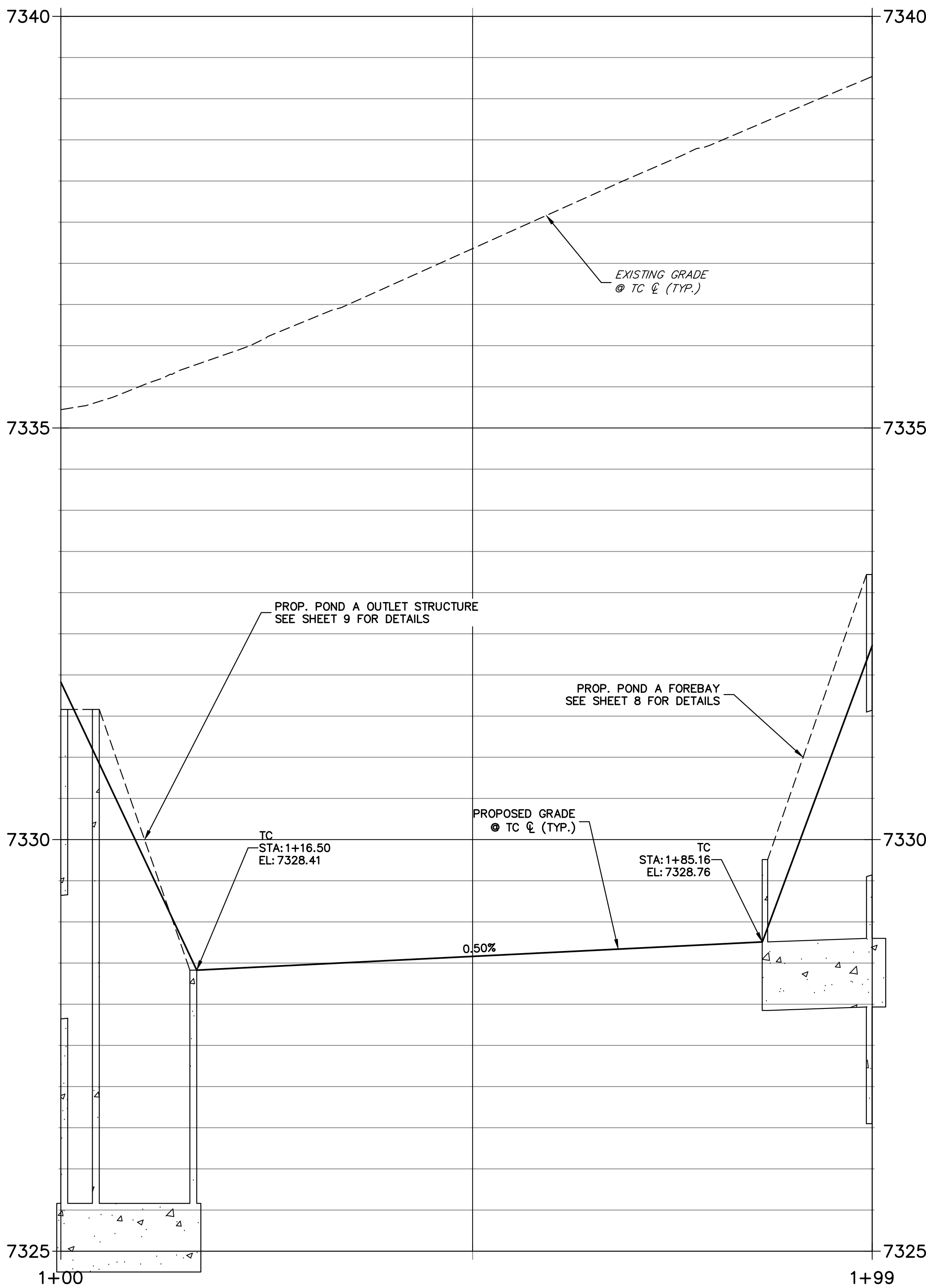
POND A SECTION A-A PROFILE  
STA 1+00.00 TO 2+23.90



POND A EMERGENCY  
SPILLWAY TYP. SECTION  
SCALE: 1"=5'

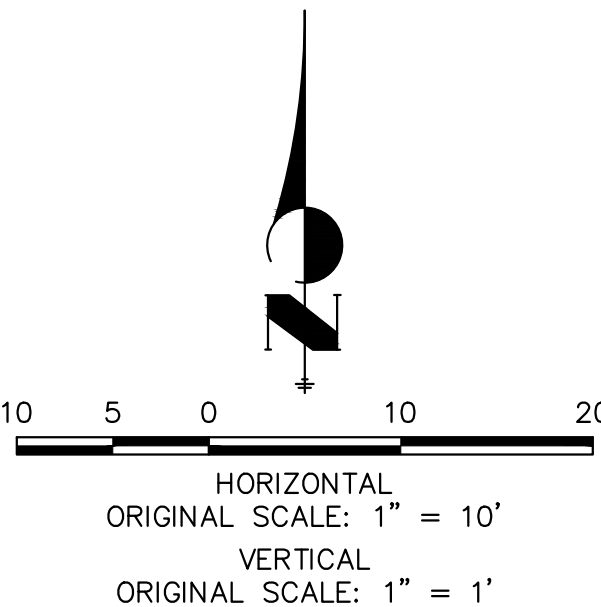
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POND A SECTION B-B PROFILE  
STA 1+00.00 TO 1+98.52



POND NOTES

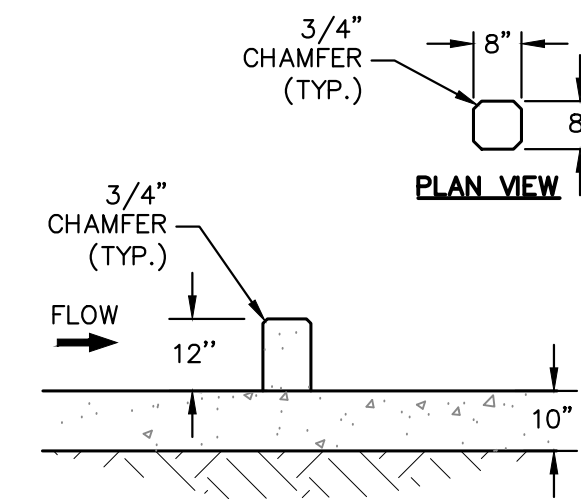
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- SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.



ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING

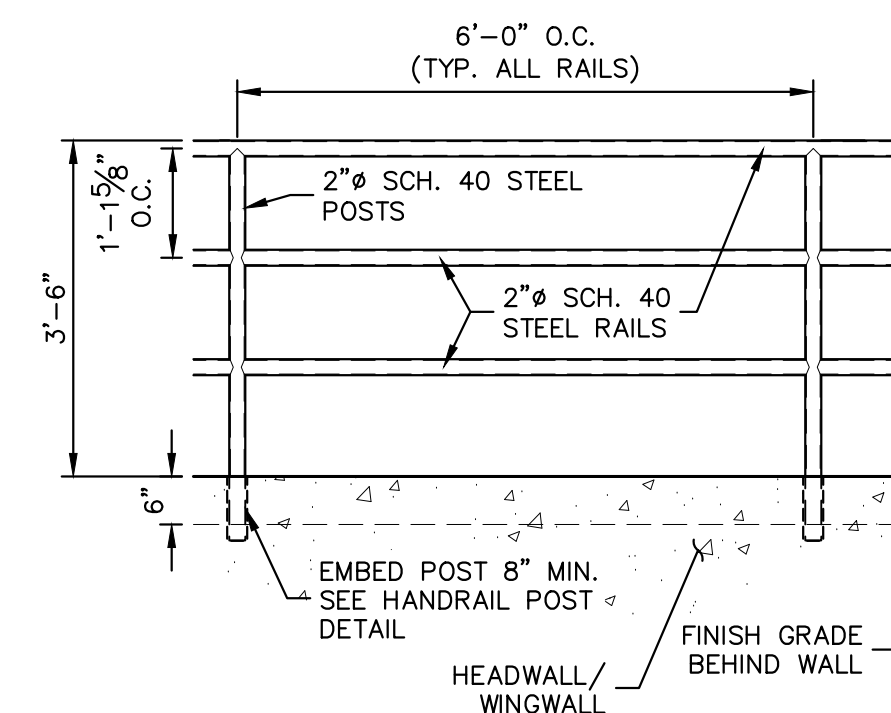




POND A FOREBAY  
SECONDARY BAFFLE BLOCK DETAILS

---

SCALE: 3/8"=1'



1 1/2"

4"

2 1/2"

8" (EMBED SLEEVE)

2" POST

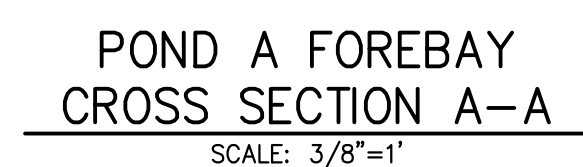
2 1/2" SCH. 40 SLEEVE

3/4" BOLT AND REMOVABLE NUT

CONCRETE HEADWALL

WINGWALL

PEDESTRIAN RAILING  
POST DETAIL  
SCALE: 1"=6'



UNTIL SUCH TIME AS  
THESE DRAWINGS ARE  
APPROVED BY THE  
APPROPRIATE REVIEWING  
AGENCIES, JR ENGINEERING  
APPROVES THEIR USE  
ONLY FOR THE PURPOSES  
DESIGNATED BY WRITTEN  
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VILLAGREE DEVELOPMENT LLC  
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COLORADO SPRINGS, CO 80908  
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 **J.R. ENGINEERING**  
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[illegible]

H-SCALE	3/8"=1'
V-SCALE	3/8"=1'
DATE	05/15/24
DESIGNED BY	GAG
DRAWN BY	GAG
CHECKED BY	

ESTATES AT CATHEDRAL  
PINES

---

POND PLANS AND DETAILS

---

SHEET 8 OF 16

JOB NO. 25260.00



Know what's **below**.  
**Call** before you dig.

### ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND, ON BEHALF OF JR  
ENGINEERING

\_\_\_\_\_  
 [Signature]

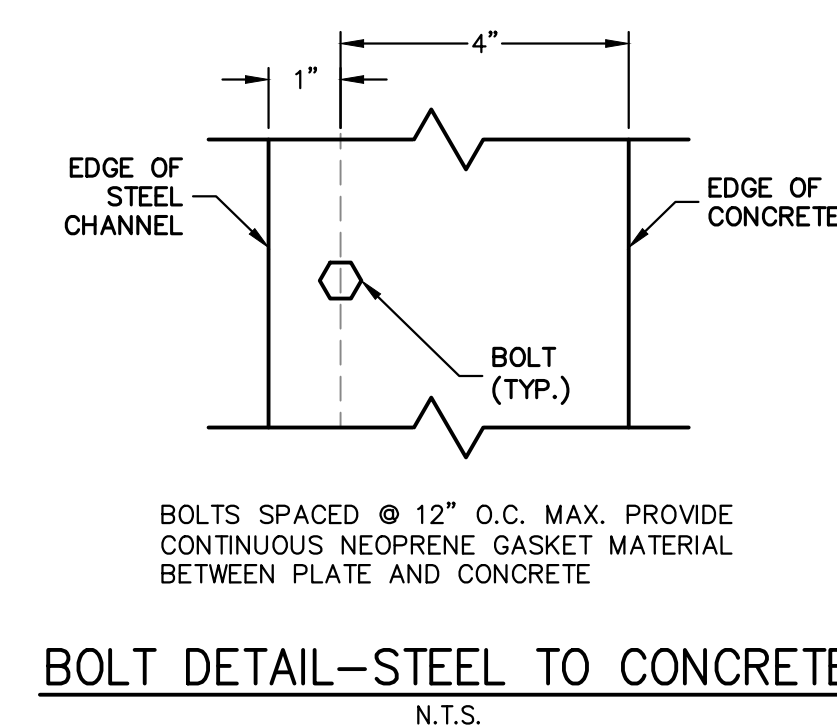
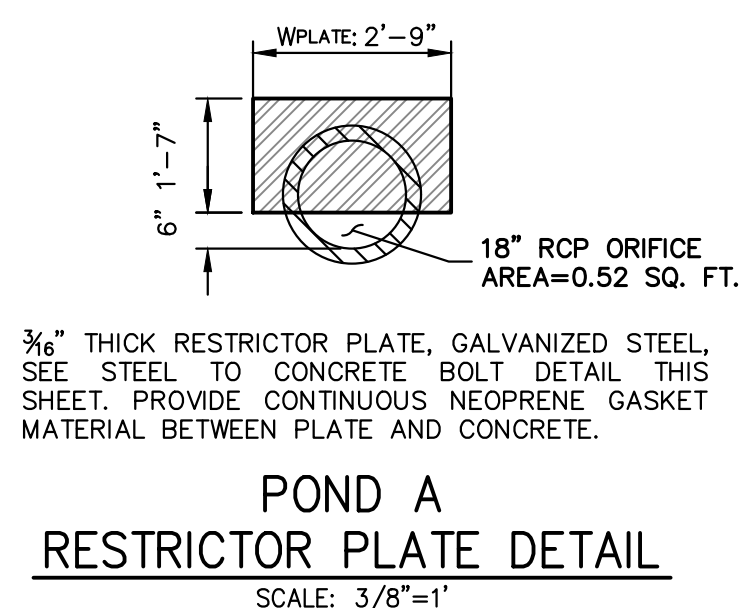
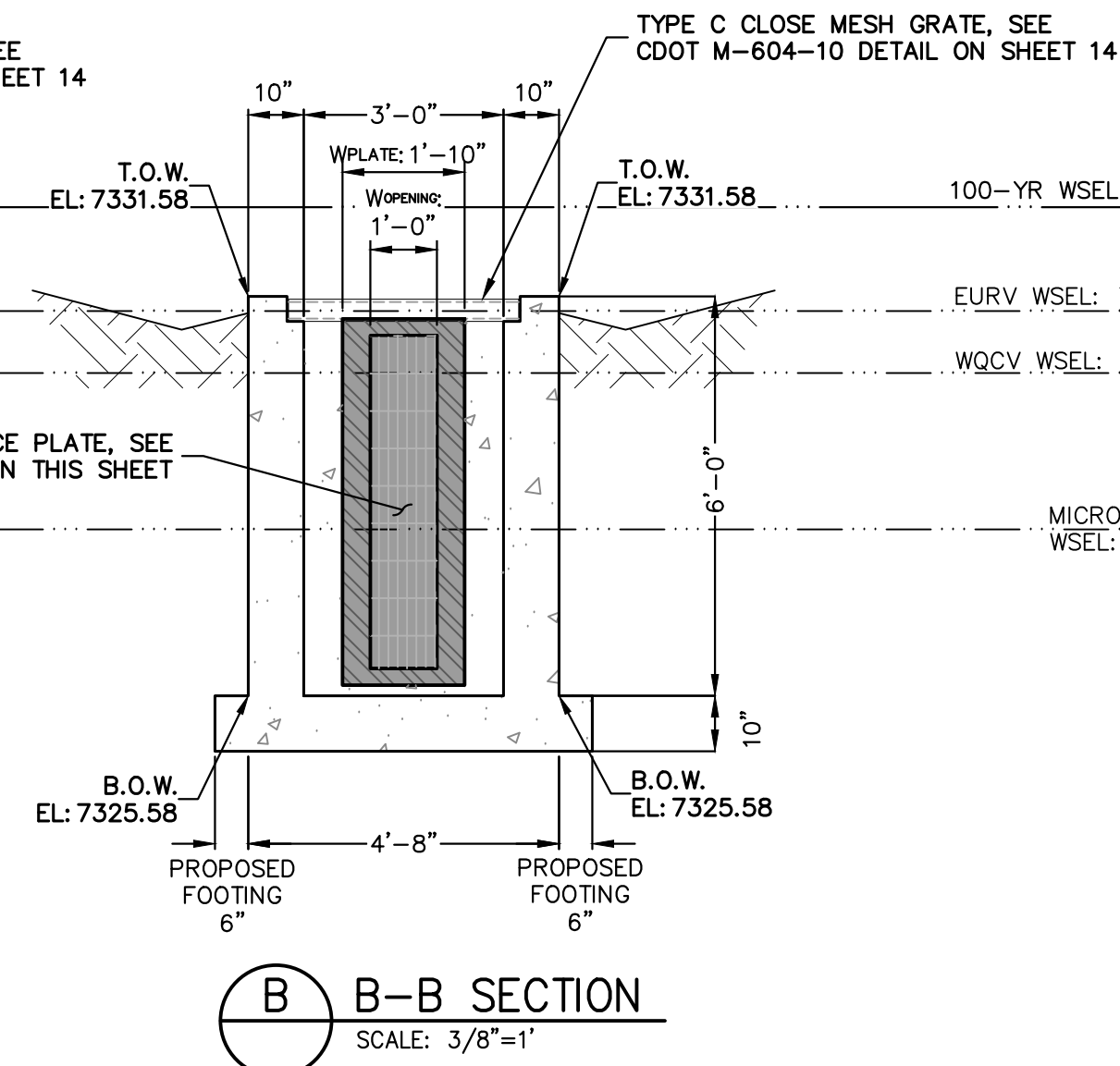
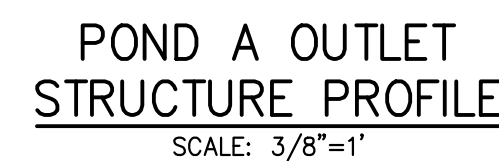
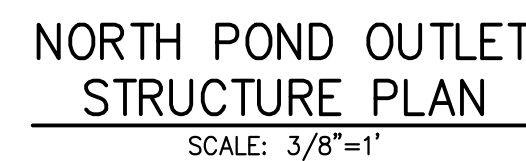
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

1. FOR AND ON BEHALF OF JR ENGINEERING

25043

7/12/24





**ORIFICE PLATE:**

1. PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE AND BETWEEN THE RESTRICTOR PLATE AND CONCRETE.
2. BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.

**TRASH RACKS:**

3. TRASH RACKS SHALL BE 1½" SCH.40 STEEL PIPE, GALVANIZED, @ 6" CENTERS. SUPPORT BARS SHALL BE ½"x2" STEEL RECTANGULAR BARS, GALVANIZED, @ 36". ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE.
4. REMOVABLE TRASH RACK SECTIONS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED & LOCKABLE OR BOLTABLE ACCESS PANELS AS SHOWN ON THE PLANS.
5. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
6. STRUCTURAL STEEL FOR GRATES, ORIFICE PLATES, AND BARS SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH CDDT STANDARD SPECIFICATIONS, SUBSECTION 712.06.
7. ALL HARDWARE, BOLTS, AND FASTENERS SHALL BE STAINLESS STEEL.
8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PLATES AND GRATING FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.

UNTIL SUCH TIME AS  
THESE DRAWINGS ARE  
APPROVED BY THE  
APPROPRIATE REVIEWING  
AGENCIES, JR ENGINEERING  
APPROVES THEIR USE  
ONLY FOR THE PURPOSES  
DESIGNATED BY WRITTEN  
AUTHORIZATION.

VILLAGREE DEVELOPMENT LLC  
5710 VESEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
(719) 413-6900

 **J·R ENGINEERING**  
A Westrian Company

Centennial 303-740-9983 • Colorado Springs 719-593-2593  
Fort Collins 970-491-9888 • [www.jrengineering.com](http://www.jrengineering.com)

No.	REVISION	BY	DATE
H-Scale 3/8" = 1'			
V-Scale 3/8" = 1'			
DATE	05/15/24	GAG	
DRAWN BY	GAG		
CHECKED BY			

ESTATES AT CATHEDRAL PINES	9	OF	16
POND PLANS AND DETAILS			
JOB NO.	25260.00		

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR

ENGINEERING  

25043 7/12/24

17/12/24

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

FOR AND ON BEHALF OF JR ENGINEERING, LLC



Know what's below.  
**Call** before you dig.

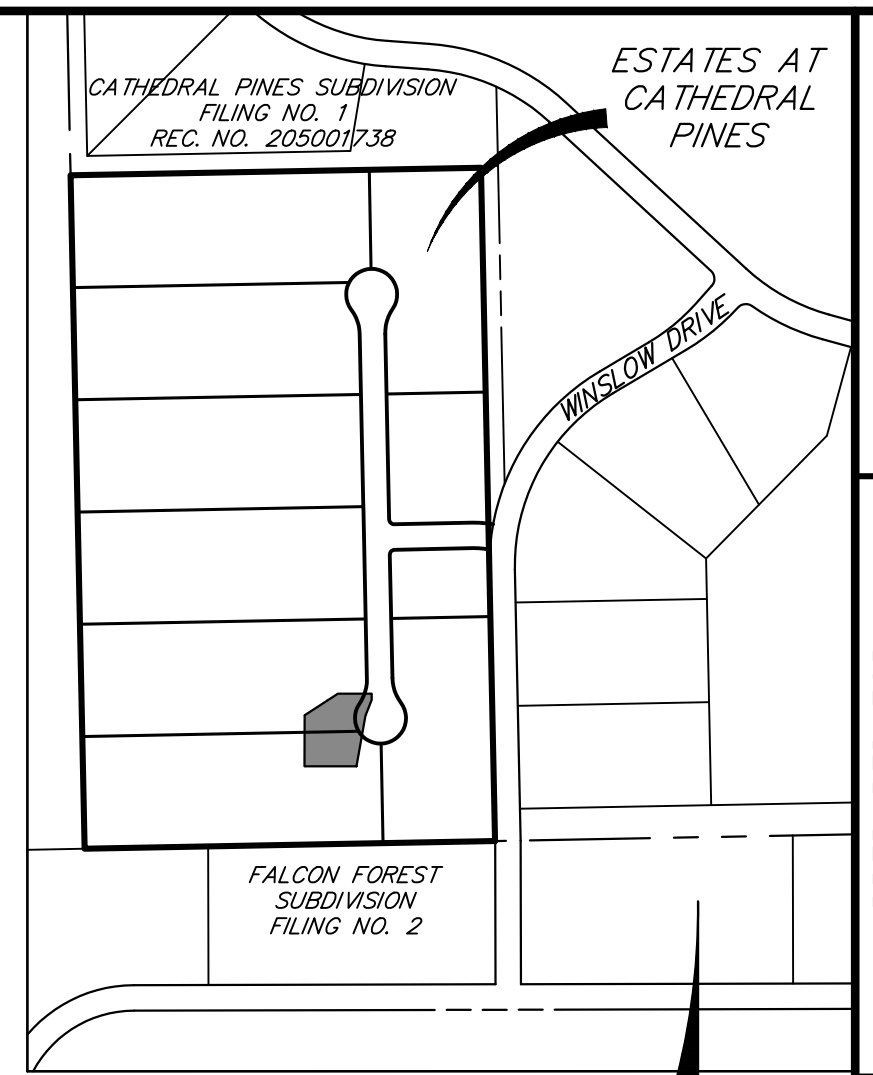


### POND NOTES

1. ALL PROPOSED POND IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
2. SEE SHEETS 3-5 FOR PROPOSED STORM SEWER DESIGN.
3. SEE PRIVATE STREET IMPROVEMENT PLANS BY JR ENGINEERING FOR PROPOSED PRIVATE STREET DESIGN.
4. SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S88°48'16"W	19.62'
L2	S58°08'56"W	81.12'
L3	S13°34'54"E	54.64'
L4	N01°59'19"W	53.56'
L5	N73°11'18"E	22.18'
L6	N73°11'18"E	6.24'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	30°39'20"	50.00'	26.75'
C2	71°43'51"	50.00'	62.60'
C4	75°10'37"	20.00'	26.24'



KEYMAP

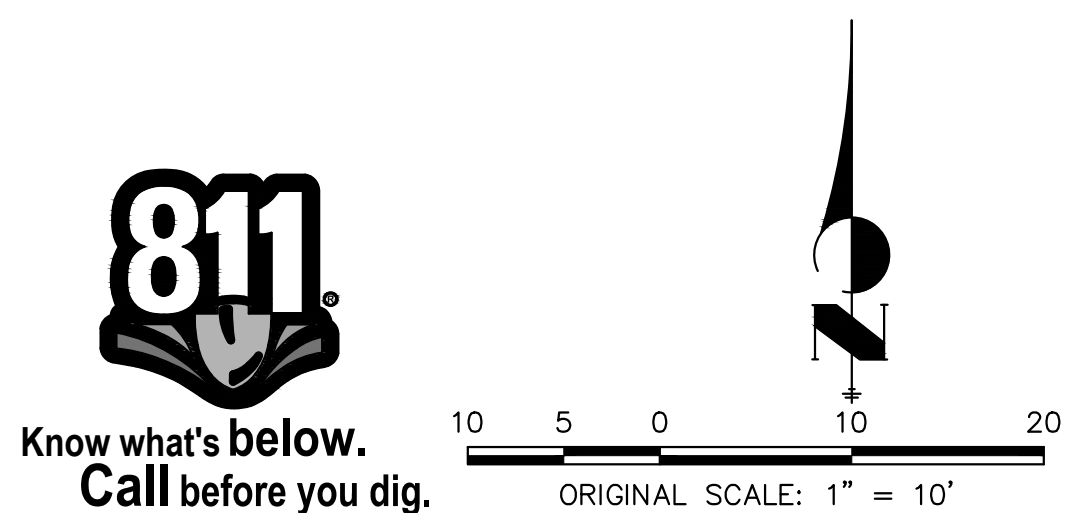
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SCALE: N.T.S



POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
M1	MAINT. ROAD CL	N: 436716.43 E: 215795.15	7343.21
M2	MAINT. ROAD CL	N: 436716.02 E: 215775.54	7343.03
M3	MAINT. ROAD CL	N: 436708.50 E: 215750.19	7340.52
M4	MAINT. ROAD CL	N: 436665.69 E: 215681.29	7332.93
M5	MAINT. ROAD CL	N: 436611.48 E: 215659.07	7329.90
M6	MAINT. ROAD CL	N: 436558.38 E: 215671.90	7324.97
S1	SPILLWAY/ TOP	N: 436573.58 E: 215646.33	7330.00
S2	SPILLWAY CREST	N: 436567.61 E: 215645.81	7328.50
S3	SPILLWAY CREST	N: 436557.64 E: 215644.94	7328.50
S4	SPILLWAY/ TOP	N: 436551.67 E: 215644.42	7330.00
S5	SPILLWAY/ LOW TAILWATER BASIN	N: 436551.49 E: 215611.86	7323.00
S6	SPILLWAY/ LOW TAILWATER BASIN	N: 436560.42 E: 215601.59	7319.20
T1	TOE	N: 436564.58 E: 215692.46	7325.13
T2	TOE	N: 436569.97 E: 215691.28	7325.23
T3	TOE	N: 436583.95 E: 215688.37	7325.23
T4	TOE	N: 436628.25 E: 215686.83	7325.56
T5	TOE	N: 436628.10 E: 215682.33	7325.56
T6	TOE	N: 436574.57 E: 215684.19	7325.16
T7	TOE	N: 436560.06 E: 215677.49	7325.02
T8	TOE	N: 436556.36 E: 215665.25	7324.91
T9	TOE	N: 436549.66 E: 215667.27	7324.91
T10	TOE	N: 436541.21 E: 215663.25	7325.08
T11	TOE	N: 436531.29 E: 215661.41	7325.32
T12	TOE	N: 436529.66 E: 215662.42	7325.39
T13	TOE	N: 436517.67 E: 215704.78	7326.40
T14	TOE	N: 436524.22 E: 215710.97	7326.32
T15	TOE	N: 436537.33 E: 215706.55	7325.89
T16	TOE	N: 436545.01 E: 215702.79	7325.61
T17	TOE	N: 436557.88 E: 215694.48	7325.13
T18	TOP	N: 436573.82 E: 215709.95	7330.00
T19	TOP	N: 436597.08 E: 215705.16	7330.00
T20	TOP	N: 436626.70 E: 215703.55	7330.00

POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
T21	TOP/ TRAIL	N: 436639.90 E: 215666.96	7330.00
T22	TOP/ TRAIL	N: 436607.45 E: 215653.87	7330.00
T23	TOP/ BERM	N: 436586.40 E: 215647.45	7330.00
T24	TOP/ BERM	N: 436532.91 E: 215642.78	7330.00
T25	TOP/ BERM	N: 436511.51 E: 215659.05	7330.00
T26	TOP/ BERM	N: 436503.51 E: 215702.15	7330.00
T27	TOP	N: 436527.15 E: 215725.40	7330.00
T28	TOP	N: 436540.60 E: 215722.67	7330.00
T29	TOP	N: 436552.77 E: 215718.52	7330.00
T30	TOP/ BERM	N: 436643.87 E: 215655.62	7330.00
T31	TOP/ BERM	N: 436603.51 E: 215639.35	7330.00
T32	TOP/ BERM	N: 436587.44 E: 215635.49	7330.00
T33	TOP/ BERM	N: 436533.96 E: 215630.82	7330.00
T34	TOP/ BERM	N: 436499.71 E: 215656.86	7330.00
T35	TOP/ BERM	N: 436491.71 E: 215699.96	7330.00
T36	TOP/ BERM	N: 436491.18 E: 215705.93	7330.00
TC1	TC CL FLOWLINE	N: 436561.23 E: 215693.47	7324.63
TC2	TC CL FLOWLINE	N: 436554.81 E: 215672.23	7324.46
TC3	TC CL FLOWLINE	N: 436628.18 E: 215684.58	7325.06
TC4	TC CL FLOWLINE	N: 436574.65 E: 215686.44	7324.66
TC5	TC CL FLOWLINE	N: 436553.01 E: 215666.26	7324.41



PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR  
ENGINEERING

*[Signature]*

BRYAN T. LAW, P.E.  
COLORADO P.E. 25043

FOR AND ON BEHALF OF JR ENGINEERING, LLC

PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
(719) 413-6900

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Fort Collins 970-491-9888 • [www.jrenateering.com](http://www.jrenateering.com)

BY	DATE
----	------

No.	REVISION
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1"-10'

HCCAF

ESTATES AT CATHEDRAL  
PINES

## POND PLANS AND DETAILS

SHEET 10 OF 16

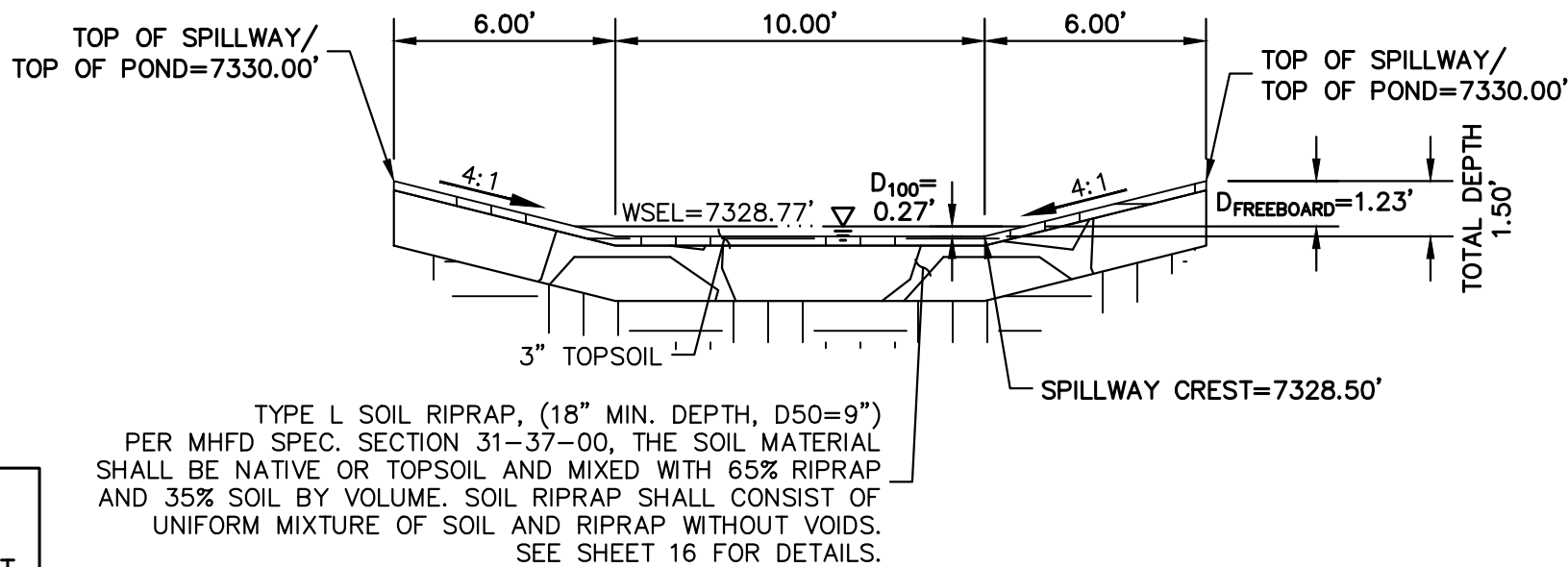
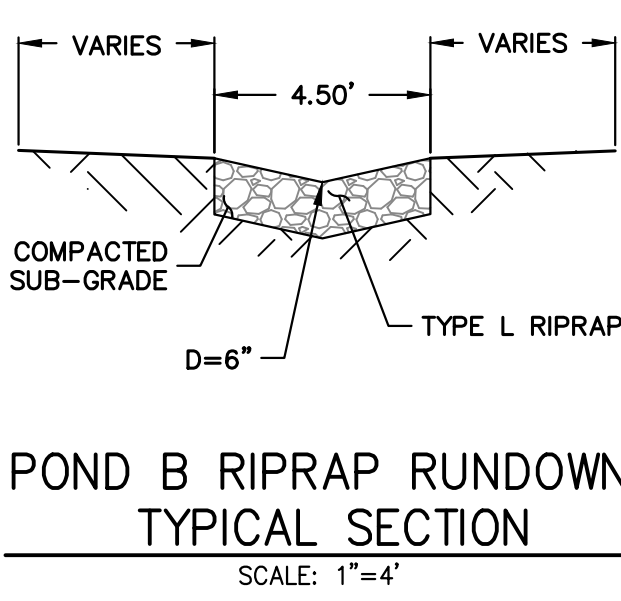
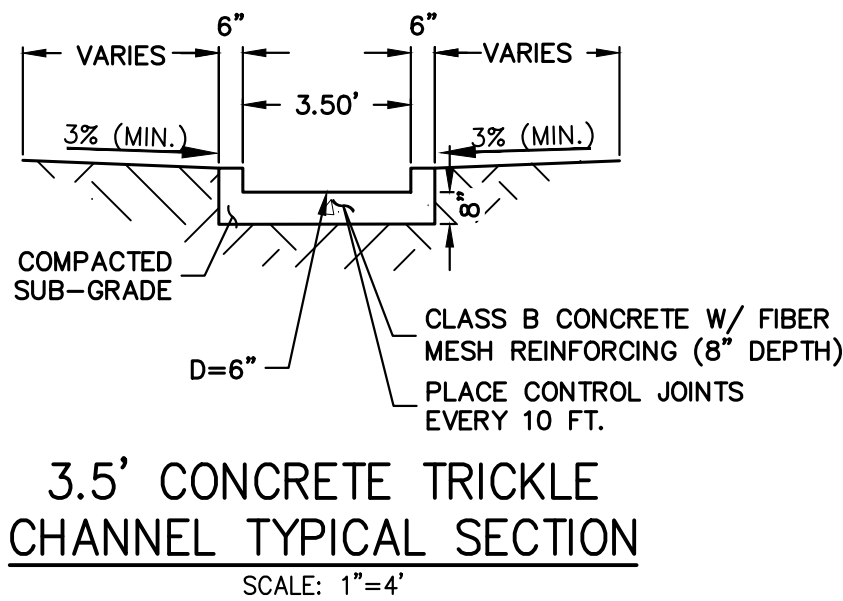
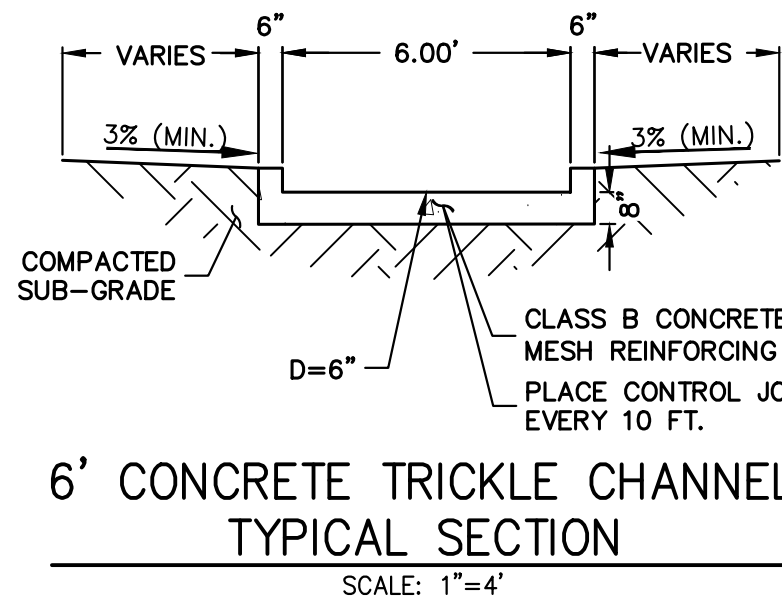
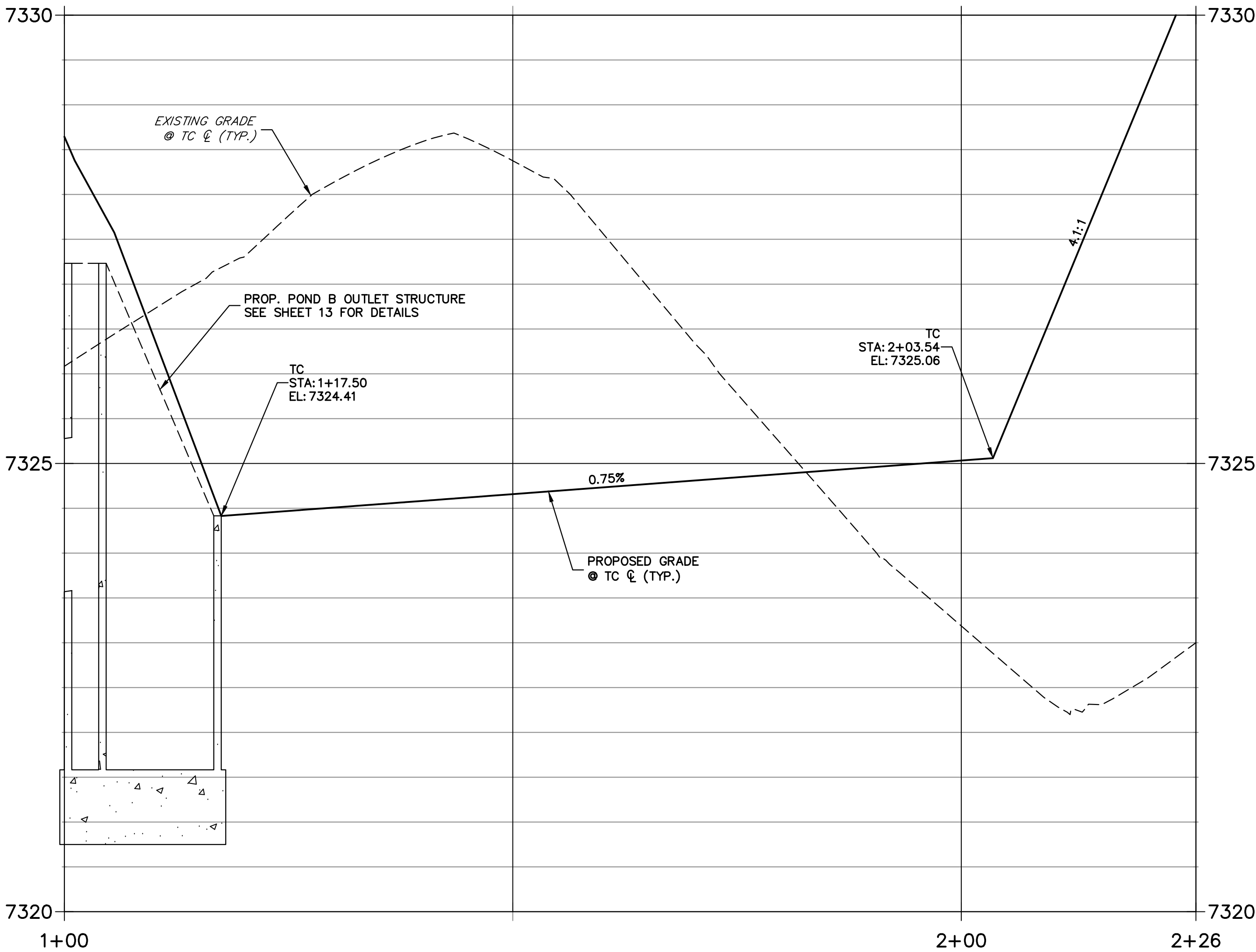
JOB NO. 25260.00



POND NOTES

1. ALL PROPOSED POND IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
2. SEE SHEETS 3-5 FOR PROPOSED STORM SEWER DESIGN.
3. SEE PRIVATE STREET IMPROVEMENT PLANS BY JR ENGINEERING FOR PROPOSED PRIVATE STREET DESIGN.
4. SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.

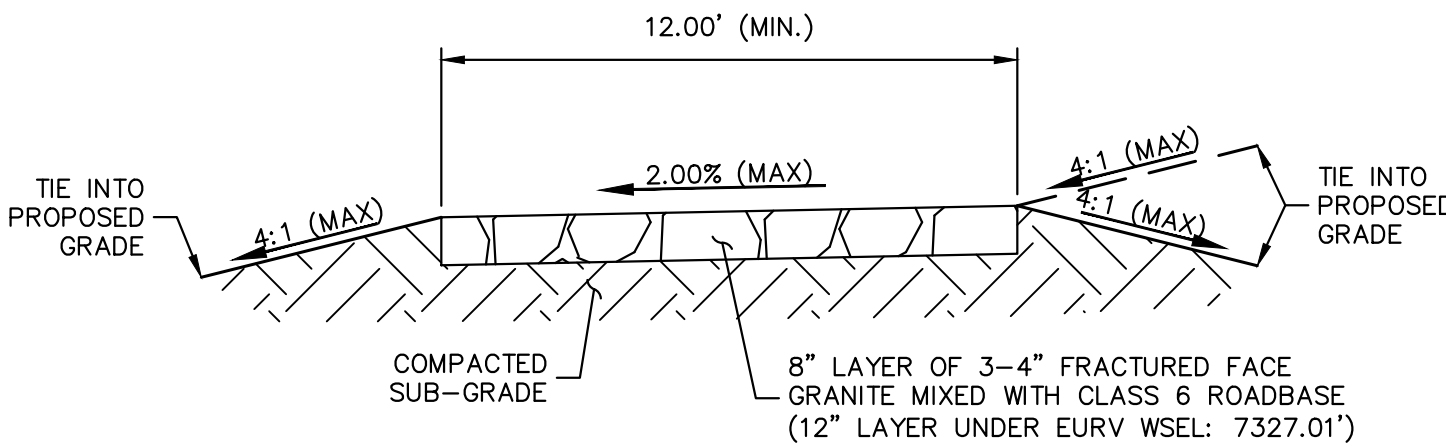
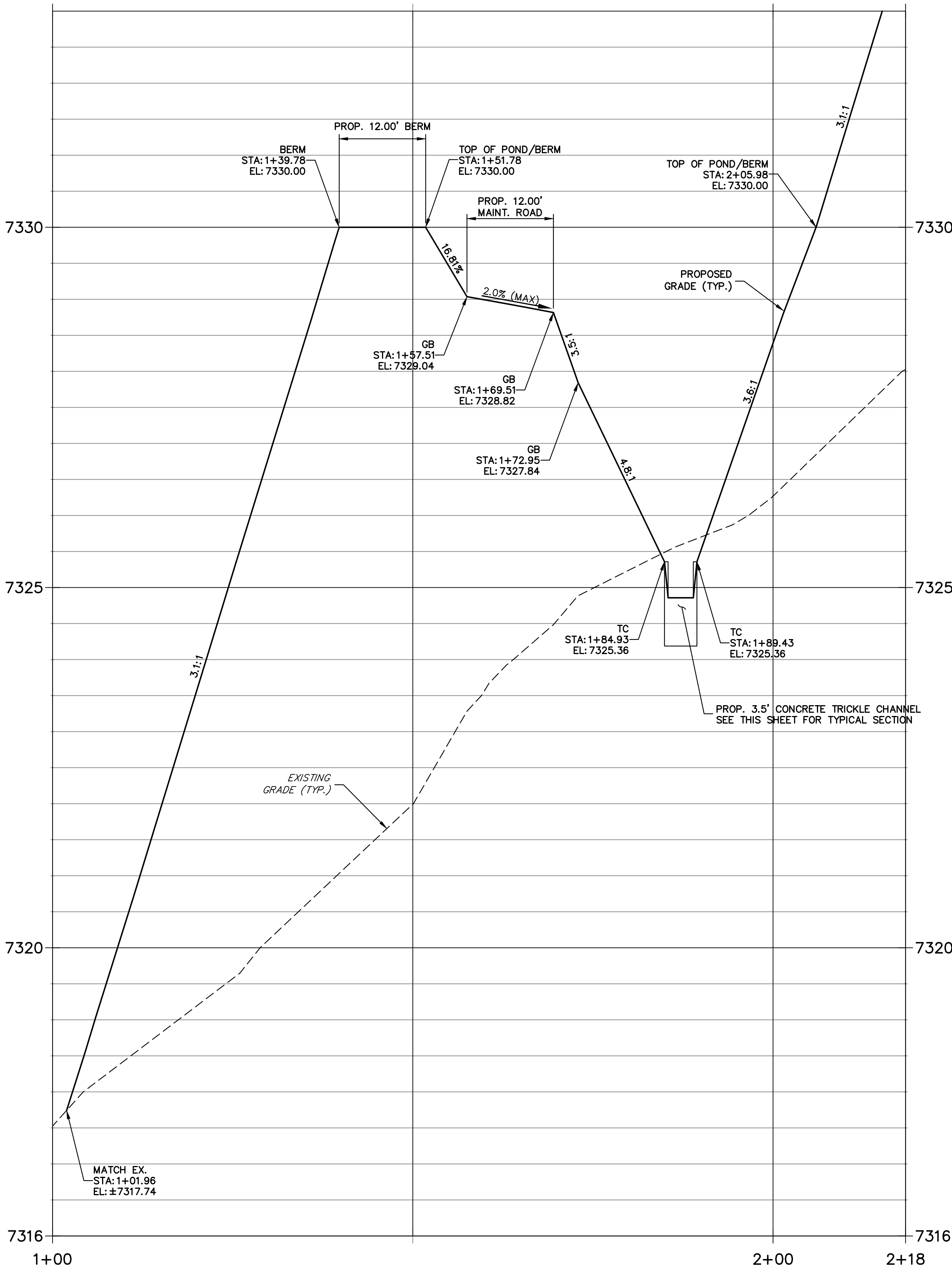
POND B SECTION A-A PROFILE  
STA 1+00.00 TO 2+26.17



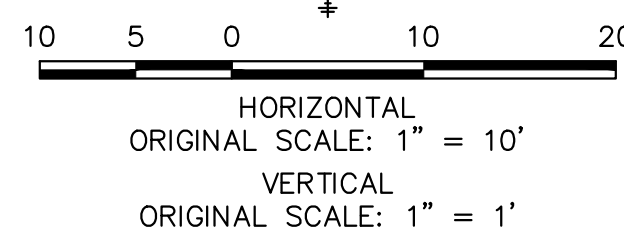
THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

POND B EMERGENCY SPILLWAY TYP. SECTION  
SCALE: 1"=5'

POND B SECTION B-B PROFILE  
STA 1+00.00 TO 2+18.39



POND B GRAVEL MAINTENANCE ACCESS ROAD TYPICAL SECTION  
SCALE: N.T.S.



ENGINEER'S STATEMENT

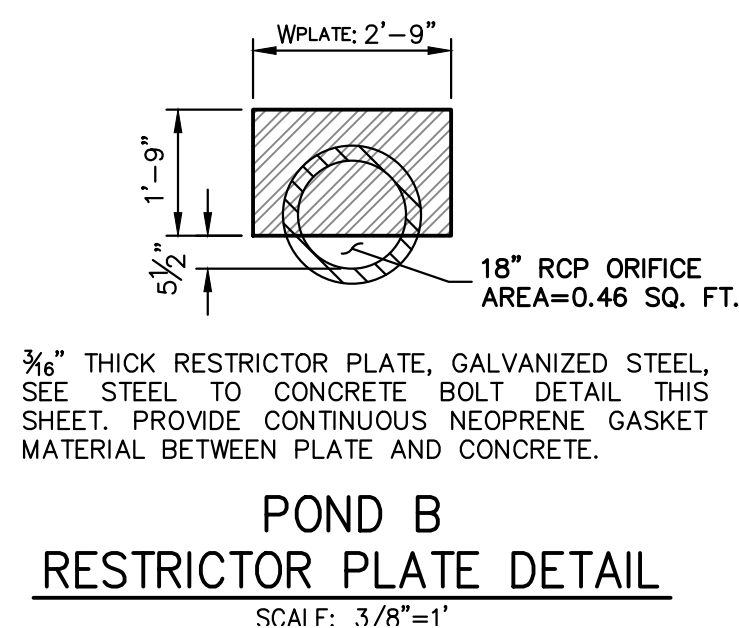
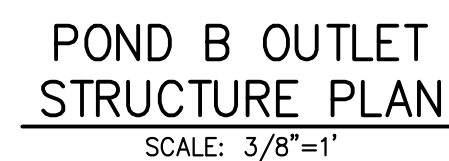
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING

ESTATES AT CATHEDRAL PINES	POND PLANS AND DETAILS	SHEET 11 OF 16			
		JOB NO. 25260.00			
BY	DATE	PREPARED FOR			
		VILLAGREE DEVELOPMENT LLC			
		5710 VESSEY RD			
No.	REVISION	COLORADO SPRINGS, CO 80908			
		GREGG & ELAINE CAWFIELD			
		(719) 413-6900			
H-SCALE	V-SCALE	UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN FEET AND INCHES.			
		1"=10'			
		1"=1'			
DESIGNED BY	DRAWN BY	GAG			
		GAG			
		GAG			
DATE	CHECKED BY	7/12/24			
		25043			
		25043			









- PREPARED FOR

VILLAGREE DEVELOPMENT LLC  
5710 VESSEY RD  
COLORADO SPRINGS, CO 80908  
GREGG & ELAINE CAWLFIELD  
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H-SCALE	NO.	REVISION	BY	DATE
V-SCALE				
3/8"=1'				
DATE				
DESIGNED BY				
GAG				
DRAWN BY				
GAG				
CHECKED BY				

ESTATES AT CATHEDRAL PINES	
POND PLANS AND DETAILS	
SHEET 13	OF 16
JOB NO.	25260.00



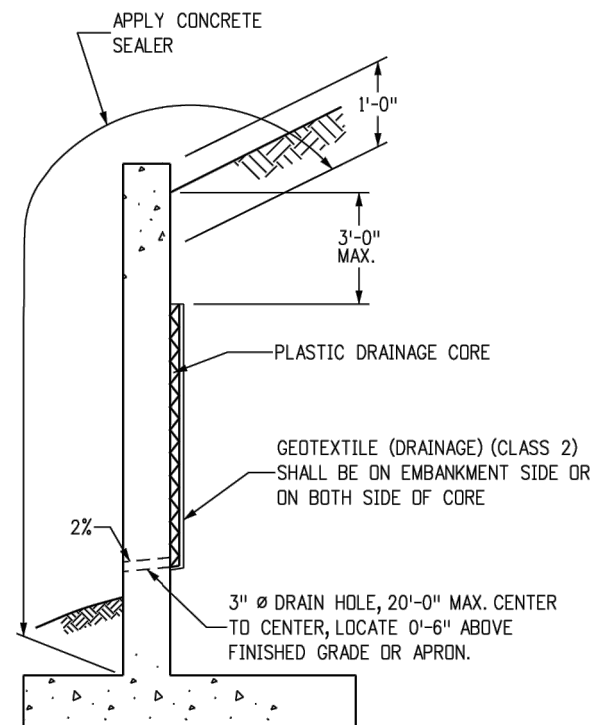




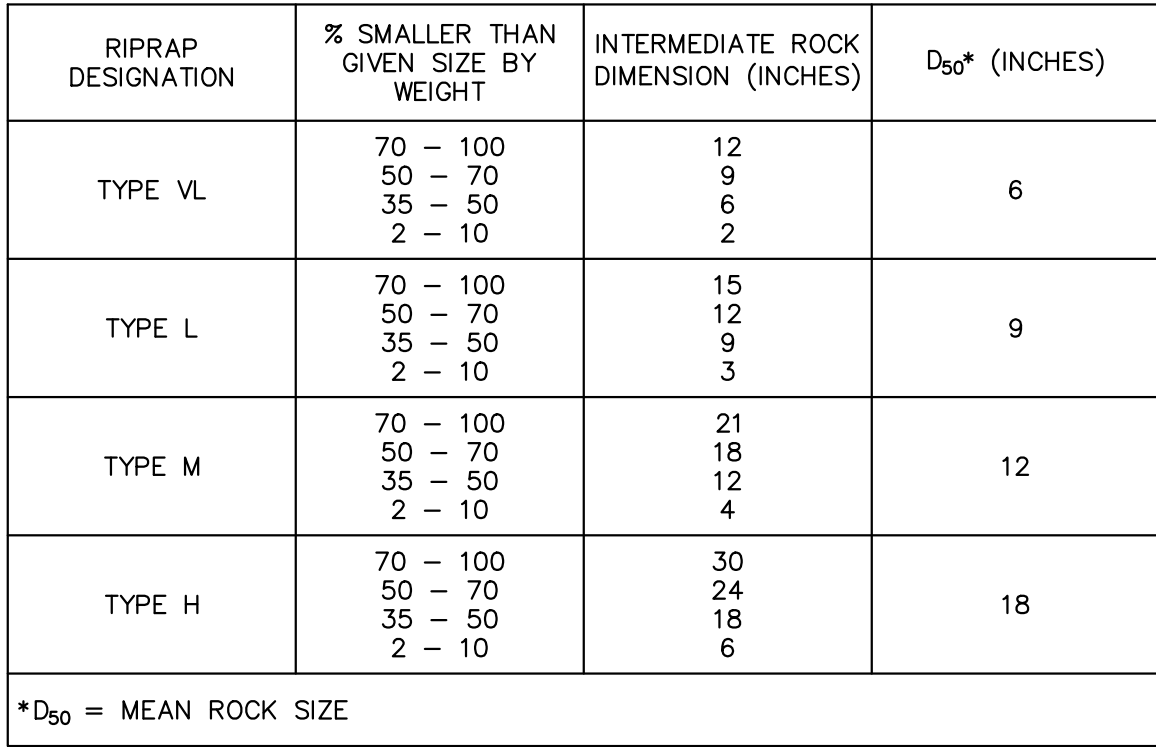
c-BARS AND REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)										* REINFORCING STEEL QUANTITY INCLUDES STEM AND FOOTING QUANTITIES, BUT DOES NOT INCLUDE TOE WALL QUANTITIES.									
L (MULTIPLE OF) m	k (FT)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)	c-BARS	* REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)
14	4	#4 @ 10"	53.60	#5 @ 10"	57.95	#5 @ 10"	57.10	#5 @ 10"	57.10	#5 @ 10"	57.10	#5 @ 10"	57.10	#5 @ 10"	57.10	#5 @ 10"	57.10	#5 @ 10"	57.10
5	#4 @ 10"	55.86	#5 @ 10"	60.46	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"	59.60	#5 @ 10"
6	#5 @ 10"	64.43	#6 @ 10"	70.60	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"	69.69	#6 @ 10"
7	#5 @ 10"	67.29	#6 @ 10"	73.76	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"	72.83	#6 @ 10"
8	#5 @ 8"	74.71	#6 @ 8"	83.46	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"	82.09	#6 @ 8"
9	#5 @ 8"	78.10	#6 @ 8"	87.23	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"	85.51	#6 @ 8"
13	4	#4 @ 10"	50.51	#5 @ 10"	49.25	#5 @ 10"	48.25	#5 @ 10"	48.25	#5 @ 10"	48.25	#5 @ 10"	48.25	#5 @ 10"	48.25	#5 @ 10"	48.25	#5 @ 10"	48.25
5	#4 @ 10"	52.66	#5 @ 10"	51.37	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"	50.09	#5 @ 10"
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9	#5 @ 10"	69.37	#6 @ 10"	76.10	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"	74.55	#6 @ 10"
12	2	#4 @ 10"	43.91	#4 @ 10"	42.65	#4 @ 10"	41.82	#4 @ 10"	41.22	#4 @ 10"	40.78	#4 @ 10"	40.28	#4 @ 10"	39.84	#4 @ 10"	39.40	#4 @ 10"	38.96
3	#4 @ 10"	45.82	#4 @ 10"	44.55	#4 @ 10"	43.71	#4 @ 10"	43.11	#4 @ 10"	42.66	#4 @ 10"	42.22	#4 @ 10"	41.78	#4 @ 10"	41.34	#4 @ 10"	40.90	#4 @ 10"
4	#4 @ 10"	47.80	#4 @ 10"	46.51	#4 @ 10"	45.65	#4 @ 10"	45.06	#4 @ 10"	44.59	#4 @ 10"	44.15	#4 @ 10"	43.71	#4 @ 10"	43.27	#4 @ 10"	42.83	#4 @ 10"
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7	#4 @ 10"	54.30	#4 @ 10"	52.94	#4 @ 10"	52.07	#4 @ 10"	51.47	#4 @ 10"	51.00	#4 @ 10"	50.56	#4 @ 10"	50.12	#4 @ 10"	49.68	#4 @ 10"	49.24	#4 @ 10"
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9	#5 @ 10"	65.64	#6 @ 10"	64.15	#6 @ 10"	63.28	#6 @ 10"	62.68	#6 @ 10"	62.24	#6 @ 10"	61.80	#6 @ 10"	61.36	#6 @ 10"	60.92	#6 @ 10"	60.48	#6 @ 10"
11	2	#4 @ 10"	41.70	#4 @ 10"	40.42	#4 @ 10"	39.57	#4 @ 10"	38.96	#4 @ 10"	38.50	#4 @ 10"	38.15	#4 @ 10"	37.87	#4 @ 10"	37.63	#4 @ 10"	37.43
3	#4 @ 10"	43.57	#4 @ 10"	42.27	#4 @ 10"	41.40	#4 @ 10"	40.79	#4 @ 10"	40.33	#4 @ 10"	39.97	#4 @ 10"	39.69	#4 @ 10"	39.45	#4 @ 10"	39.21	#4 @ 10"
4	#4 @ 10"	45.48	#4 @ 10"	44.16	#4 @ 10"	43.28	#4 @ 10"	42.66	#4 @ 10"	42.22	#4 @ 10"	41.78	#4 @ 10"	41.34	#4 @ 10"	40.90	#4 @ 10"	40.46	#4 @ 10"
5	#4 @ 10"	47.46	#4 @ 10"	46.10	#4 @ 10"	45.21	#4 @ 10"	44.58	#4 @ 10"	44.15	#4 @ 10"	43.71	#4 @ 10"	43.27	#4 @ 10"	42.83	#4 @ 10"	42.39	#4 @ 10"
6	#4 @ 10"	49.52	#4 @ 10"	48.14	#4 @ 10"	47.23	#4 @ 10"	46.60	#4 @ 10"	46.17	#4 @ 10"	45.73	#4 @ 10"	45.29	#4 @ 10"	44.85	#4 @ 10"	44.41	#4 @ 10"
7	#4 @ 10"	51.73	#4 @ 10"	50.31	#4 @ 10"	49.39	#4 @ 10"	48.76	#4 @ 10"	48.32	#4 @ 10"	47.88	#4 @ 10"	47.44	#4 @ 10"	47.00	#4 @ 10"	46.56	#4 @ 10"
8	#4 @ 10"	54.00	#4 @ 10"	52.54	#4 @ 10"	51.62	#4 @ 10"	50.99	#4 @ 10"	50.55	#4 @ 10"	50.11	#4 @ 10"	49.67	#4 @ 10"	49.23	#4 @ 10"	48.79	#4 @ 10"
9	#4 @ 10"	56.20	#4 @ 10"	54.70	#4 @ 10"	53.78	#4 @ 10"	53.15	#4 @ 10"	52.71	#4 @ 10"	52.27	#4 @ 10"	51.83	#4 @ 10"	51.39	#4 @ 10"	50.95	#4 @ 10"
10	2	#4 @ 10"	39.84	#4 @ 10"	38.53	#4 @ 10"	37.65	#4 @ 10"	37.03	#4 @ 10"	36.57	#4 @ 10"	36.20	#4 @ 10"	35.91	#4 @ 10"	35.67	#4 @ 10"	35.43
3	#4 @ 10"	41.68	#4 @ 10"	40.35	#4 @ 10"	39.47	#4 @ 10"	38.84	#4 @ 10"	38.38	#4 @ 10"	37.94	#4 @ 10"	37.50	#4 @ 10"	37.06	#4 @ 10"	36.62	#4 @ 10"
4	#4 @ 10"	43.58	#4 @ 10"	42.22	#4 @ 10"	41.31	#4 @ 10"	40.67	#4 @ 10"	40.23	#4 @ 10"	39.79	#4 @ 10"	39.35	#4 @ 10"	38.91	#4 @ 10"	38.47	#4 @ 10"
5	#4 @ 10"	45.53	#4 @ 10"	44.14	#4 @ 10"	43.21	#4 @ 10"	42.56	#4 @ 10"	42.12	#4 @ 10"	41.68	#4 @ 10"	41.24	#4 @ 10"	40.80	#4 @ 10"	40.36	#4 @ 10"
6	#4 @ 10"	47.58	#4 @ 10"	46.14	#4 @ 10"	45.20	#4 @ 10"	44.53	#4 @ 10"	44.09	#4 @ 10"	43.65	#4 @ 10"	43.21	#4 @ 10"	42.77	#4 @ 10"	42.33	#4 @ 10"
7	#4 @ 10"	49.79	#4 @ 10"	48.31	#4 @ 10"	47.34	#4 @ 10"	46.67	#4 @ 10"	46.23	#4 @ 10"	45.79	#4 @ 10"	45.35	#4 @ 10"	44.91	#4 @ 10"	44.47	#4 @ 10"
8	#4 @ 10"	52.06	#4 @ 10"	50.54	#4 @ 10"	49.54	#4 @ 10"	48.87	#4 @ 10"	48.43	#4 @ 10"	47.99	#4 @ 10"	47.55	#4 @ 10"	47.11	#4 @ 10"	46.67	#4 @ 10"
9	#4 @ 10"	54.30	#4 @ 10"	52.74	#4 @ 10"	51.74	#4 @ 10"	51.07	#4 @ 10"	50.63	#4 @ 10"	50.19	#4 @ 10"	49.75	#4 @ 10"	49.31	#4 @ 10"	48.87	#4 @ 10"
11	2	#4 @ 10"	38.01	#4 @ 10"	36.75	#4 @ 10"	35.85	#4 @ 10"	35.21	#4 @ 10"	34.73	#4 @ 10"	34.36	#4 @ 10"	34.01	#4 @ 10"	33.66	#4 @ 10"	33.30
3	#4 @ 10"	39.93	#4 @ 10"	38.56	#4 @ 10"	37.64	#4 @ 10"	36.99	#4 @ 10"	36.51	#4 @ 10"	36.13	#4 @ 10"	35.83	#4 @ 10"	35.58	#4 @ 10"	35.33	#4 @ 10"
4	#4 @ 10"	41.81	#4 @ 10"	40.40	#4 @ 10"	39.47	#4 @ 10"	38.81	#4 @ 10"	38.33	#4 @ 10"	37.93	#4 @ 10"	37.63	#4 @ 10"	37.37	#4 @ 10"	37.11	#4 @ 10"
5	#4 @ 10"	43.75	#4 @ 10"	42.30	#4 @ 10"	41.35	#4 @ 10"	40.67	#4 @ 10"	40.17	#4 @ 10"	39.78	#4 @ 10"	39.47	#4 @ 10"	39.20	#4 @ 10"	38.94	#4 @ 10"
6	#4 @ 10"	45.79	#4 @ 10"	44.30	#4 @ 10"	43.31	#4 @ 10"	42.62	#4 @ 10"	42.10	#4 @ 10"	41.71	#4 @ 10"	41.39	#4 @ 10"	41.12	#4 @ 10"	40.85	#4 @ 10"
7	#4 @ 10"	48.04	#4 @ 10"	46.50	#4 @ 10"	45.49	#4 @ 10"	44.77	#4 @ 10"	44.23	#4 @ 10"	43.79	#4 @ 10"	43.35	#4 @ 10"	42.91	#4 @ 10"	42.47	#4 @ 10"
8	#4 @ 10"	50.43	#4 @ 10"	48.84	#4 @ 10"	47.80	#4 @ 10"	47.06	#4 @ 10"	46.51	#4 @ 10"	46.07	#4 @ 10"	45.63	#4 @ 10"	45.19	#4 @ 10"	44.75	#4 @ 10"
9	#4 @ 10"	52.84	#4 @ 10"	51.20	#4 @ 10"	50.15	#4 @ 10"	49.40	#4 @ 10"	48.85	#4 @ 10"	48.40	#4 @ 10"	47.95	#4 @ 10"	47.50	#4 @ 10"	47.05	#4 @ 10"
10	2	#4 @ 10"	36.41	#4 @ 10"	35.08	#4 @ 10"	34.20	#4 @ 10"	33.54	#4 @ 10"	33.06	#4 @ 10"	32.69	#4 @ 10"	32.39	#4 @ 10"	32.11	#4 @ 10"	31.83
3	#4 @ 10"	38.23	#4 @ 10"	36.81	#4 @ 10"	35.85	#4 @ 10"	35.16	#4 @ 10"	34.67	#4 @ 10"	34.28	#4 @ 10"	33.87	#4 @ 10"	33.50	#4 @ 10"	33.13	#4 @ 10"
4	#4 @ 10"	40.09	#4 @ 10"	38.61	#4 @ 10"	37.64	#4 @ 10"	36.95	#4 @ 10"	36.44	#4 @ 10"	36.04	#4 @ 10"	35.72	#4 @ 10"	35.45	#4 @ 10"	35.17	#4 @ 10"
5	#4 @ 10"	41.99	#4 @ 10"	40.47	#4 @ 10"	39.47	#4 @ 10"	38.76	#4 @ 10"	38.24	#4 @ 10"	37.83	#4 @ 10"	37.50	#4 @ 10"	37.23	#4 @ 10"	36.96	#4 @ 10"
6	#4 @ 10"	43.97	#4 @ 10"	42.40	#4 @ 10"	41.36	#4 @ 10"	40.64	#4 @ 10"	40.10	#4 @ 10"	39.68	#4 @ 10"	39.35	#4 @ 10"	39.07	#4 @ 10"	38.79	#4 @ 10"
7	#4 @ 10"	46.19	#4 @ 10"	44.56	#4 @ 10"	43.49	#4 @ 10"	42.74	#4 @ 10"	42.18	#4 @ 10"	41.75	#4 @ 10"	41.41	#4 @ 10"	41.13	#4 @ 10"	40.85	#4 @ 10"
8	#4 @ 10"	48.50	#4 @ 10"	46.81	#4 @ 10"	45.69	#4 @ 10"	44.92	#4 @ 10"	44.35	#4 @ 10"	43.92	#4 @ 10"	43.58	#4 @ 10"	43.24	#4 @ 10"	42.90	#4 @ 10"
9	#4 @ 10"	50.84	#4 @ 10"	49.10	#4 @ 10"	47.95	#4 @ 10"	47.16	#4 @ 10"	46.57	#4 @ 10"	46.14	#4 @ 10"	45.79	#4 @ 10"	45.44	#4 @ 10"	45.09	#4 @ 10"
11	2	#4 @ 10"	34.90	#4 @ 10"	33.44	#4 @ 10"	32.47	#4 @ 10"	31.78	#4 @ 10"	31.27	#4 @ 10"	30.86	#4 @ 10"	30.54	#4 @ 10"	30.27	#4 @ 10"	29.97
3	#4 @ 10"	36.73	#4 @ 10"	35.23	#4 @ 10"	34.23	#4 @ 10"	33.53	#4 @ 10"	33.00	#4 @ 10"	32.59	#4 @ 10"	32.26	#4 @ 10"	31.99	#4 @ 10"	31.78	#4 @ 10"
4	#4 @ 10"	38.59	#4 @ 10"	37.04	#4 @ 10"	36.01	#4 @ 10"	35.29	#4 @ 10"	34.75	#4 @ 10"	34.33	#4 @ 10"	33.99	#4 @ 10"	33.71	#4 @ 10"	33.50	#4 @ 10"
5	#4 @ 10"	40.48	#4 @ 10"	38.86	#4 @ 10"	37.80	#4 @ 10"	37.06	#4 @ 10"	36.50	#4 @ 10"	36.07	#4 @ 10"	35.73	#4 @ 10"	35.44	#4 @ 10"	35.22	#4 @ 10"
6	#4 @ 10"	42.39	#4 @ 10"	40.71	#4 @ 10"	39.61	#4 @ 10"	38.84	#4 @ 10"	38.26	#4 @ 10"	37.82	#4 @ 10"	37.47	#4 @ 10"	37.17	#4 @ 10"	36.95	#4 @ 10"

**EXAMPLE:**  
SELECT THE c-BARS SIZE, SPACING AND STEEL QUANTITY FOR A 25.0 FEET LONG WINGWALL WITH m = 11.8 FT. AND k = 6.3 FT.

**SOLUTION:**  
1. DETERMINE WINGWALL LENGTH IN MULTIPLE OF m:  
L / m = 25.0 / 11.8 = 2.12  
L = (2.12 x m), USE L ≤ (2.25 x m)  
2. ROUND TO NEAREST WHOLE NUMBER FOR m AND k:  
m = 11.8 FT., USE m = 12.0 FT.  
k = 6.3 FT., USE k = 6.0 FT.  
3. DETERMINE c-BARS BY USING THE TABLE:  
L ≤ (2.25 x m)  
m = 12  
k = 6  
c-BARS: #6 @ 10"  
REIN. STEEL = 60.60 LB / LF  
4. DETERMINE REINFORCING STEEL QUANTITY OF WHOLE WINGWALL:  
REINFORCING STEEL QUANTITY = 25.0 x 60.60 = 1,515 LB.







1. ELEVATION TOLERANCES FOR THE SOIL RIPRAP SHALL BE 0.10 FEET. THICKNESS OF SOIL RIPRAP SHALL BE NO LESS THAN THICKNESS SHOWN AND NO MORE THAN 2-INCHES GREATER THAN THE THICKNESS SHOWN.
2. WHERE "SOIL RIPRAP" IS DESIGNATED ON THE CONTRACT DRAWINGS, RIPRAP VOIDS ARE TO BE FILLED WITH NATIVE SOIL THE RIPRAP SHALL BE PRE-MIXED WITH THE NATIVE SOIL AT THE FOLLOWING PROPORTIONS BY VOLUME: 65 PERCENT RIPRAP AND 35 PERCENT SOIL THE SOIL USED FOR MIXING SHALL BE NATIVE TOPSOIL AND SHALL HAVE A MINIMUM FINES CONTENT OF 15 PERCENT. THE SOIL RIPRAP SHALL BE INSTALLED IN A MANNER THAT RESULTS IN A DENSE, INTERLOCKED LAYER OF RIPRAP WITH RIPRAP VOIDS FILLED COMPLETELY WITH SOIL. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIALS BE LESS DENSE THAN THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL. SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT SOIL.
3. WHERE SPECIFIED (TYPICALLY AS "BURIED SOIL RIPRAP"), A SURFACE LAYER OF TOPSOIL SHALL BE PLACED OVER THE SOIL RIPRAP ACCORDING TO THE METHOD SPECIFIED ON THE CONTRACT DRAWINGS. THE TOPSOIL SURFACE LAYER SHALL BE COMPACTED TO APPROXIMATELY 85% OF MAXIMUM DENSITY AND WITHIN TWO PERCENTAGE POINTS OF OPTIMUM MOISTURE IN ACCORDANCE WITH ASTM D698, TOPSOIL SHALL BE ADDED TO ANY AREAS THAT SETTLE.
4. ALL SOIL RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL PLACEMENT.

RIPRAP BEDDING

THICKNESS REQUIREMENTS FOR GRANULAR BEDDING			
RIPRAP DESIGNATION	MINIMUM BEDDING THICKNESS (INCHES)		
	FINE-GRAINED SOILS <sup>1</sup>		COARSE-GRAINED SOILS <sup>2</sup>
	TYPE I (LOWER LAYER)	TYPE II (UPPER LAYER)	
VL (D <sub>50</sub> = 6 IN)	4	4	6
L (D <sub>50</sub> = 9 IN)	4	4	6
M (D <sub>50</sub> = 12 IN)	4	4	6
H (D <sub>50</sub> = 18 IN)	4	6	8
VH (D <sub>50</sub> = 24 IN)	4	6	8

NOTES:

1. MAY SUBSTITUTE ONE 12-INCH LAYER OF TYPE II BEDDING. THE SUBSTITUTION OF ONE LAYER OF TYPE II BEDDING SHALL NOT BE PERMITTED AT DROP STRUCTURES. THE USE OF A COMBINATION OF FILTER FABRIC AND TYPE II BEDDING AT DROP STRUCTURES IS ACCEPTABLE.
2. FIFTY PERCENT OR MORE BY WEIGHT RETAINED ON THE #40 SIEVE.

