

ESTATES AT CATHEDRAL PINES

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

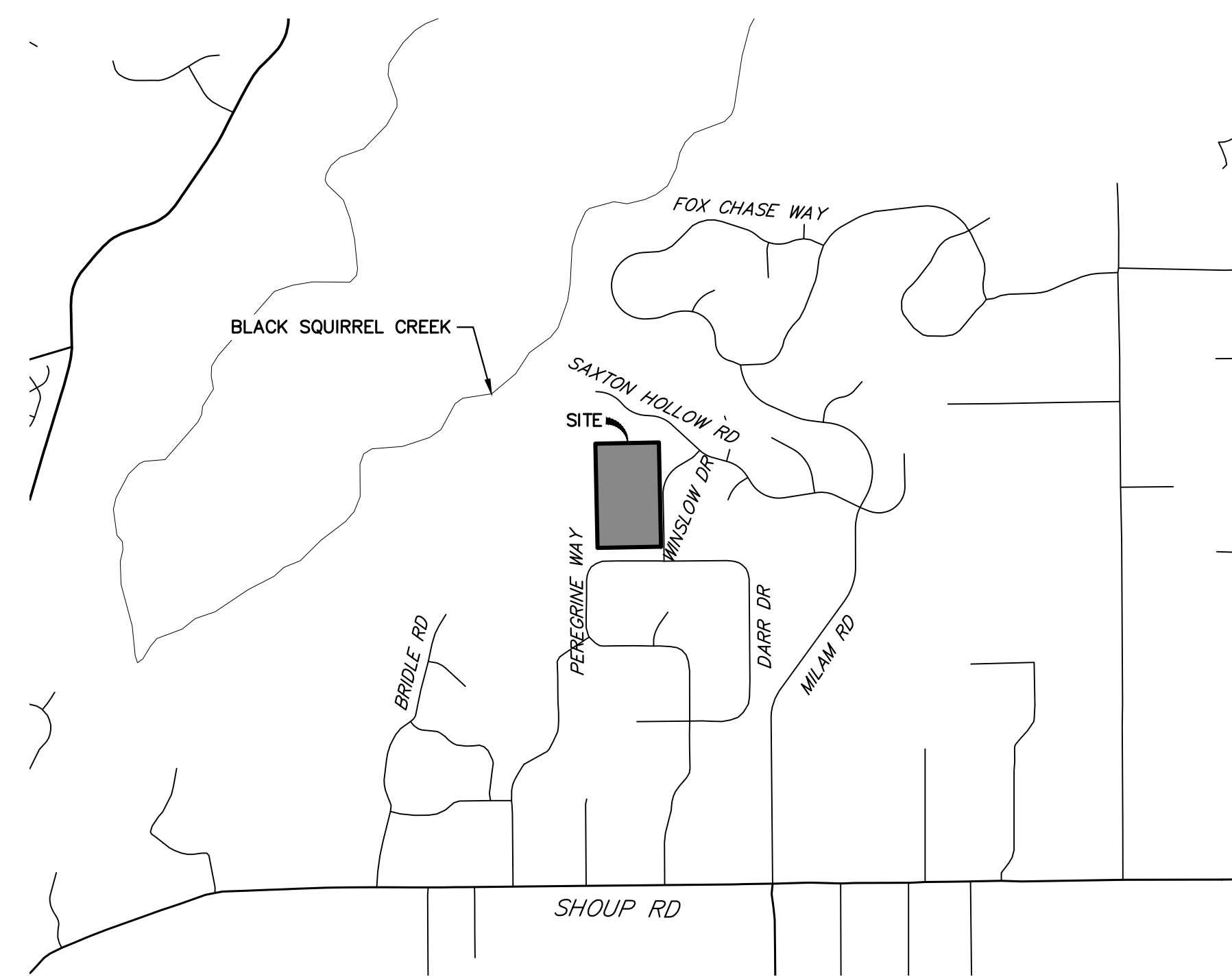


Know what's below.
Call before you dig.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE 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 Westman Company
Central 303-740-9383 • Colorado Springs 719-583-2593
Fort Collins 970-491-9888 • www.jrengineering.com



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 1/2 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.

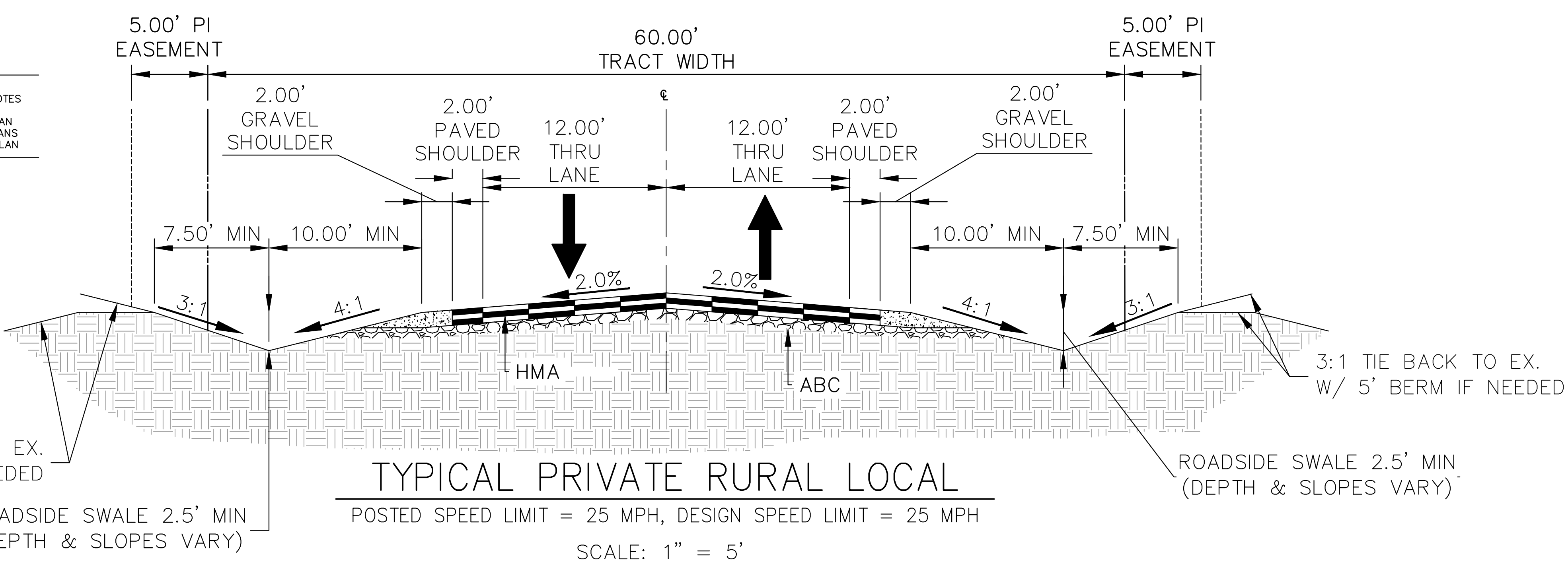
BENCHMARKS
1. SITE VERTICAL DATUM NGVD88 FROM PLANS BY LEIGH-WHITEHEAD ELEVATION 7436.65
NO. 4 REBAR 23' NORTH AND 20' EAST OF THE SOUTHEAST CORNER OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY COLORADO, SAID SECTION CORNER BEING A 3-1/4" ALUMINUM SURVEYORS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

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 TEACOUT 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

SHEET INDEX:

1	COVER SHEET
2	LEGEND AND GENERAL NOTES
3	TYPICAL SECTIONS
4	HORIZONTAL CONTROL PLAN
5-7	STREET IMPROVEMENT PLANS
8	SIGNAGE AND STRIPING PLAN
8	TOTAL SHEETS



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 Cawlfild 5/31/2024
ELAINE CAWLFIELD, OWNER 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 EOM 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 5/31/24
BRYAN T. LAW, P.E. 25043
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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.

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

PCD FILE NO. SF-2234

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
STORM SEWER		
MANHOLE	⊙	●
STORM INLET	⊠	■
AREA INLET - SQUARE	□	■
AREA INLET - ROUND	○	●
FLARED END SECTION	▷	▷
RIPRAP	▨	▨
SANITARY SEWER		
LINE MARKER	Mkr San ^o	
SERVICE MARKER	△	
CLEAN-OUT	○	
MANHOLE W/ DIRECTIONAL FLOW ARROW	⊙	●
WATER LINE		
LINE MARKER	Mkr W ^o	
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	⊕	⊕
GAS LINE		
MARKER	Mkr G ^o	
SERVICE MARKER	△	
METER	⊕	⊕
VALVE	⊕	⊕
PLUG	⊕	⊕
TEE	⊕	⊕
DRY UTILITIES		
CABLE TV MARKER	Mkr TV ^o	
CABLE TELEVISION PEDESTAL	⊕	
ELECTRIC MARKER	Mkr E ^o	
ELECTRIC SERVICE MARKER	△	
ELECTRICAL PEDESTAL	⊕	
ELECTRICAL METER	⊕	
ELECTRICAL MANHOLE	⊕	
FIBER-OPTIC MARKER	Mkr FO ^o	
IRRIGATION PEDESTAL	⊕	
TELEPHONE MARKER	Mkr T ^o	
TELEPHONE PEDESTAL	⊕	
TELEPHONE MANHOLE	⊕	
UTILITY POLE	⊕	⊕
GUY ANCHOR	⊕	⊕
GUY POLE	⊕	⊕
MISC. UTILITIES		
VENT PIPE	VP	VP
TEST HOLE DESIGNATOR	TH	TH

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 (ASP), 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 ACCESSES 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.



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

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

DATE: 5/31/24

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.

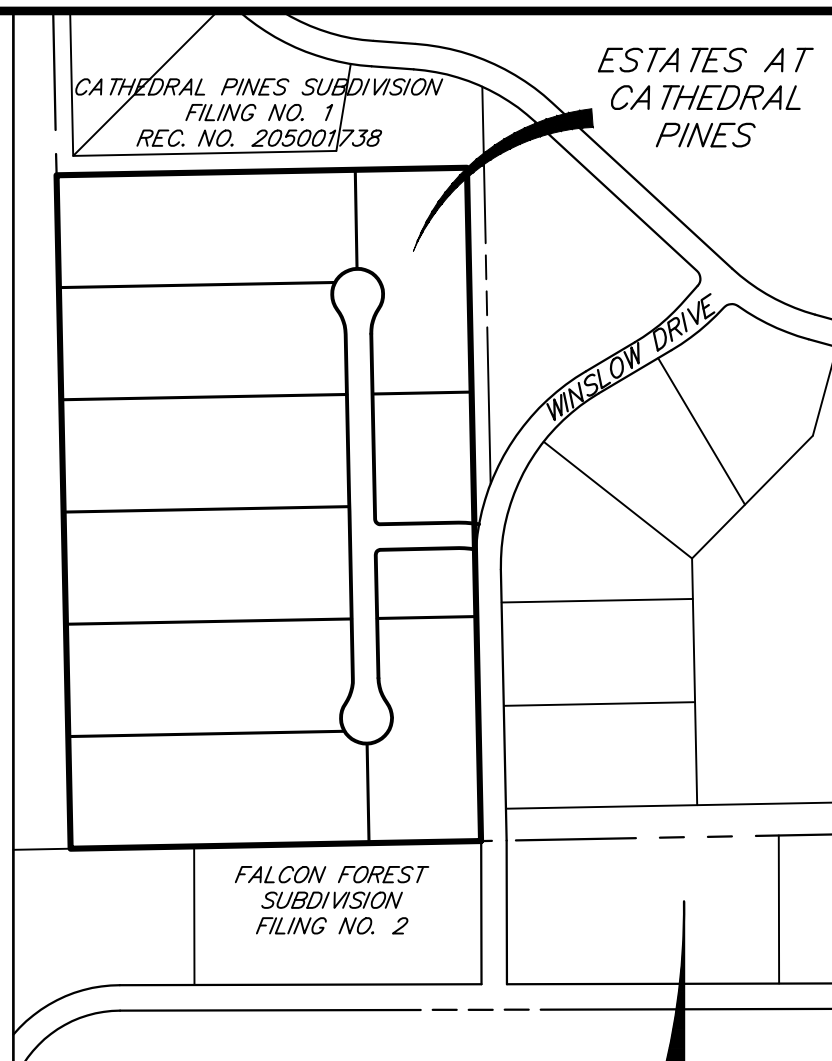
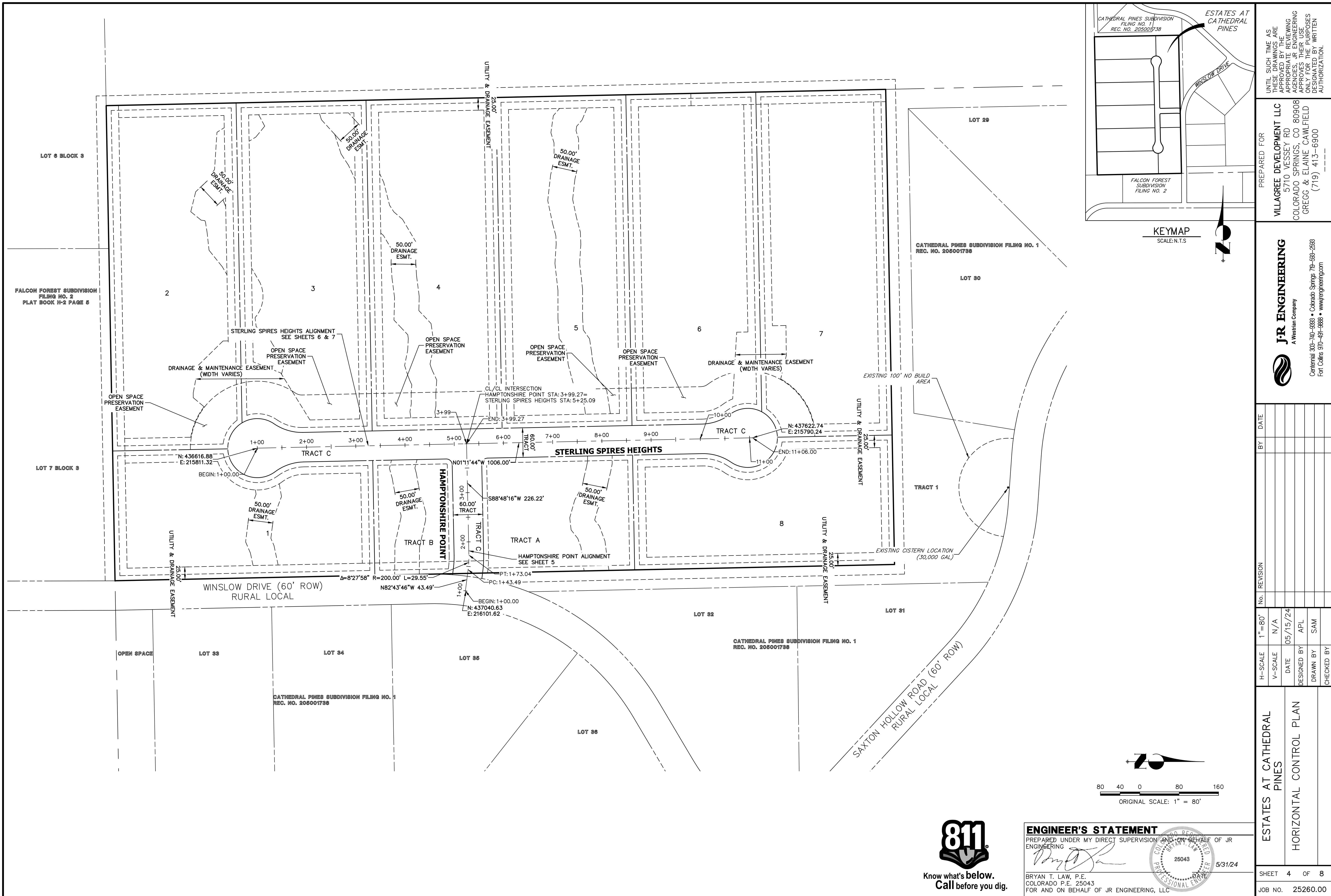
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BY	DATE	No.	REVISION	H-SCALE	N/A	V-SCALE	N/A	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				05/15/24	SAM	SAM					

ESTATES AT CATHEDRAL PINES
 LEGEND AND GENERAL NOTES

SHEET 2 OF 8
 JOB NO. 25260.00



KEYMAP
SCALE: N.T.S.

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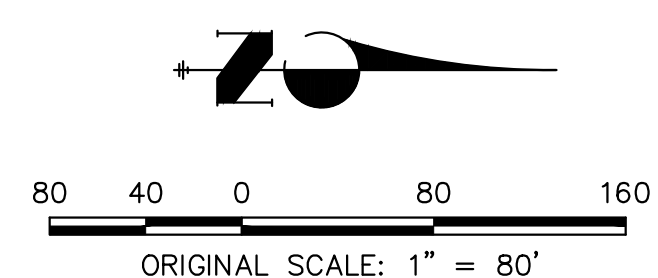
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H-SCALE	1" = 80'
V-SCALE	N/A
DATE	05/15/24
DESIGNED BY	APL
DRAWN BY	SAM
CHECKED BY	

ESTATES AT CATHEDRAL PINES
HORIZONTAL CONTROL PLAN

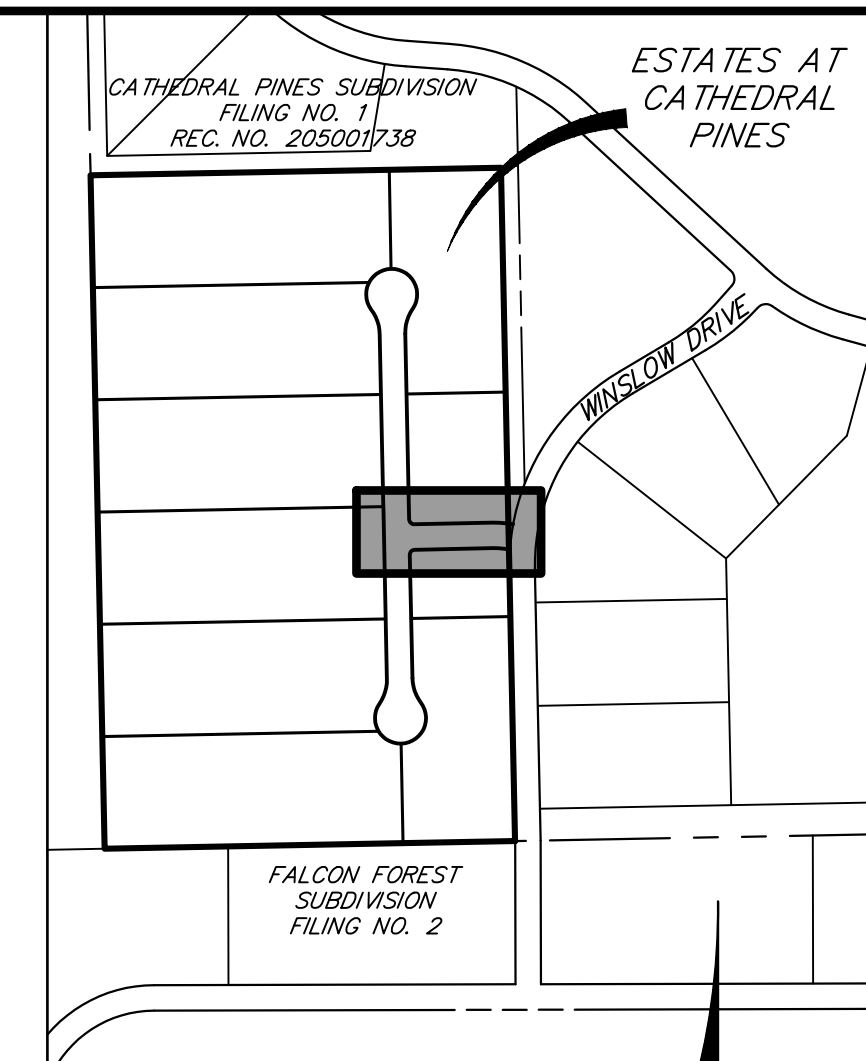
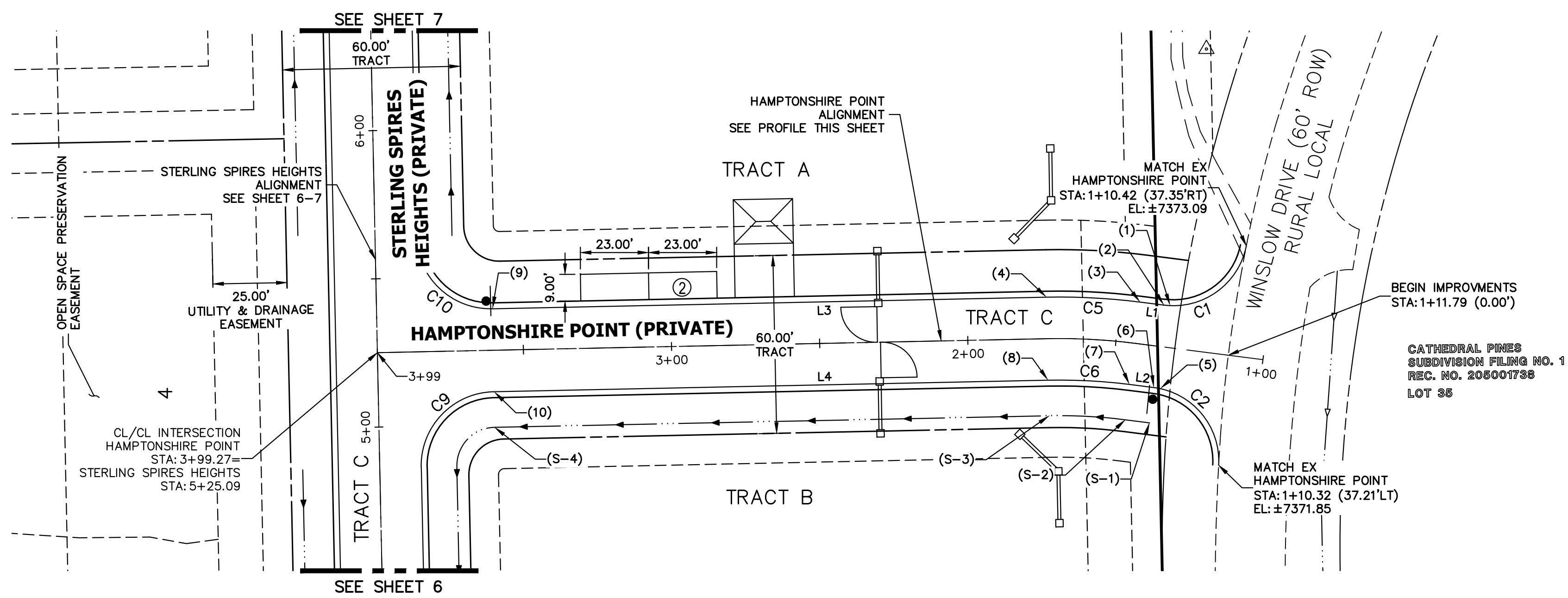
SHEET 4 OF 8
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ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

Bryan T. Law
25043
5/31/24

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

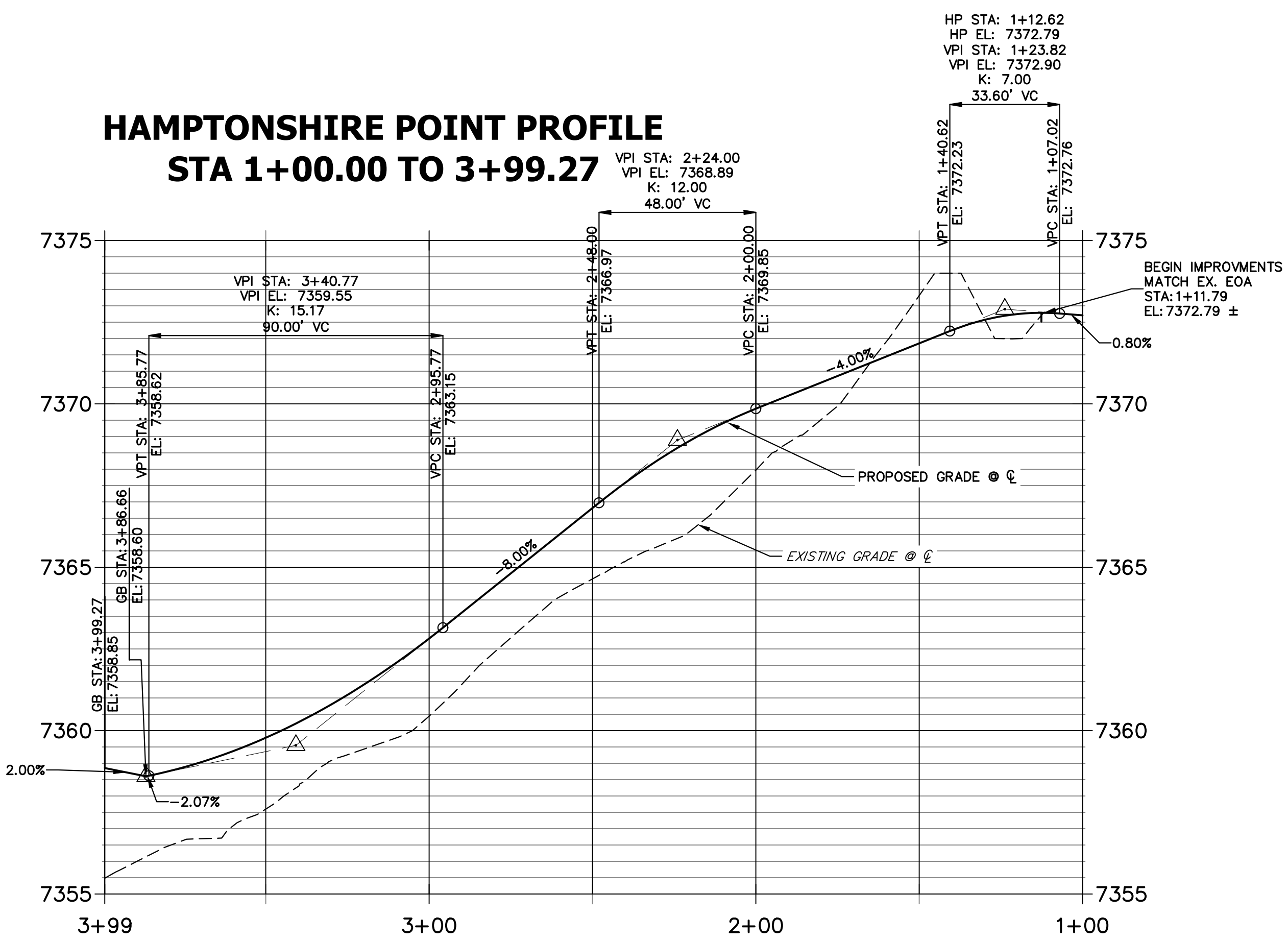


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**HAMPTONSHIRE POINT PROFILE
 STA 1+00.00 TO 3+99.27**



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	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 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.



ENGINEER'S STATEMENT
 PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

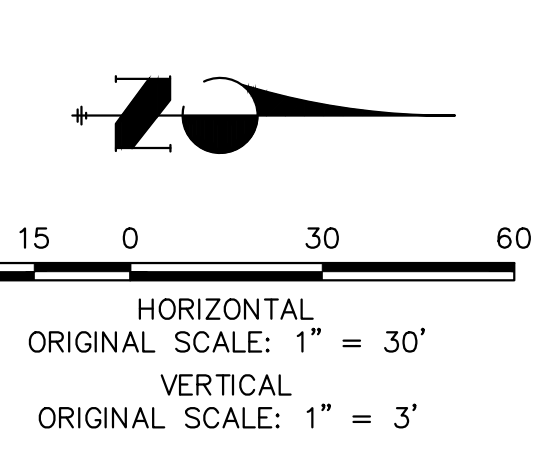
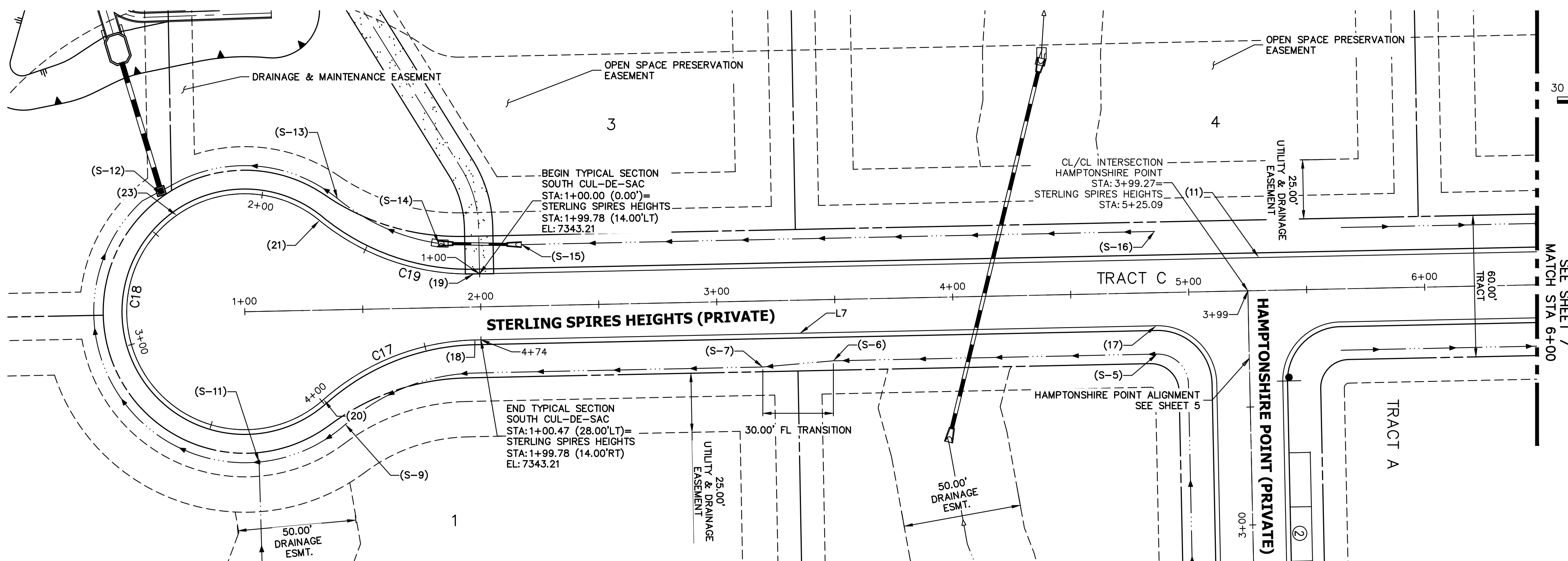
Bryan T. Law
 25043
 5/31/24

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

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

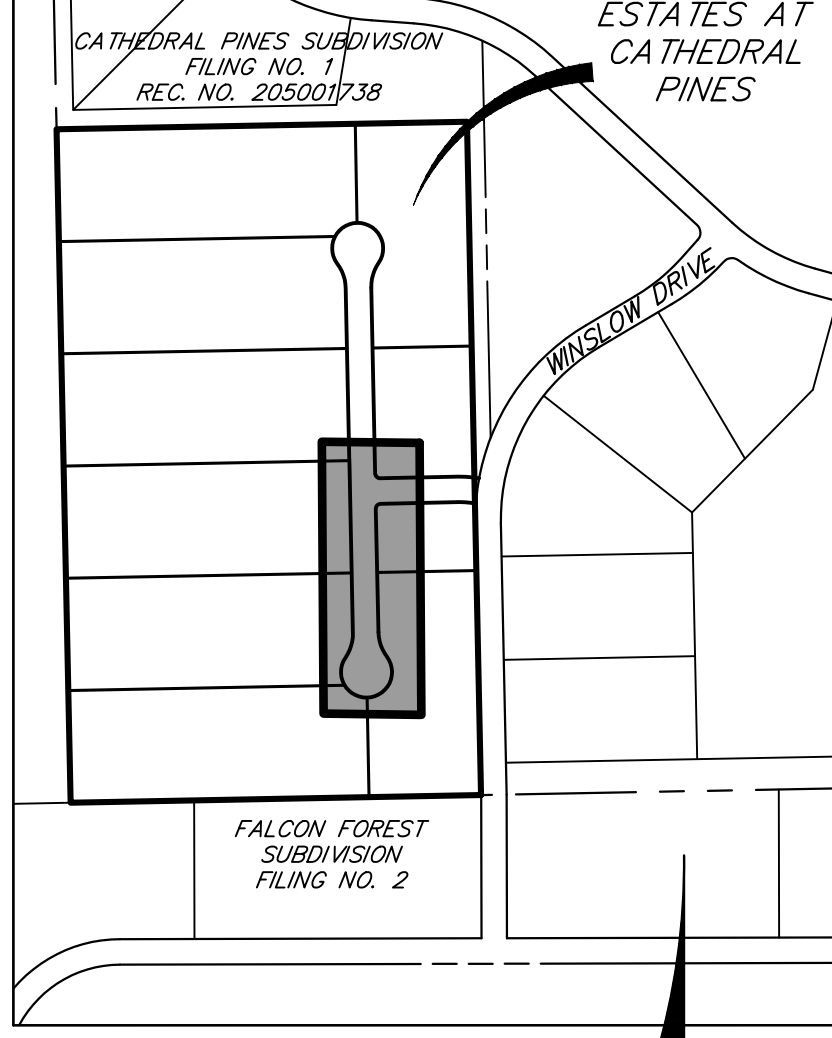
ESTATES AT CATHEDRAL PINES
 STREET IMPROVEMENT PLANS

SHEET 5 OF 8
 JOB NO. 25260.00



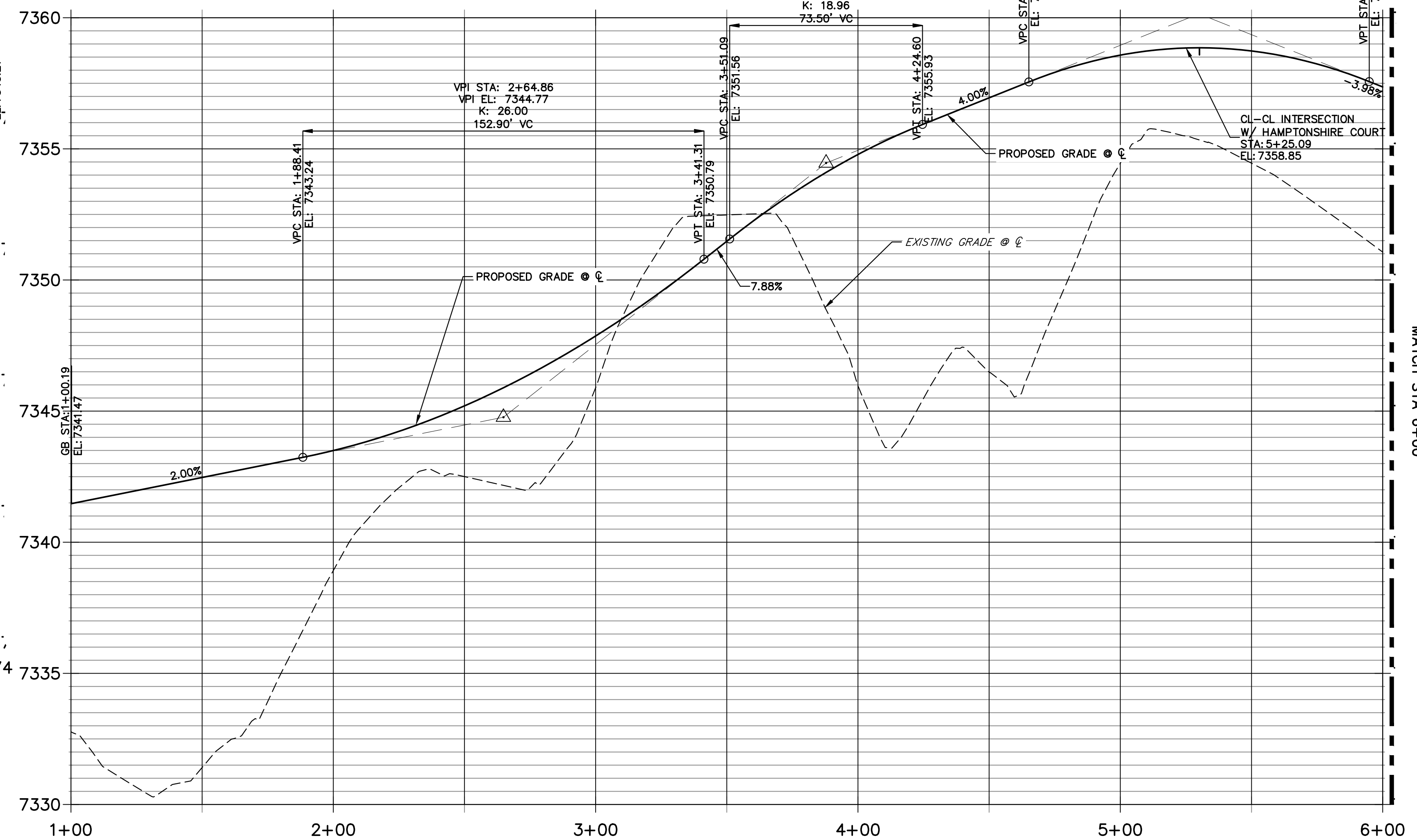
LINE	BEARING	DISTANCE
L7	N01°11'44"W	288.60'

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'

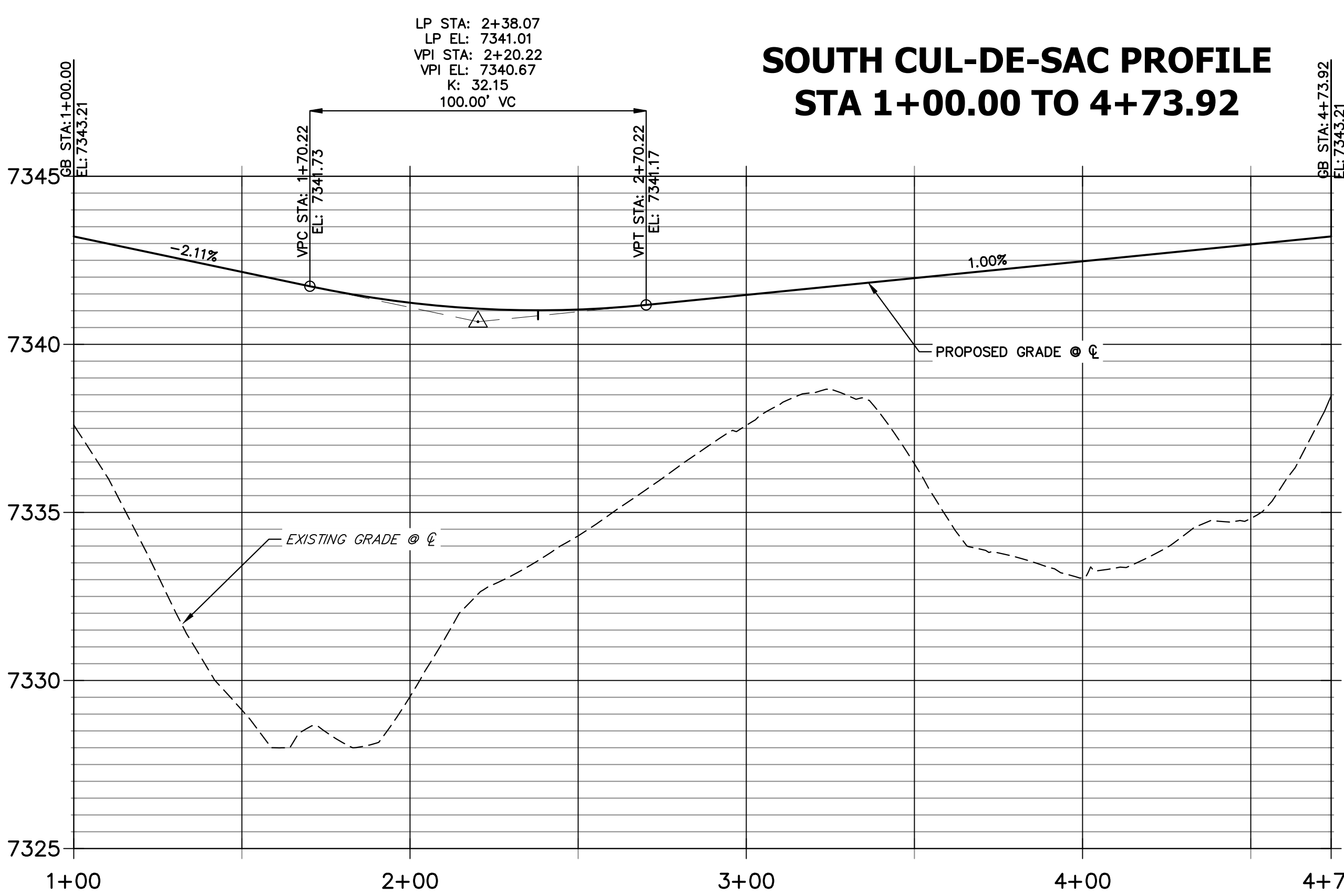


HP STA: 5+30.17
 HP EL: 7358.85
 VPI STA: 5+30.01
 VPI EL: 7360.15
 K: 16.24
 129.76' VC

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



SOUTH CUL-DE-SAC PROFILE
STA 1+00.00 TO 4+73.92



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 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.
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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, LLC

ESTATES AT CATHEDRAL PINES
 STREET IMPROVEMENT PLANS

BY DATE

No. REVISION

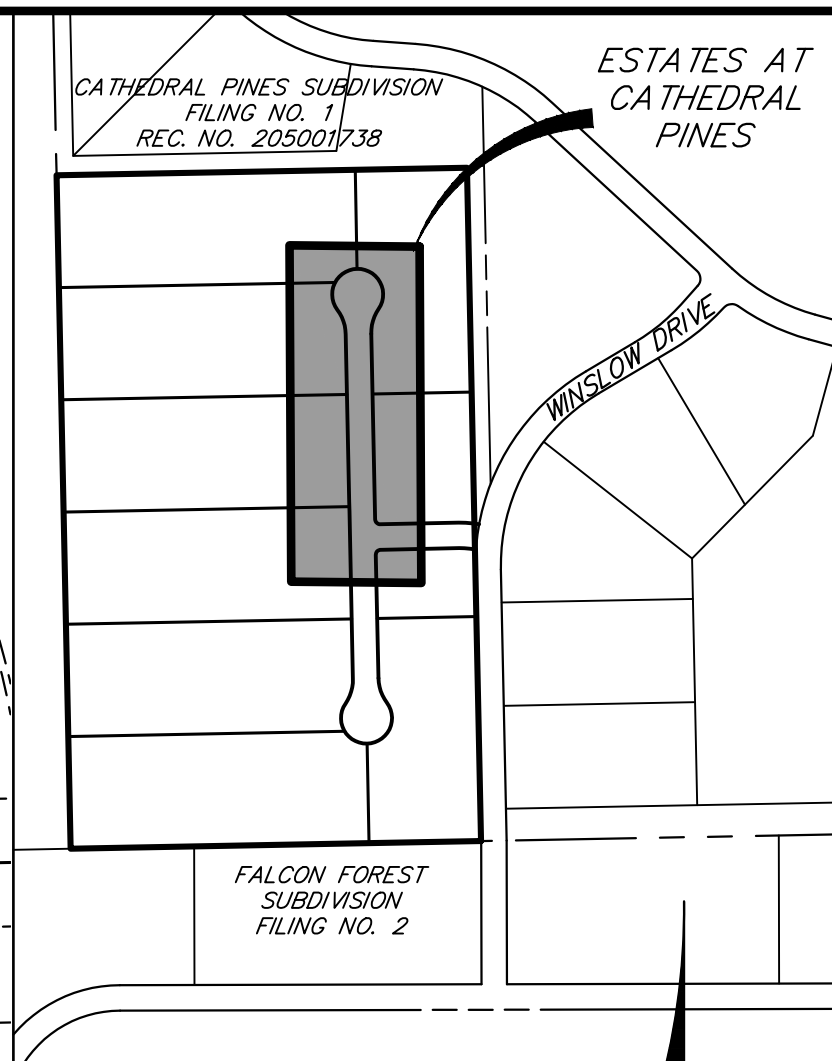
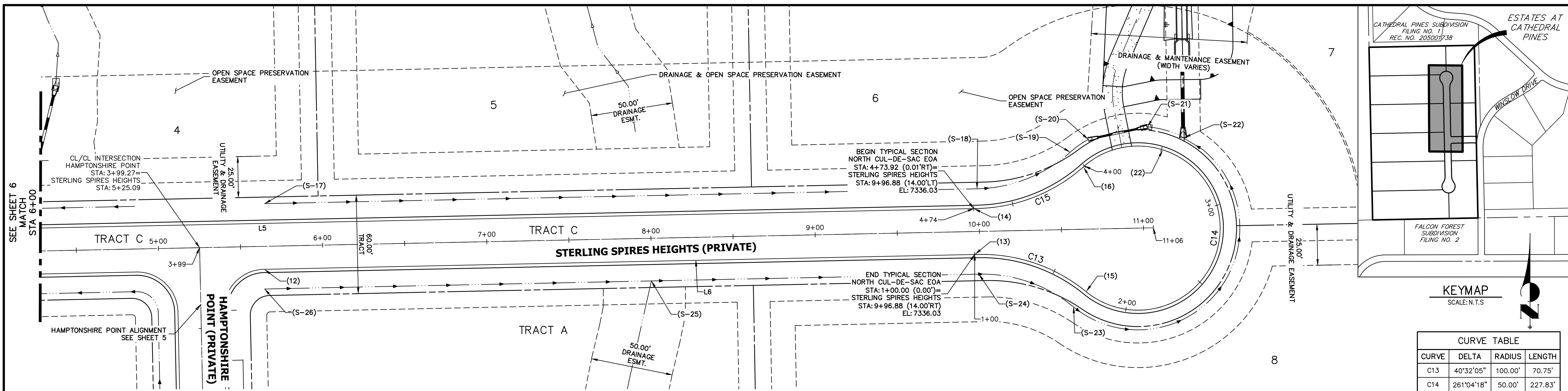
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 V-SCALE 1"=3'

DATE 05/15/24
 DESIGNED BY APL
 DRAWN BY SAM
 CHECKED BY

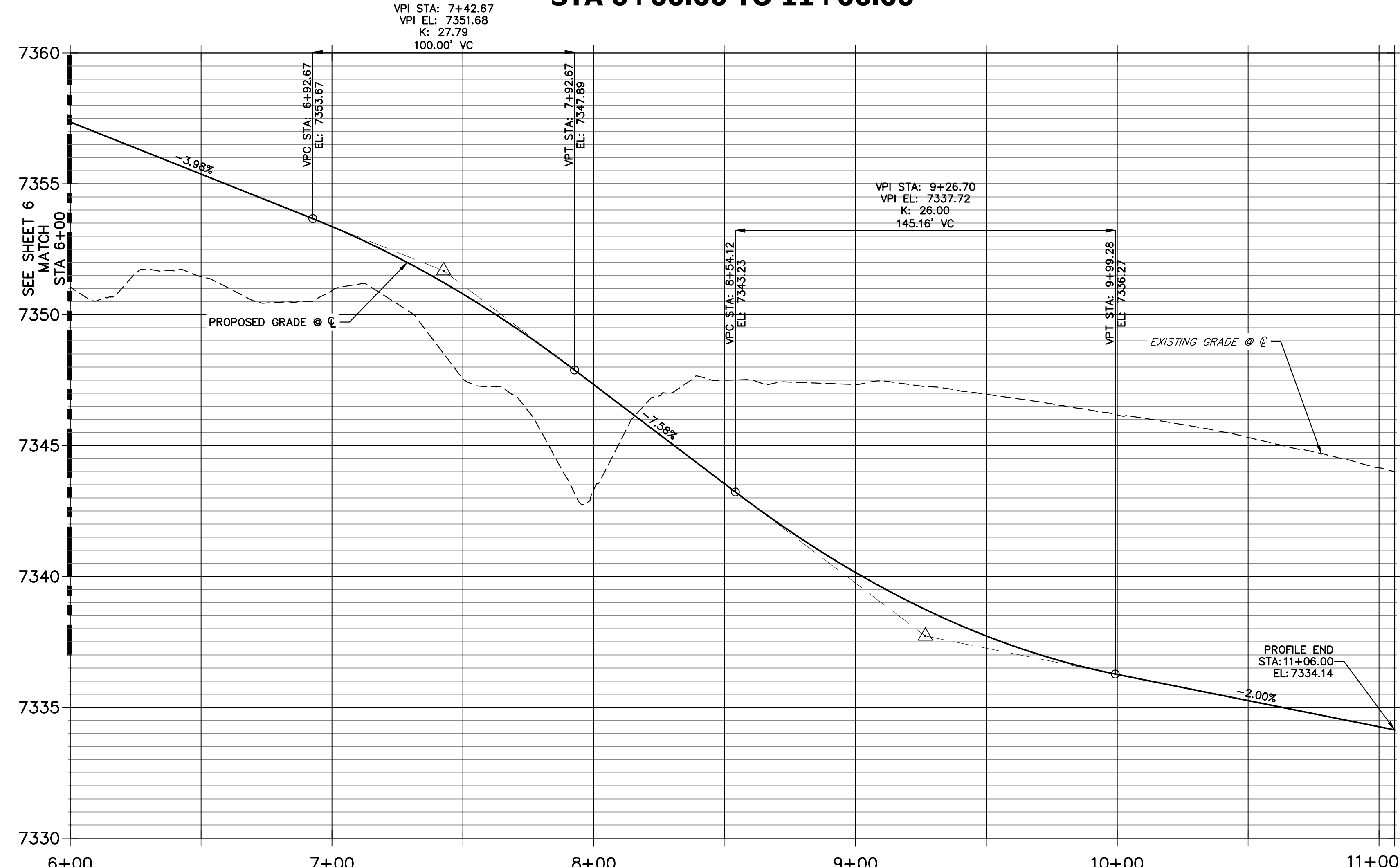
SHEET 6 OF 8
 JOB NO. 25260.00

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

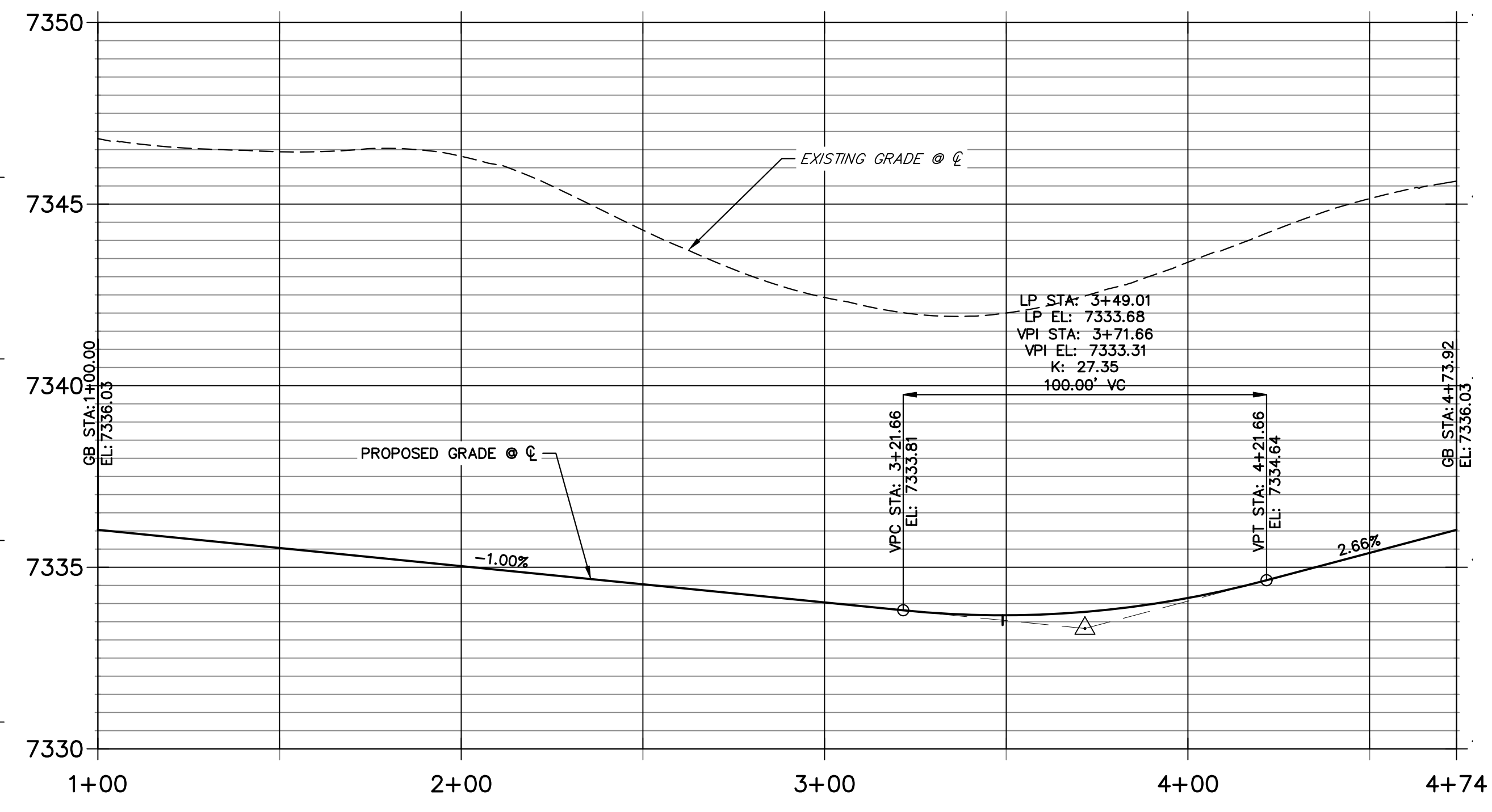
J.R. ENGINEERING
 A Westman Company
 Centennial 300-740-9888 • Colorado Springs 719-588-2583
 Fort Collins 970-491-9888 • www.jrengineering.com



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



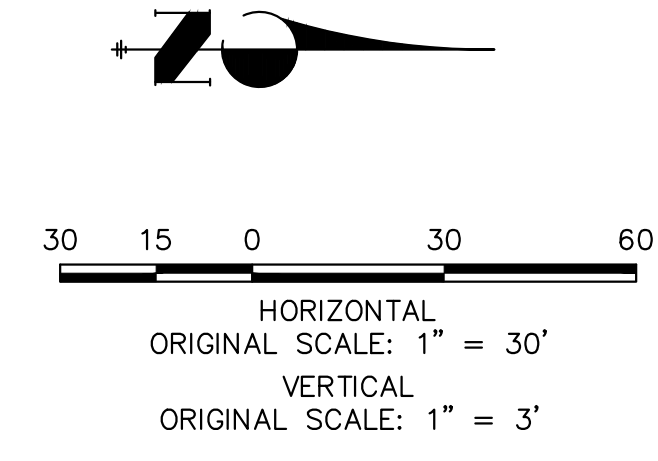
**NORTH CUL-DE-SAC EOA PROFILE
STA 1+00.00 TO 4+73.92**



CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C13	40°32'05"	100.00'	70.75'
C14	261°04'18"	50.00'	227.83'
C15	40°32'13"	100.00'	70.75'

LINE TABLE		
LINE	BEARING	DISTANCE
L5	S01°11'44"E	801.68'
L6	N01°12'16"W	436.93'

- NOTES**
- SEE SHEET 3 FOR TYPICAL SWALE SECTIONS.
 - SEE STORM & POND PLANS BY JR ENGINEERING FOR ALL CULVERT & STORM SEWER INFORMATION.
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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+65.17	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

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
 5/31/24

ESTATES AT CATHEDRAL PINES
 STREET IMPROVEMENT PLANS
 SHEET 7 OF 8
 JOB NO. 25260.00

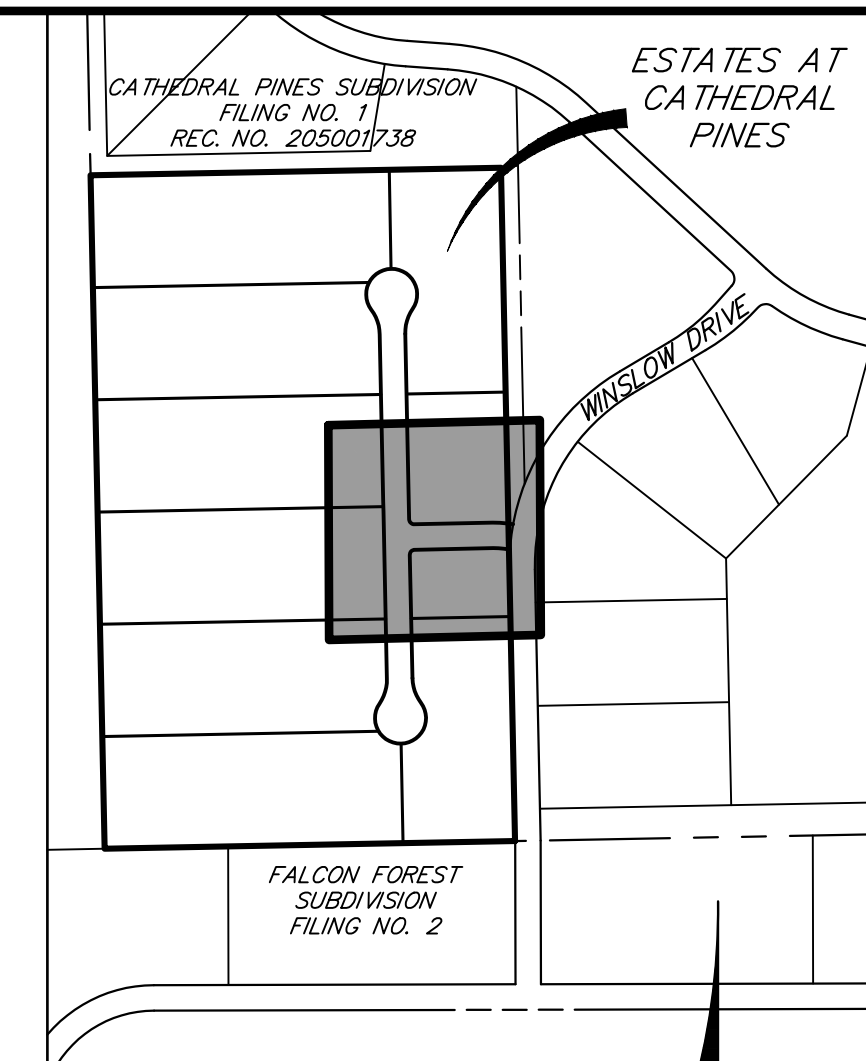
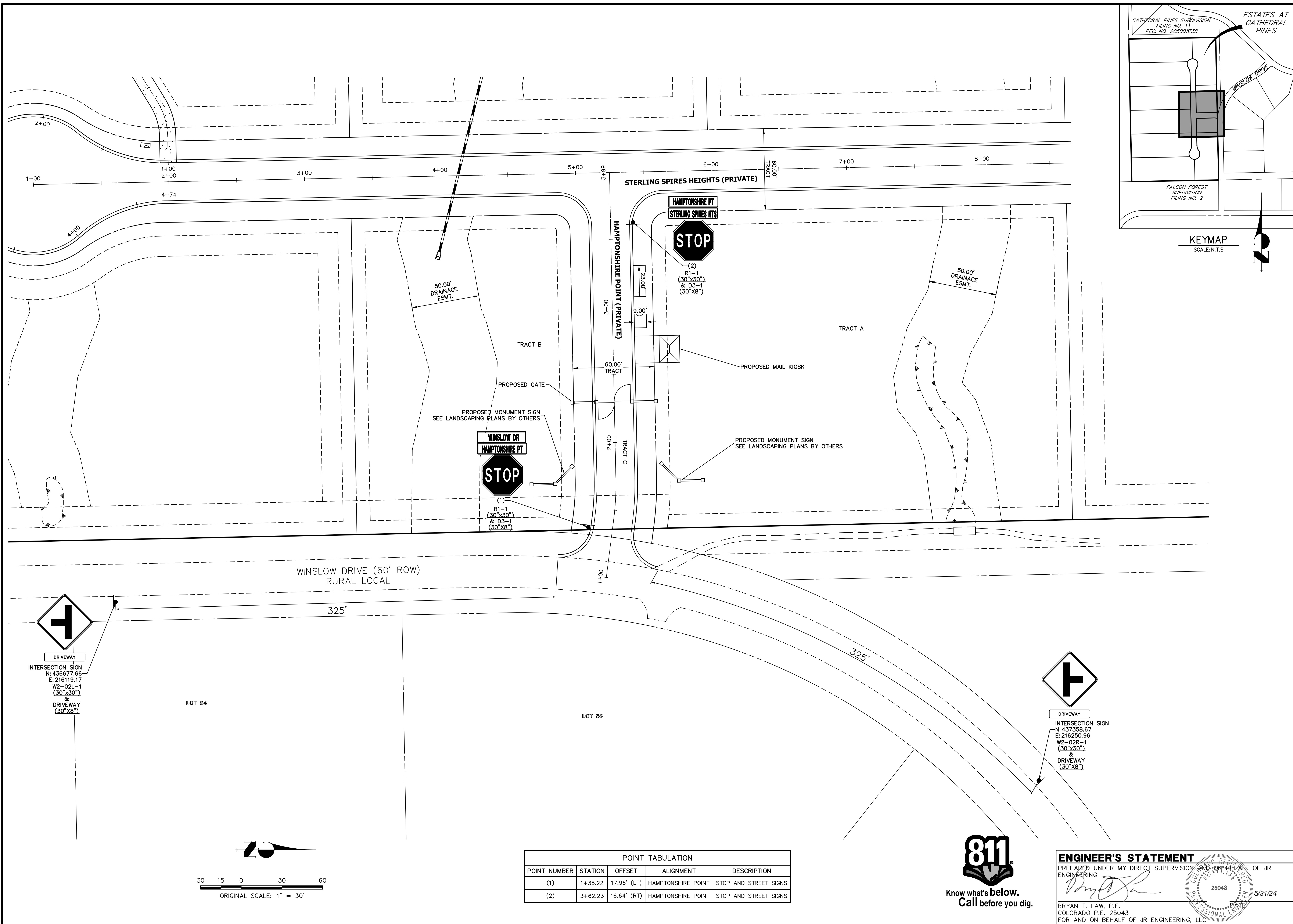
PREPARED FOR
 VILLAGREE DEVELOPMENT LLC
 5710 VESSEY RD
 COLORADO SPRINGS, CO 80908
 GREGG & ELAINE CAWFIELD
 (719) 413-6900

UNLESS OTHERWISE SPECIFIED, THESE DRAWINGS ARE APPROVED BY THE APPLICABLE ENGINEERING AGENCIES, OR ENGINEERING APPROVES THEIR USE AS DESIGNATED BY WRITTEN AUTHORIZATION.

J.R. ENGINEERING
 A Westman Company
 Centennial 300-740-9888 • Colorado Springs 719-588-2583
 Fort Collins 970-491-9888 • www.jrengineering.com

BY	DATE	REVISION

H-SCALE 1" = 30'
 V-SCALE 1" = 3'
 DATE 05/15/24
 DESIGNED BY APL
 DRAWN BY SAM
 CHECKED BY



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR 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 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

No.	REVISION	BY	DATE

H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=30'	N/A	05/15/24	APL	SAM	

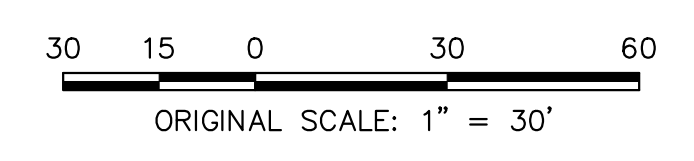
ESTATES AT CATHEDRAL PINES
SIGNAGE AND STRIPING PLAN

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

25043
5/31/24

SHEET 8 OF 8
JOB NO. 25260.00

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



ESTATES AT CATHEDRAL PINES

COUNTY OF EL PASO, STATE OF COLORADO

STORM SEWER AND POND PLANS

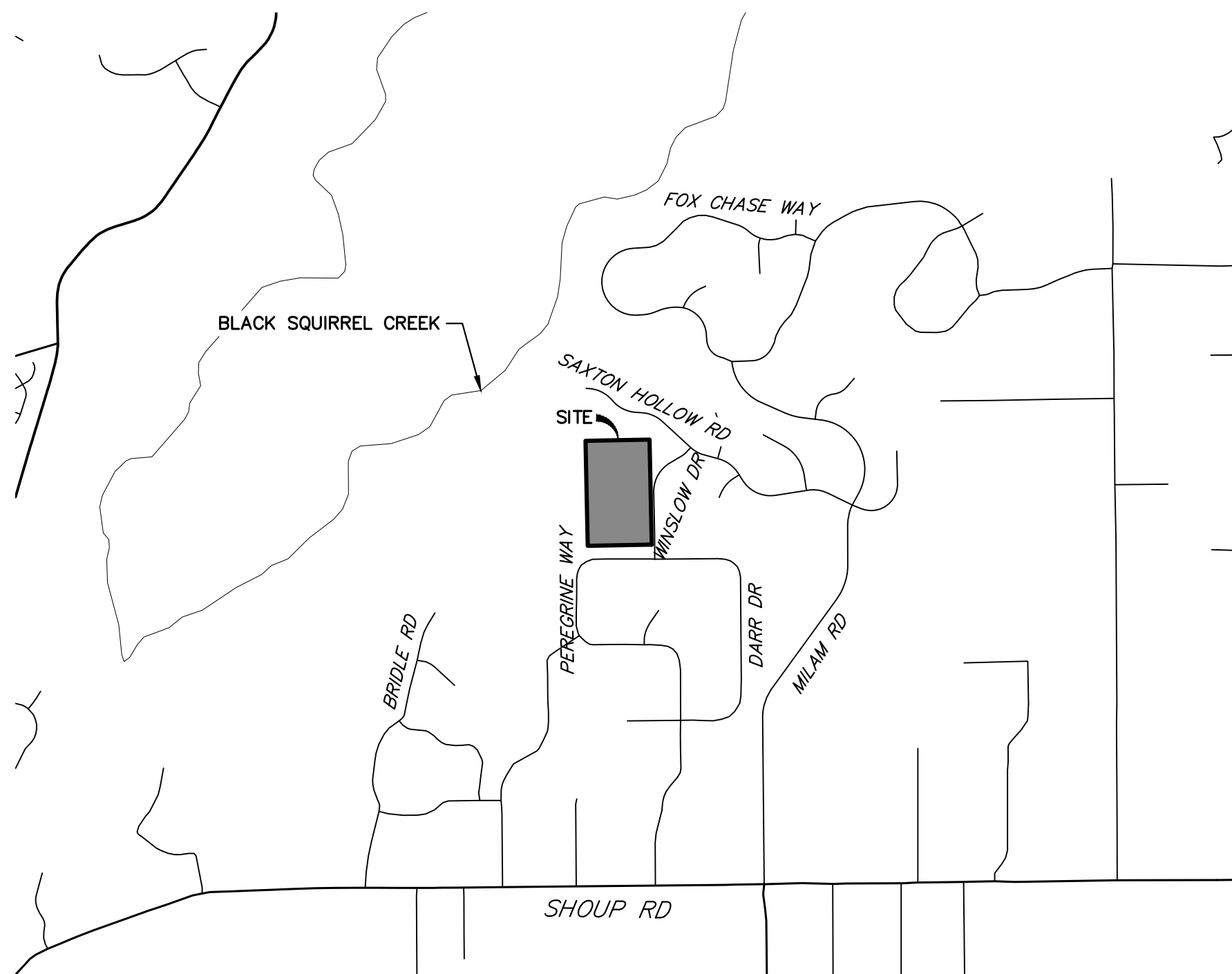


Know what's below.
Call before you dig.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE 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 Westman Company
Central 303-740-9888 • Colorado Springs 719-583-2583
Fort Collins 970-491-9888 • www.jrengineering.com



VICINITY MAP
SCALE: 1"=2000'



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

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 1/4 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

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 Cawlfild 5/31/2024
ELAINE CAWLFIELD, OWNER 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 EOM 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 5/31/24
BRYAN T. LAW, P.E. DATE
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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
				N/A	N/A	05/15/24	GAG	GAG	

ESTATES AT CATHEDRAL PINES
COVER SHEET

SHEET 1 OF 16
JOB NO. 25260.00

LAYER LINETYPE LEGEND

Table with columns for EXISTING and PROPOSED linetypes for various layers including 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

Table with columns for EXISTING and PROPOSED symbols for various utilities including STORM SEWER (MANHOLE, STORM INLET, AREA INLET - SQUARE, AREA INLET - ROUND, FLARED END SECTION, RIPRAP), SANITARY SEWER (LINE MARKER, SERVICE MARKER, CLEAN-OUT, MANHOLE W/ DIRECTIONAL FLOW ARROW), WATER LINE (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), GAS LINE (MARKER, SERVICE MARKER, METER, VALVE, PLUG, TEE), DRY UTILITIES (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), and MISC. UTILITIES (VENT PIPE, TEST HOLE DESIGNATOR).

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 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.
3. 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.
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 VERSIONS OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS.
5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. 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.
8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD.
9. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS.
10. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
11. SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS.
12. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
13. 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.
14. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED.

STORM SEWER NOTES

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2. ALL STORM SEWER PIPES, INLETS, MANHOLES, AND APPURTENANCES WITHIN THE R.O.W. ARE PUBLIC.
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11. SEE DETAIL SHEET 14 FOR APPLICABLE DETAILS.

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.

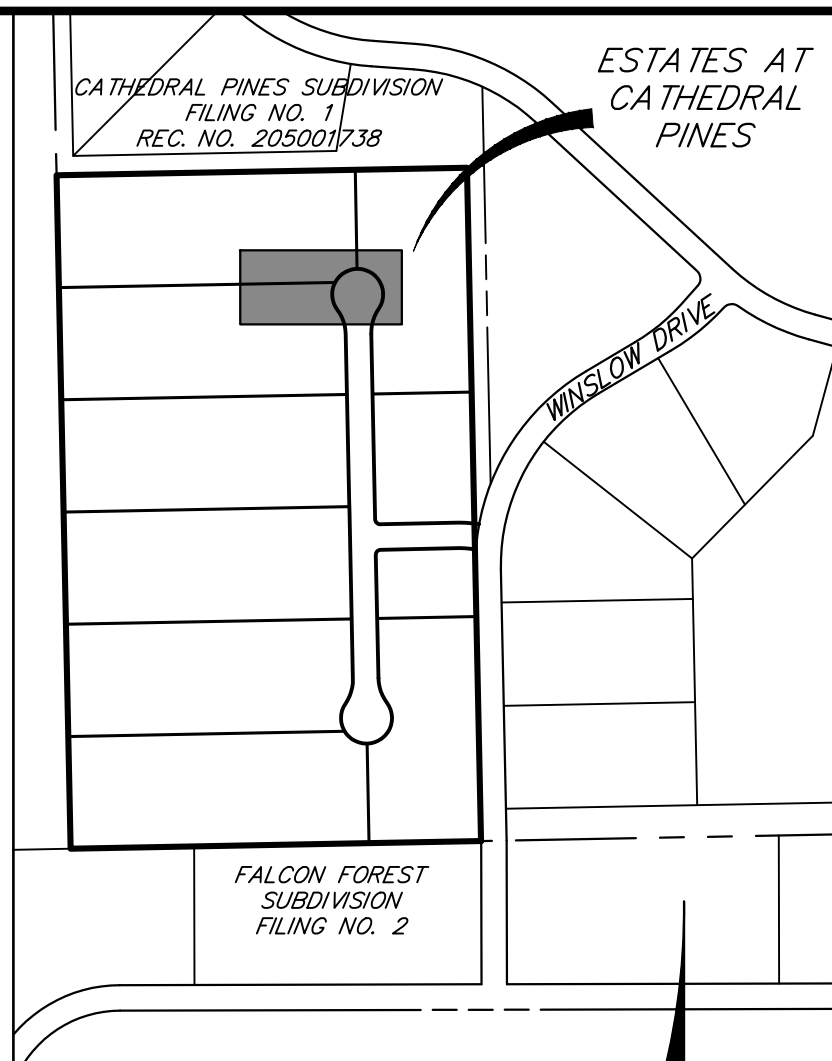
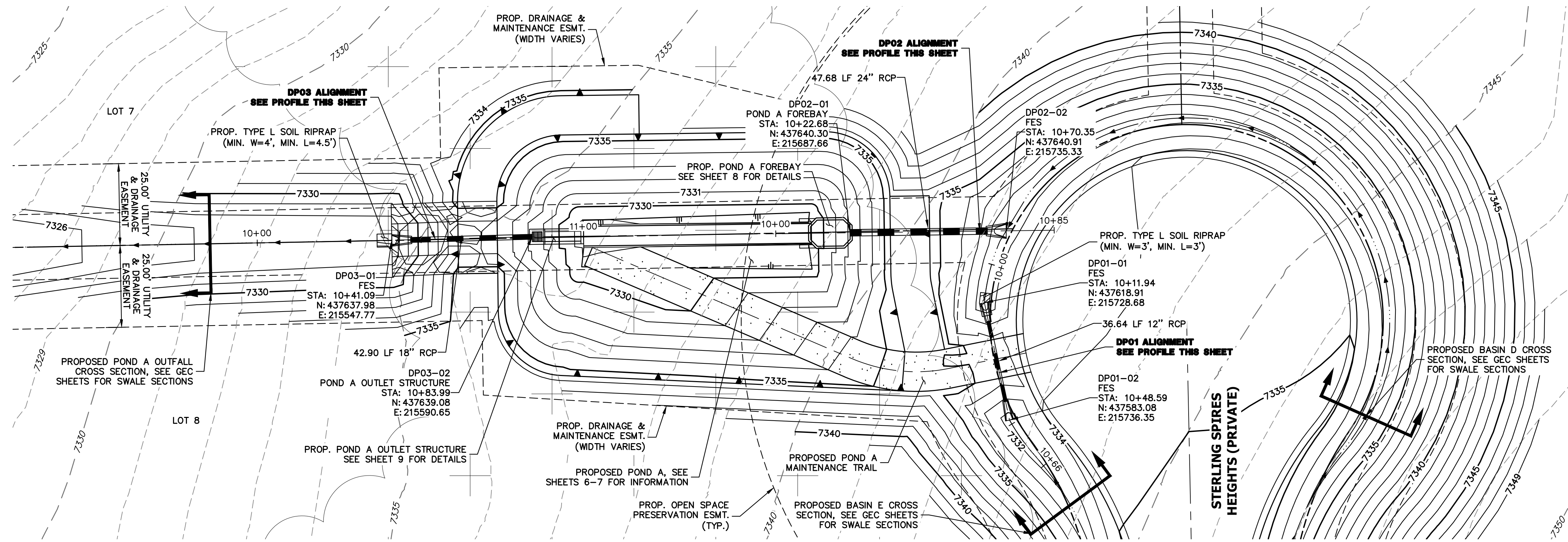


Know what's below. Call before you dig.

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. DATE 5/31/24.

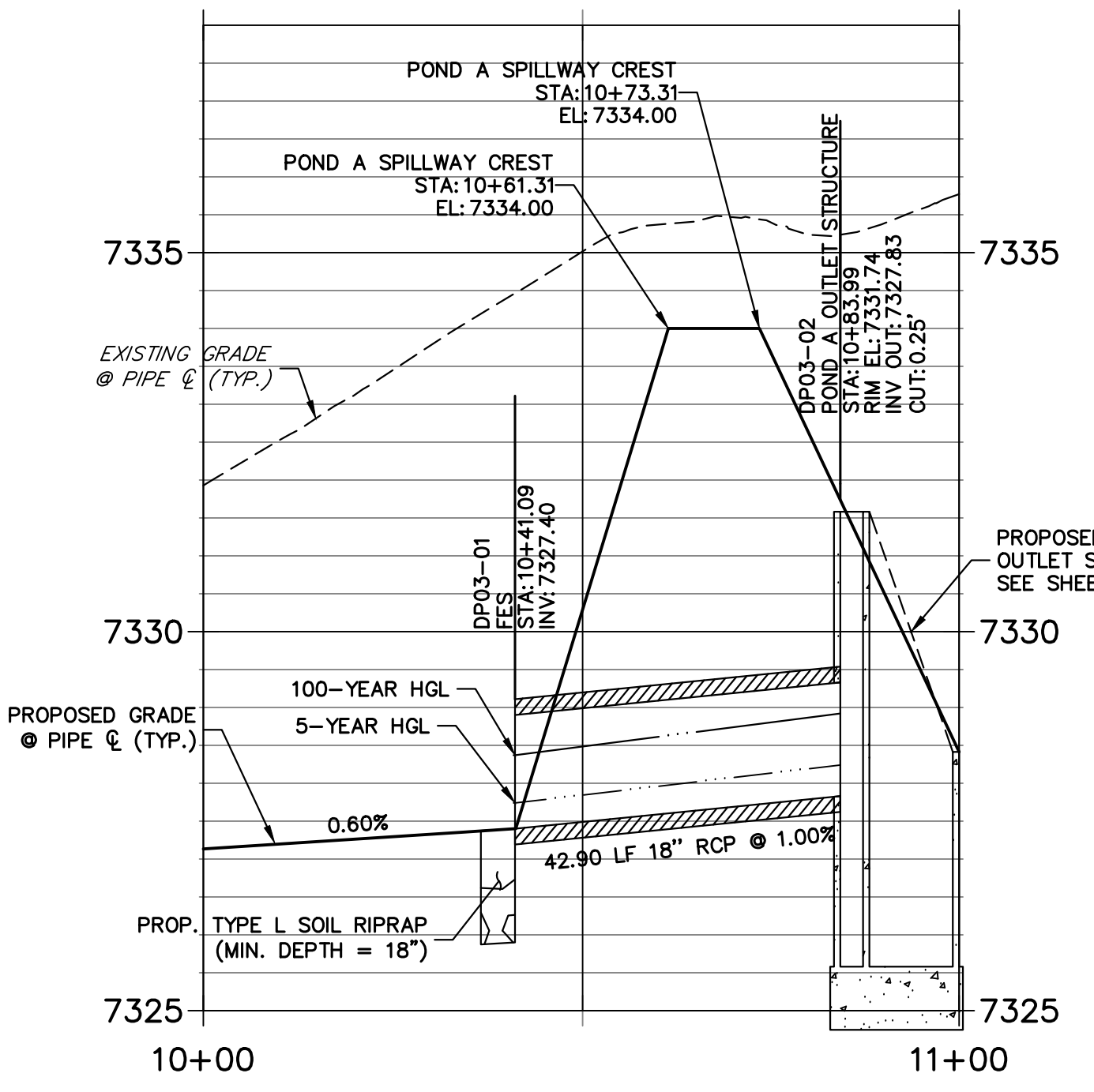
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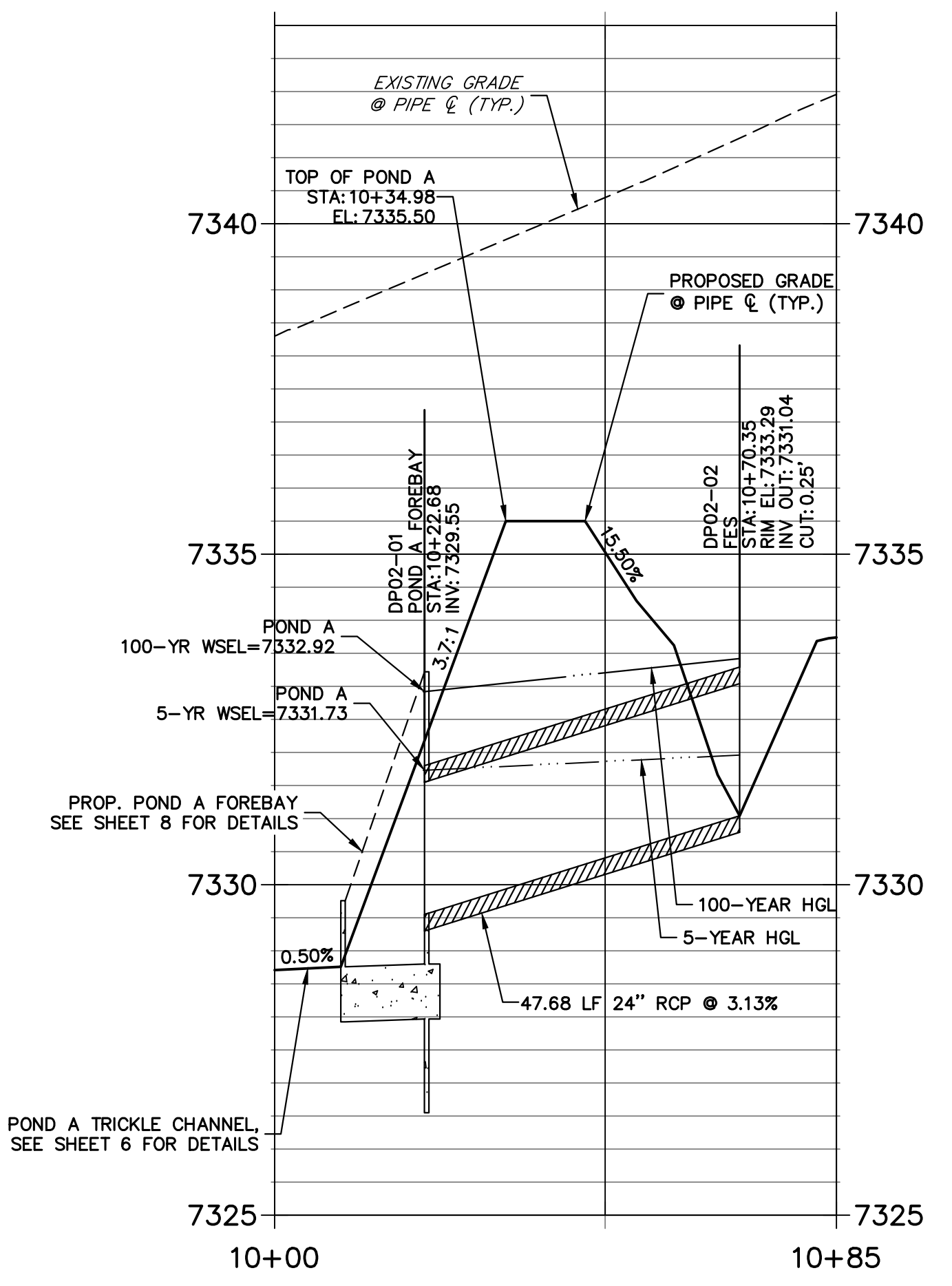
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PREPARED FOR
VILLAGREE DEVELOPMENT LLC
 5710 VESSEY RD
 COLORADO SPRINGS, CO 80908
 GREGG & ELAINE CAWFIELD
 (719) 413-6900

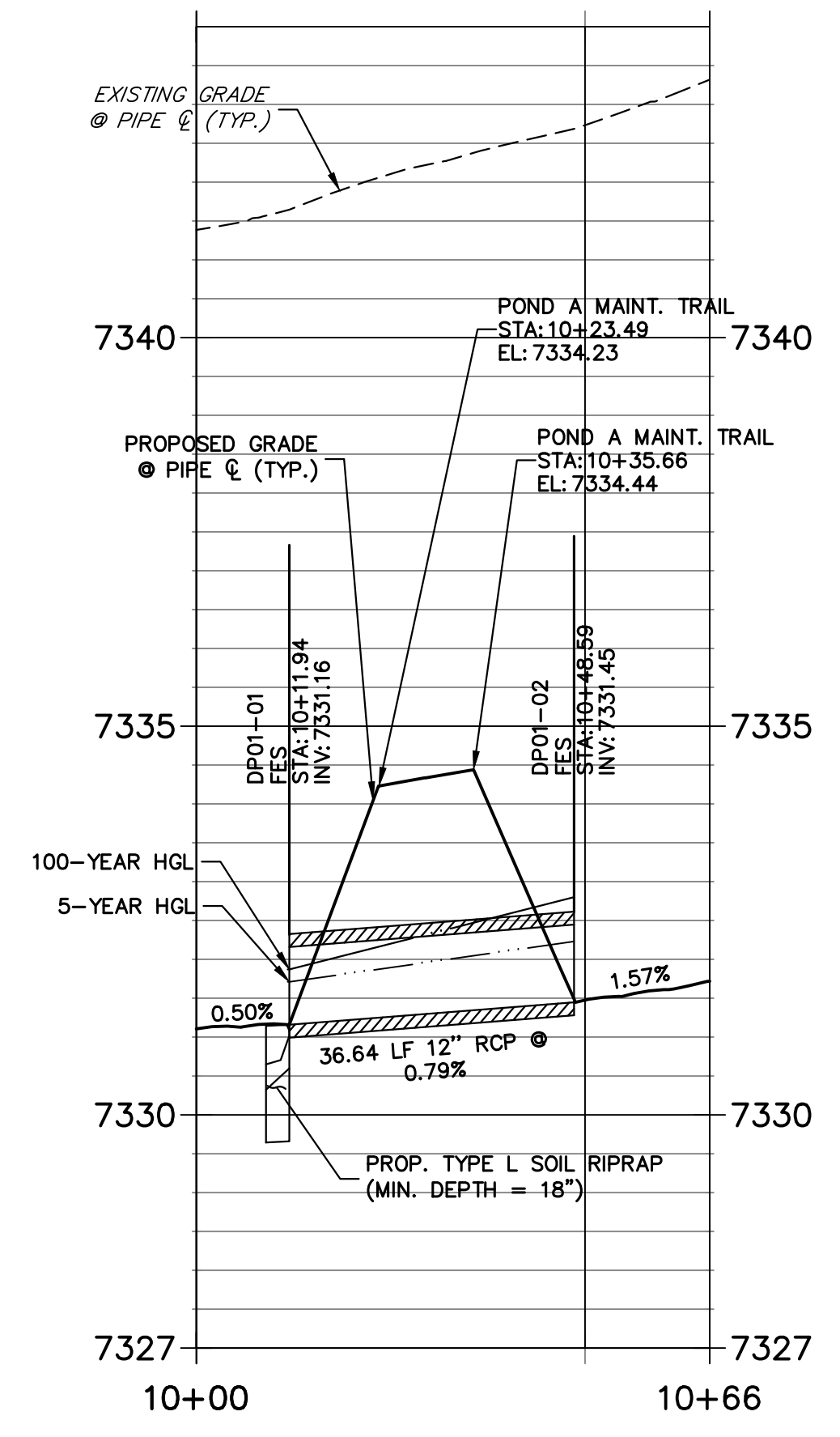
**DP03 PROFILE
 STA 10+00.00 TO 10+99.66**



**DP02 PROFILE
 STA 10+00.00 TO 10+85.01**

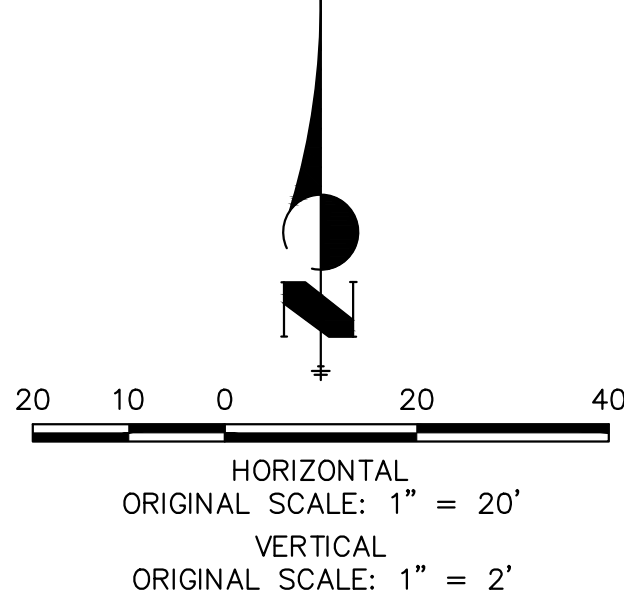


**DP01 PROFILE
 STA 9+99.98 TO 10+66.06**



STORM SEWER NOTES

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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

25043
 5/31/24

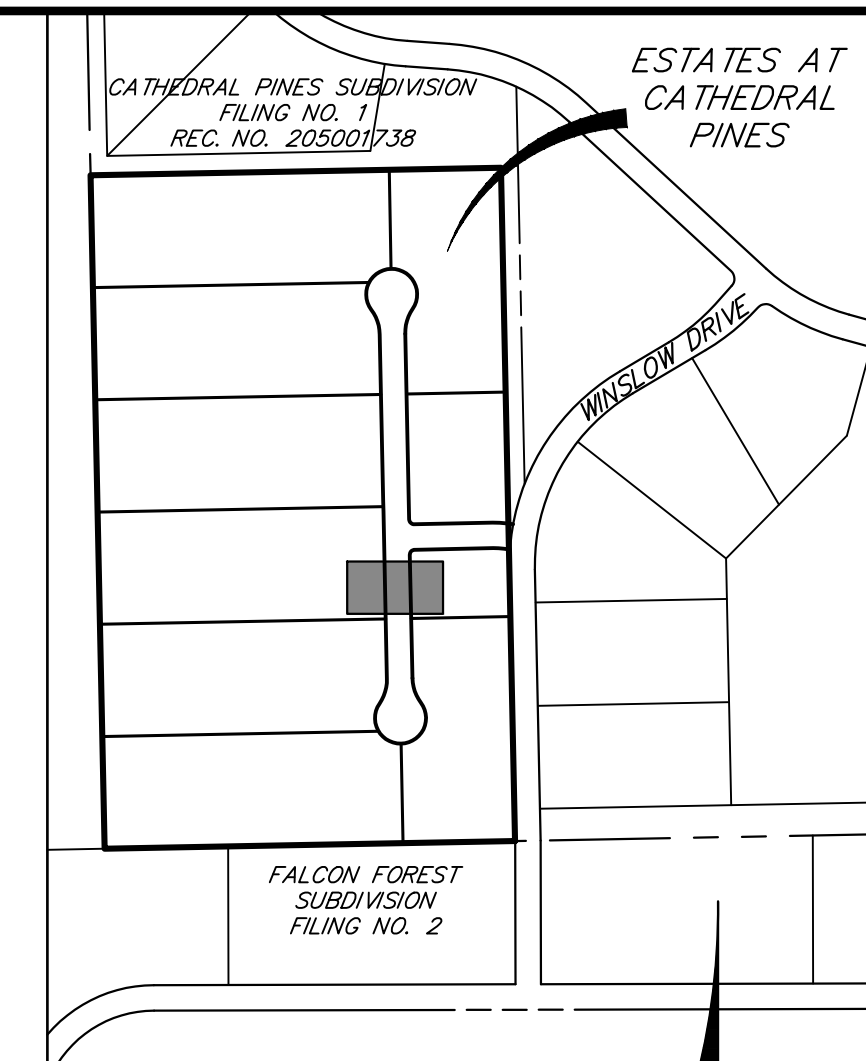
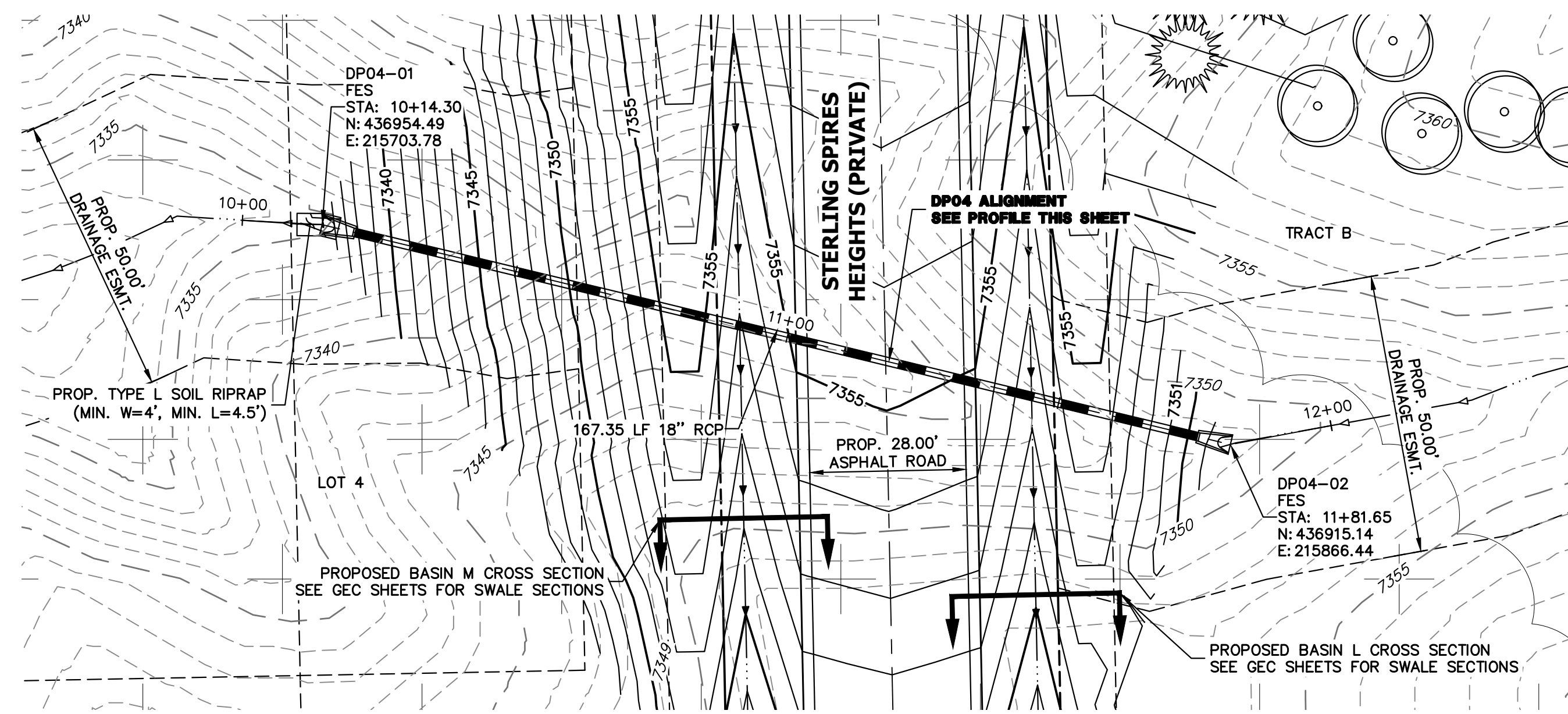
No.	REVISION	BY	DATE	DESIGNED BY		DRAWN BY		CHECKED BY	
				GAG	GAG	GAG	GAG	GAG	GAG

H-SCALE 1"=20'
 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 3 OF 16
 JOB NO. 25260.00

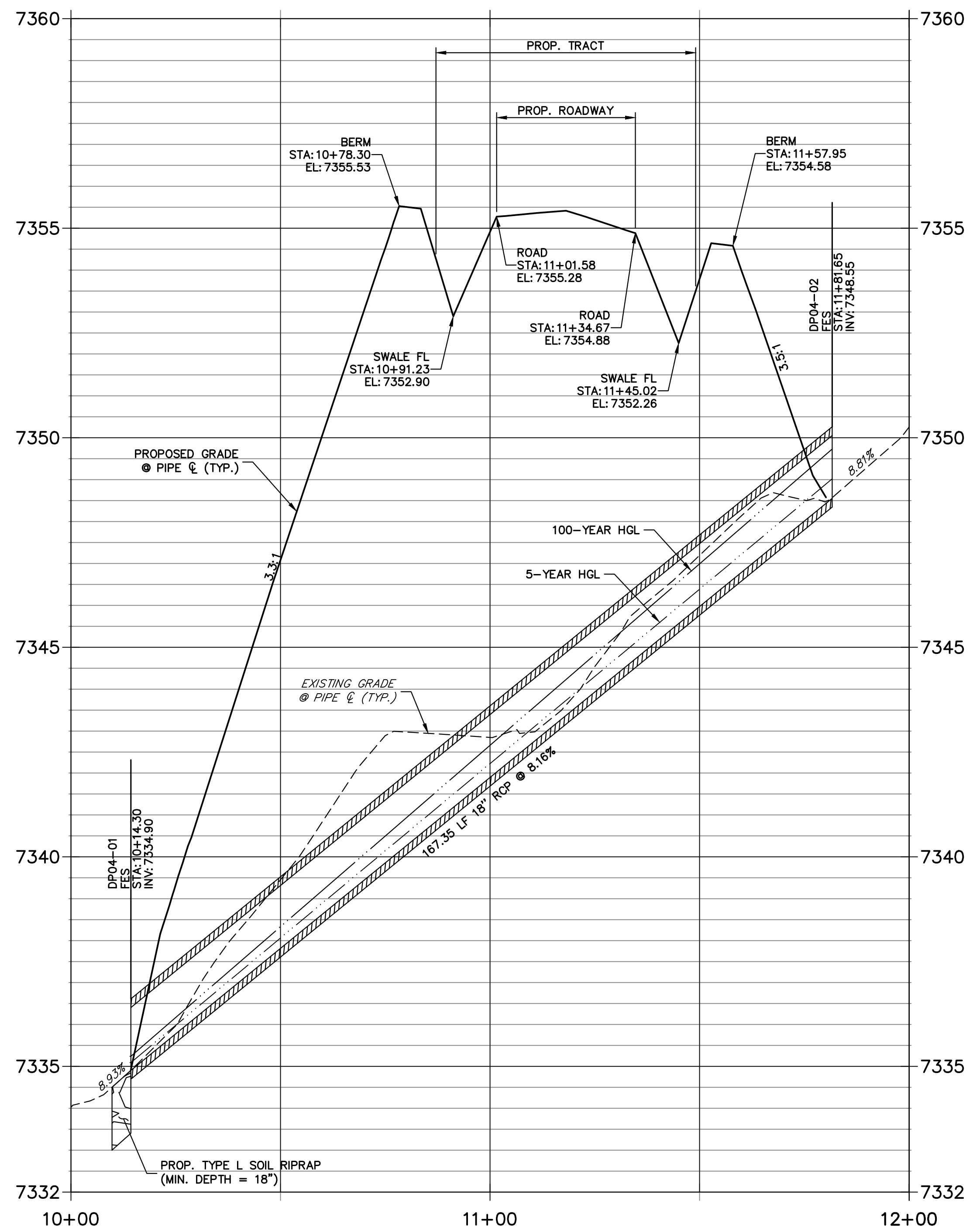
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 Fort Collins 970-491-9888 • www.jrengineering.com



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5710 VESSEY RD
COLORADO SPRINGS, CO 80908
GREGG & ELAINE CAWFIELD
(719) 413-6900

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



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

HORIZONTAL
ORIGINAL SCALE: 1" = 20'

VERTICAL
ORIGINAL SCALE: 1" = 2'

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

DATE: 5/31/24

J.R. ENGINEERING
A Westman Company

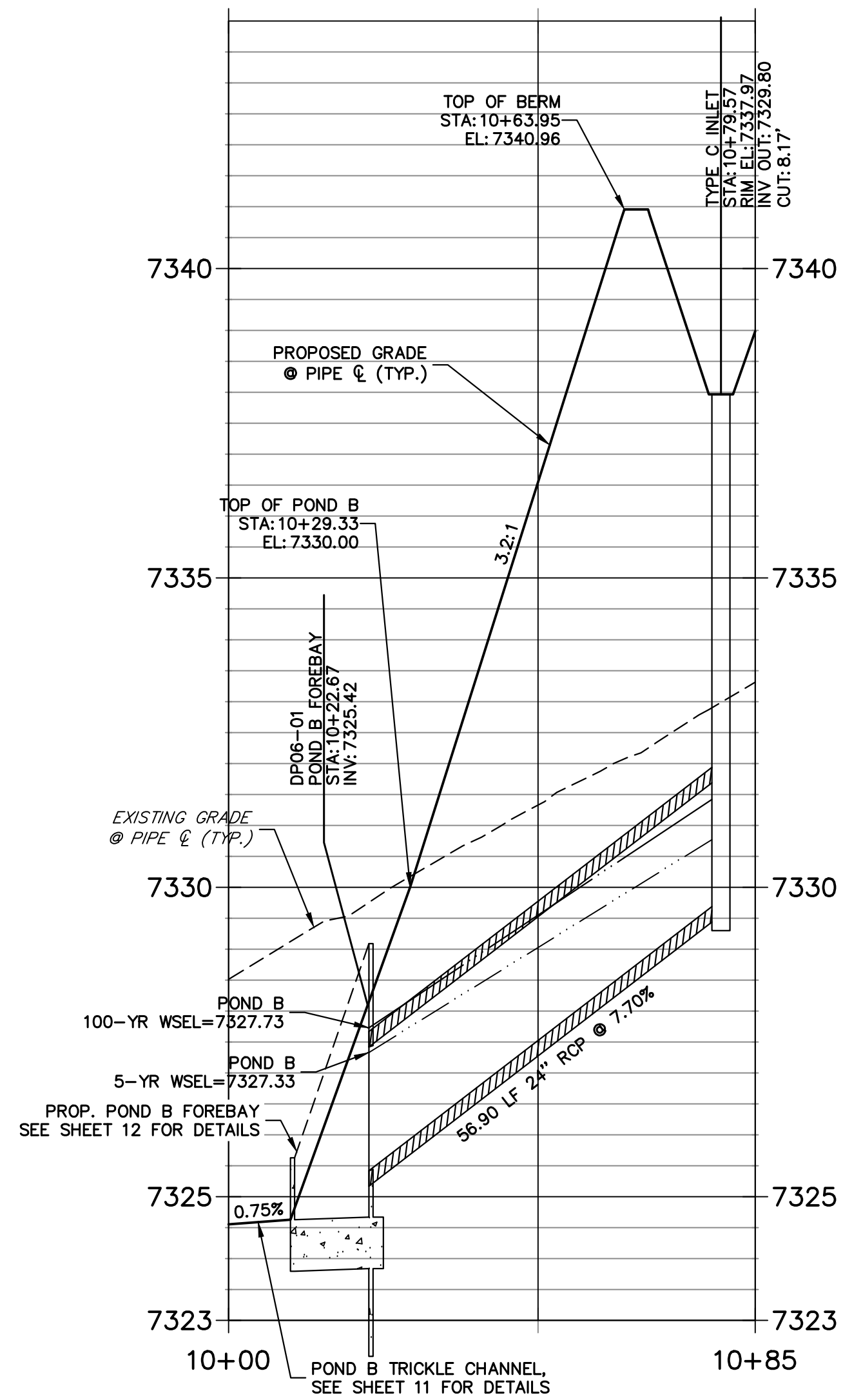
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No.	REVISION	BY	DATE

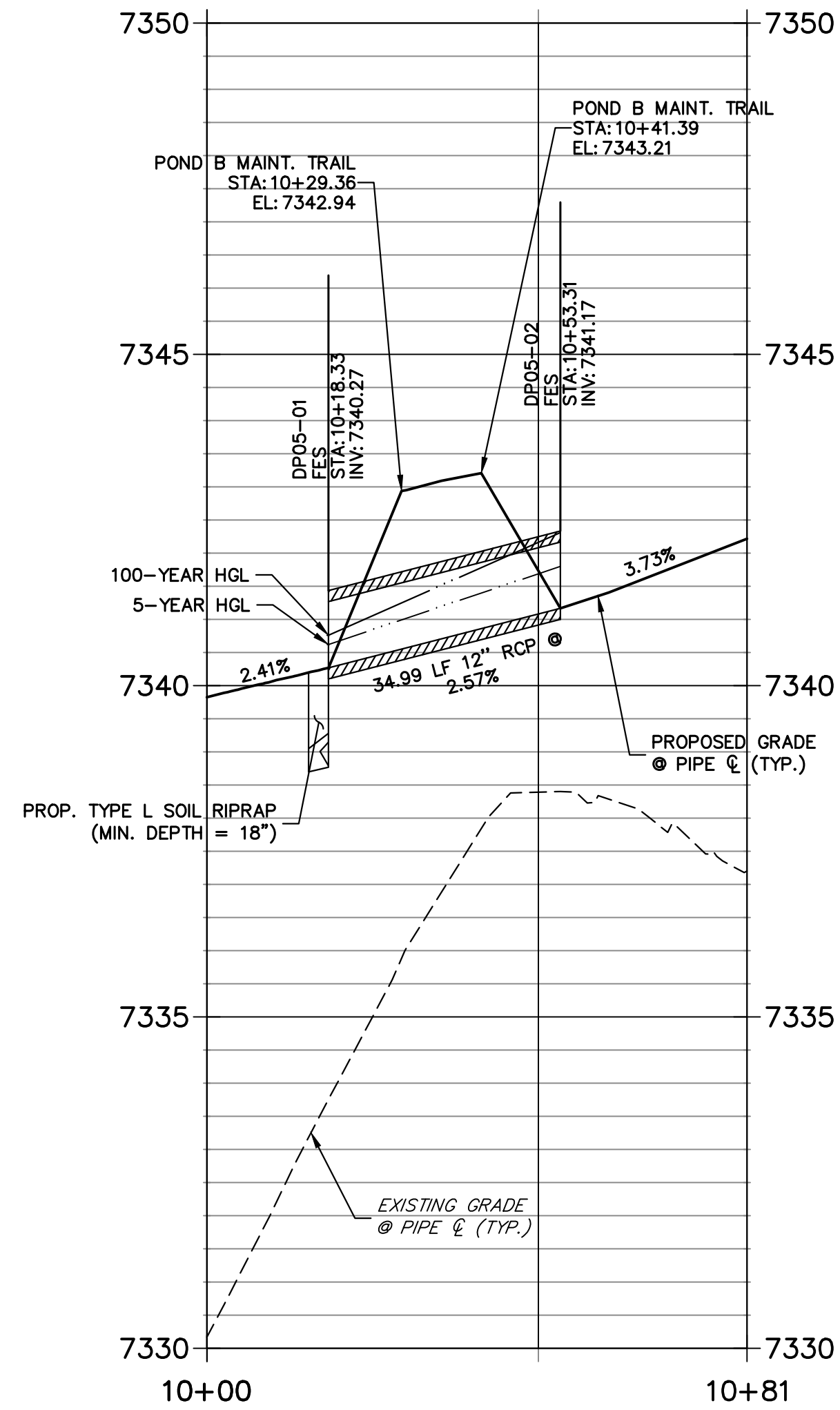
ESTATES AT CATHEDRAL PINES
STORM SEWER PLAN & PROFILE

SHEET 4 OF 16
JOB NO. 25260.00

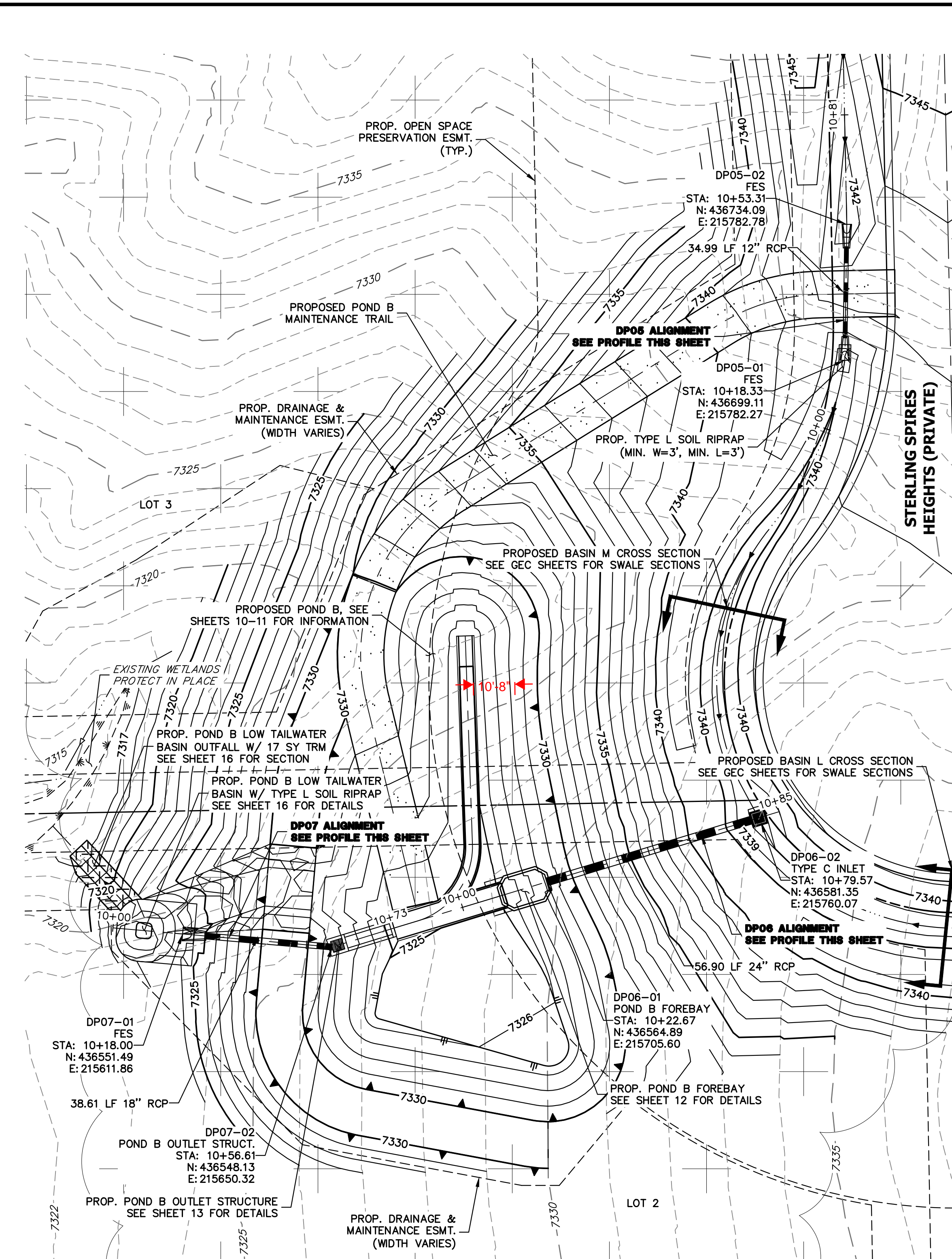
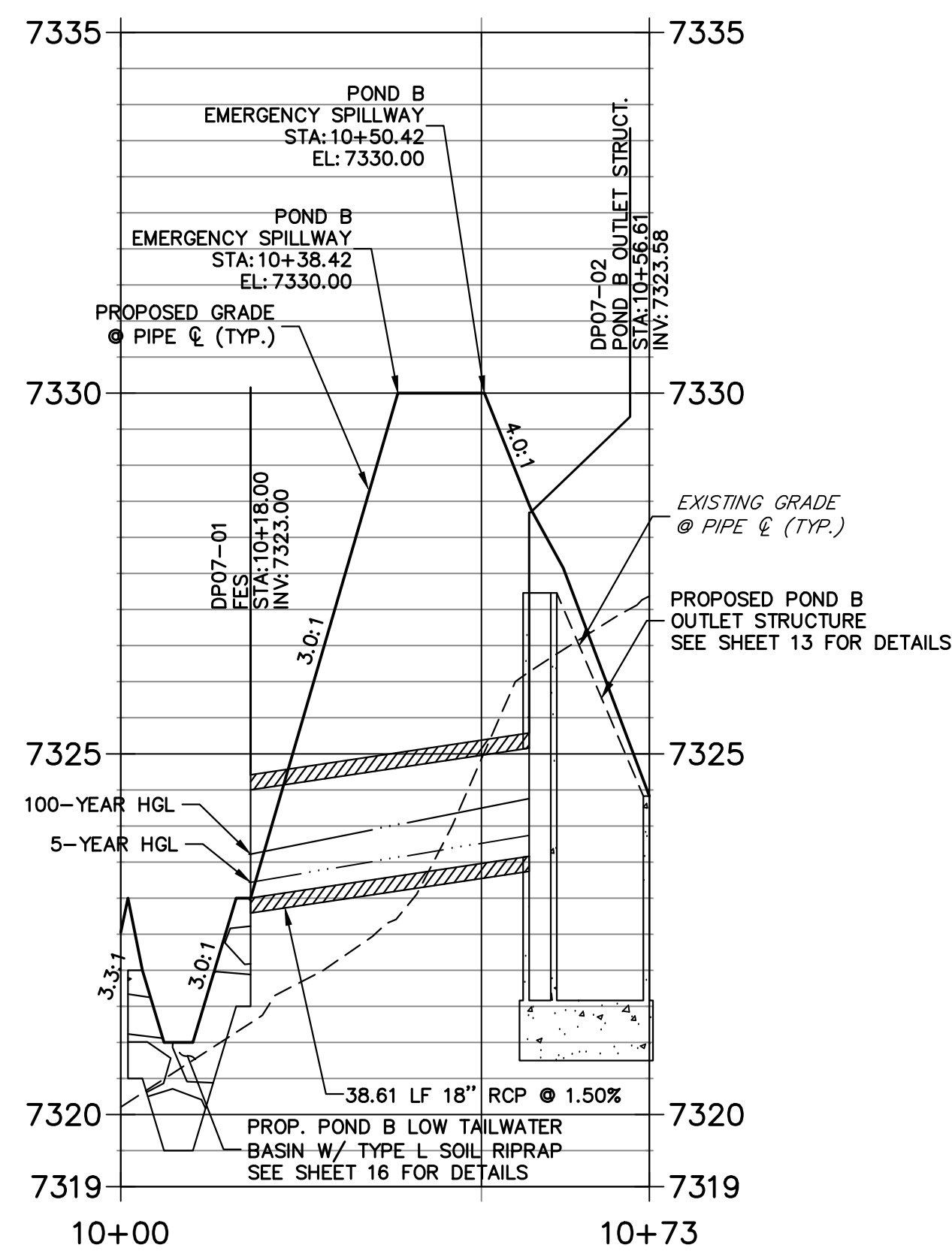
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**DP05 PROFILE
STA 9+99.97 TO 10+81.48**



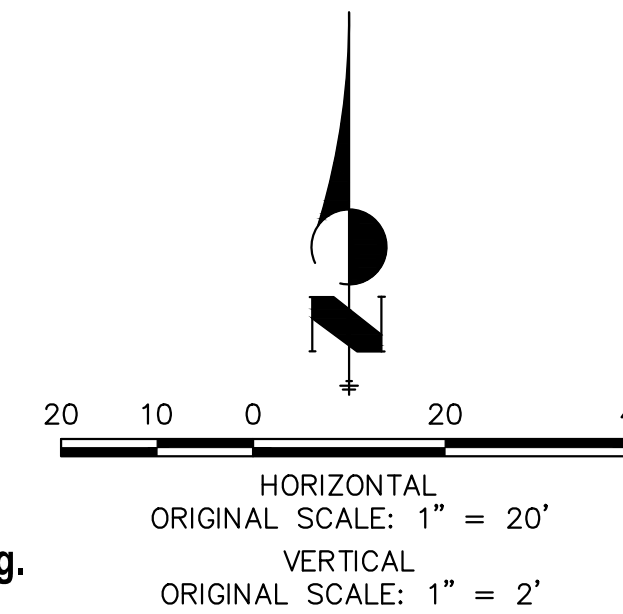
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STORM SEWER NOTES

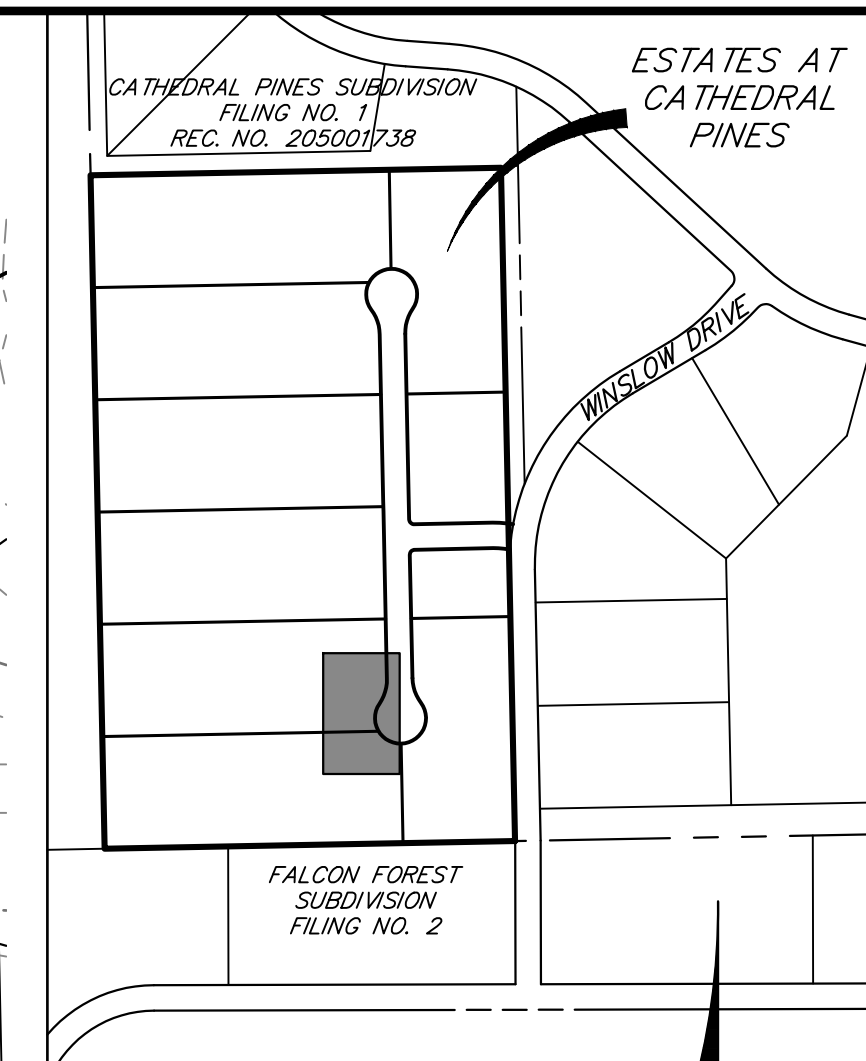
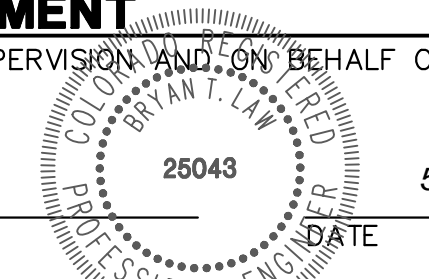
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ENGINEER'S STATEMENT

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



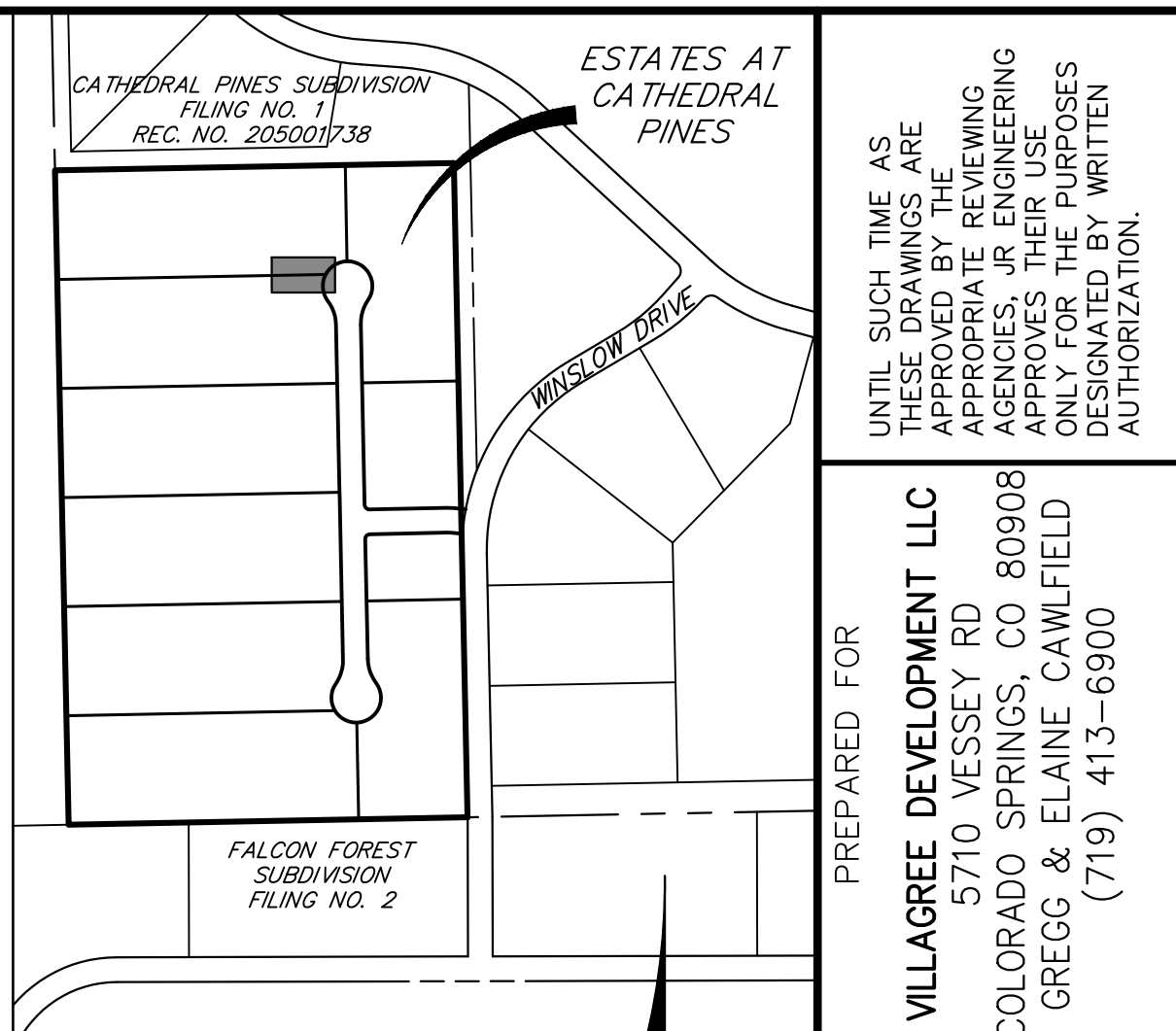
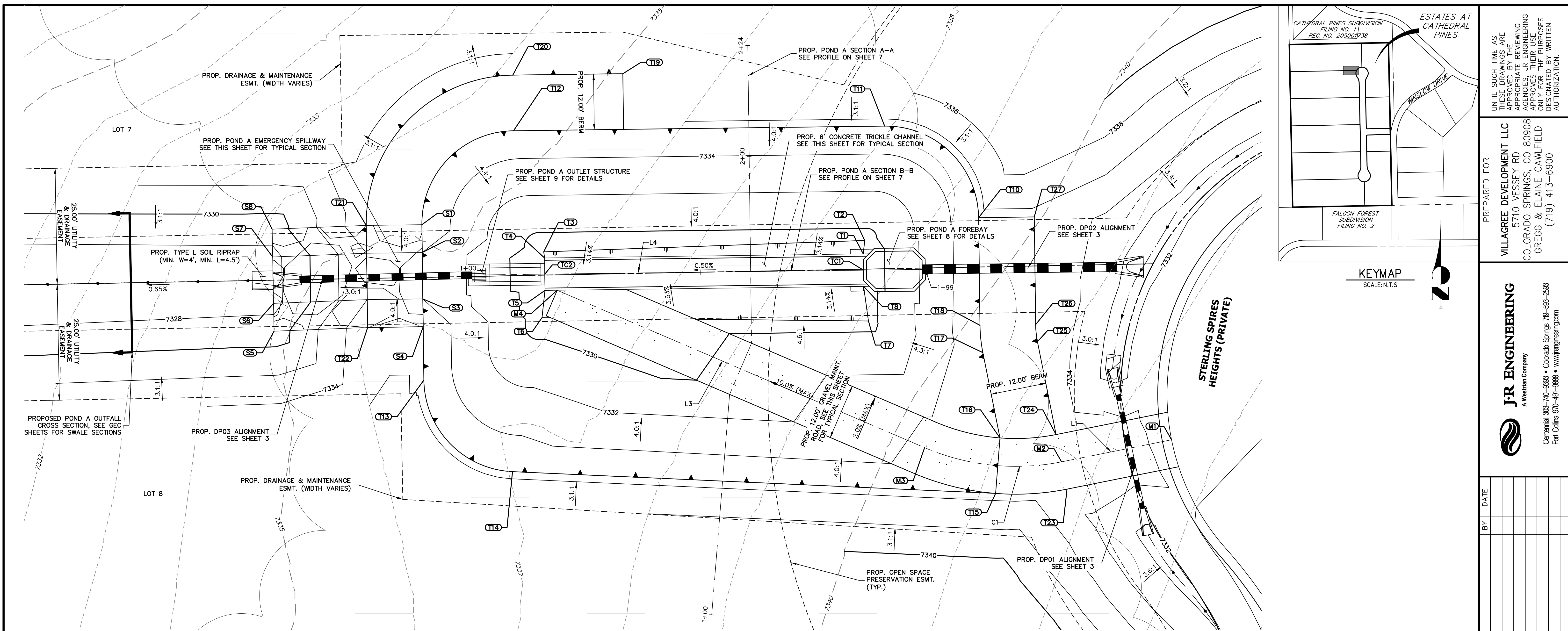
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.
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 VILLAGREE DEVELOPMENT LLC
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NO.	REVISION	DATE

H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=20'	1"=2'	05/15/24	GAG	GAG	

ESTATES AT CATHEDRAL PINES
 STORM SEWER PLAN & PROFILE
 SHEET 5 OF 16
 JOB NO. 25260.00



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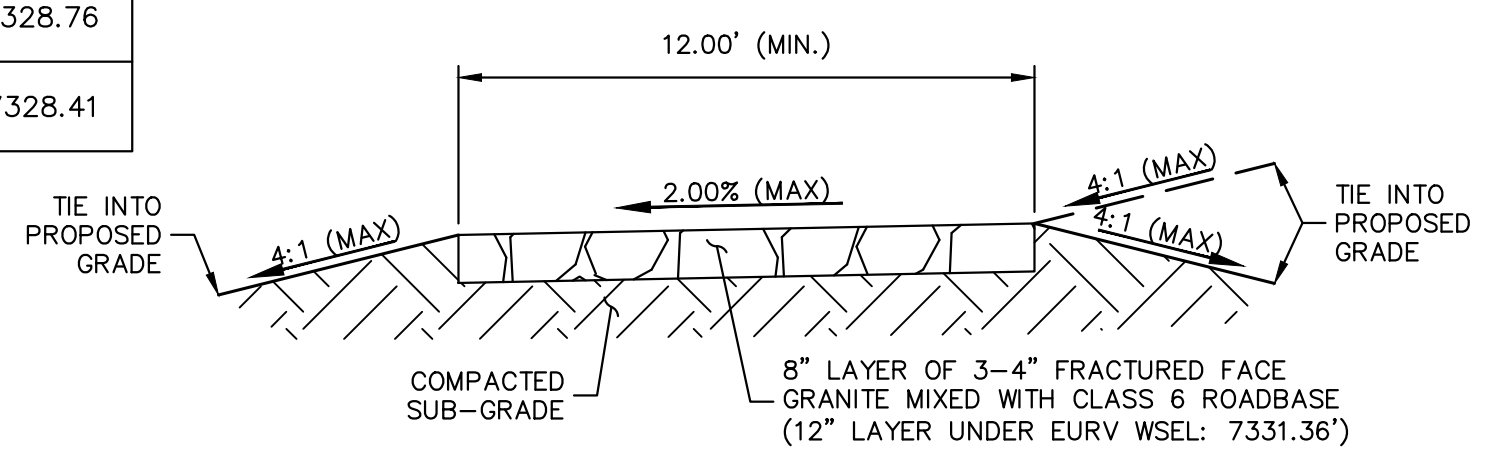
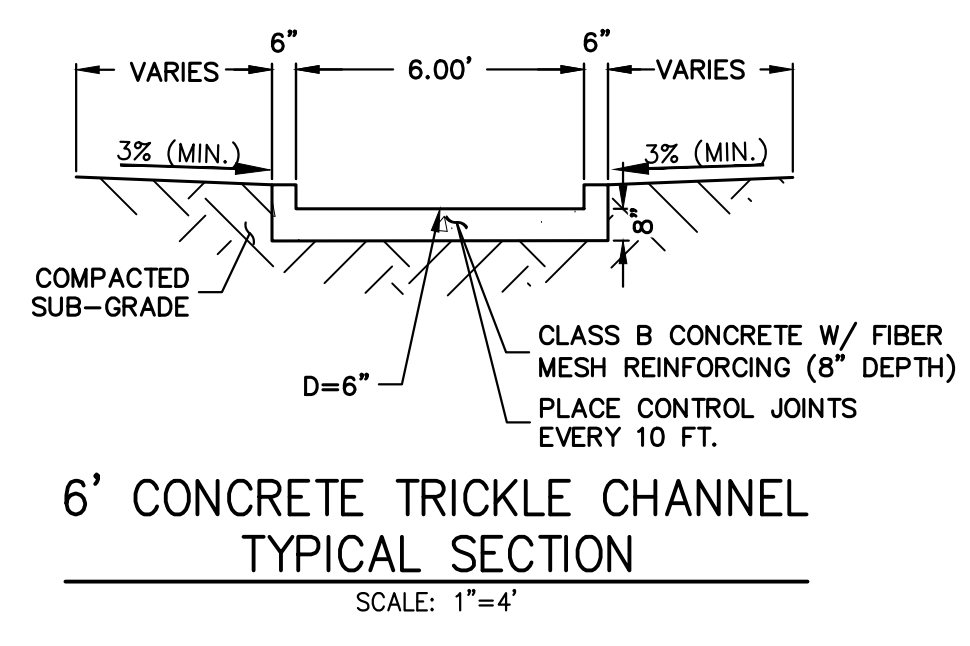
POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
M1	MAINT. ROAD CL	N: 437603.57 E: 215741.41	7333.81
M2	MAINT. ROAD CL	N: 437598.81 E: 215717.70	7335.50
M3	MAINT. ROAD CL	N: 437601.88 E: 215688.18	7334.35
M4	MAINT. ROAD CL	N: 437635.81 E: 215608.99	7328.93
S1	SPILLWAY/ TOP	N: 437649.94 E: 215579.84	7335.50
S2	SPILLWAY CREST	N: 437643.94 E: 215579.91	7334.00
S3	SPILLWAY CREST	N: 437633.94 E: 215580.04	7334.00
S4	SPILLWAY/ TOP	N: 437627.94 E: 215580.11	7335.50
S5	SPILLWAY MATCH EX.	N: 437626.98 E: 215547.97	±7328.90
S6	SPILLWAY MATCH EX.	N: 437632.98 E: 215547.86	±7327.40
S7	SPILLWAY MATCH EX.	N: 437642.98 E: 215547.67	±7327.40
S8	SPILLWAY MATCH EX.	N: 437648.98 E: 215547.56	±7328.90
T1	TOE	N: 437603.97 E: 215674.95	7329.26
T2	TOE	N: 437646.54 E: 215675.28	7329.35

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

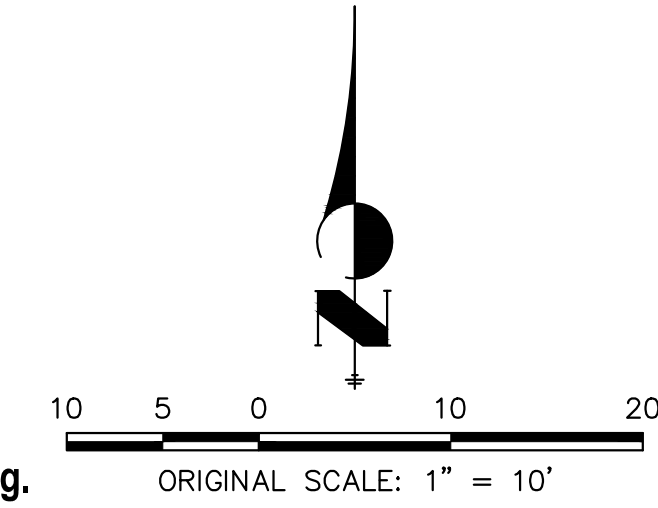
POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
T18	TOP/ BERM	N: 437628.25 E: 215700.12	7335.50
T19	TOP/ BERM	N: 437682.49 E: 215623.15	7335.50
T20	TOP/ BERM	N: 437682.19 E: 215599.43	7335.50
T21	TOP/ BERM	N: 437649.79 E: 215567.84	7335.50
T22	TOP/ BERM	N: 437627.79 E: 215568.14	7335.50
T23	TOP/ TRAIL	N: 437592.93 E: 215718.88	7335.50
T24	TOP/ BERM	N: 437604.70 E: 215716.52	7335.50
T25	TOP/ BERM	N: 437624.72 E: 215712.51	7335.50
T26	TOP/ BERM	N: 437628.40 E: 215712.12	7335.50
T27	TOP/ BERM	N: 437651.61 E: 215711.83	7335.50
TC1	TC CL FLOWLINE	N: 437640.14 E: 215675.00	7328.76
TC2	TC CL FLOWLINE	N: 437639.27 E: 215606.32	7328.41

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'



- 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.



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

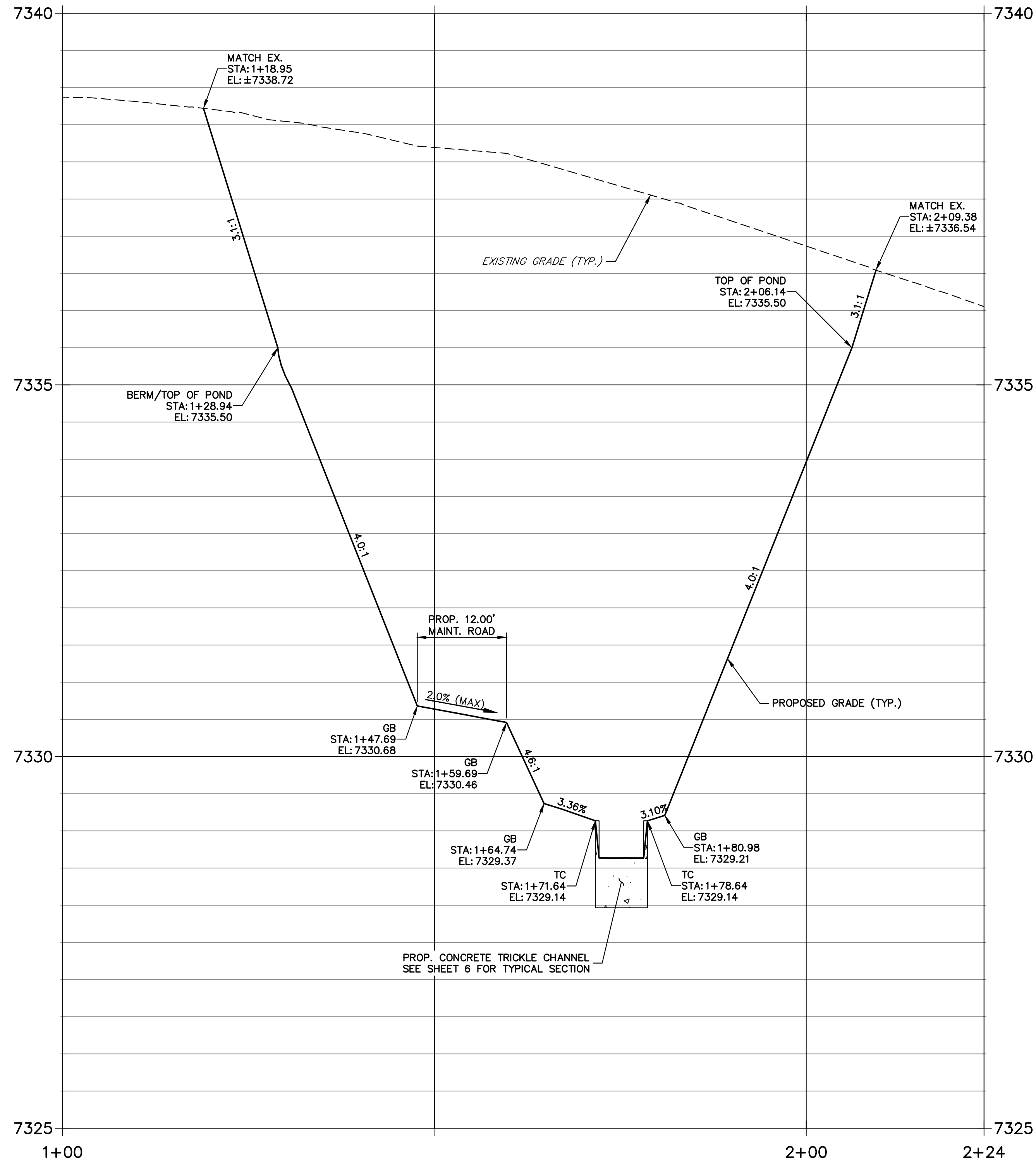
DATE: 5/31/24

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.

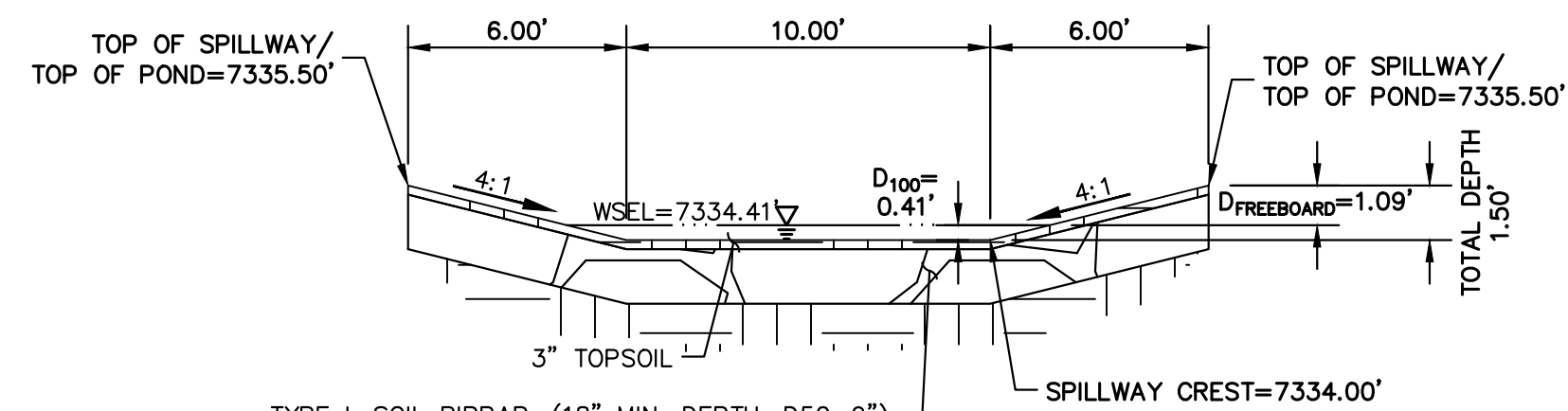
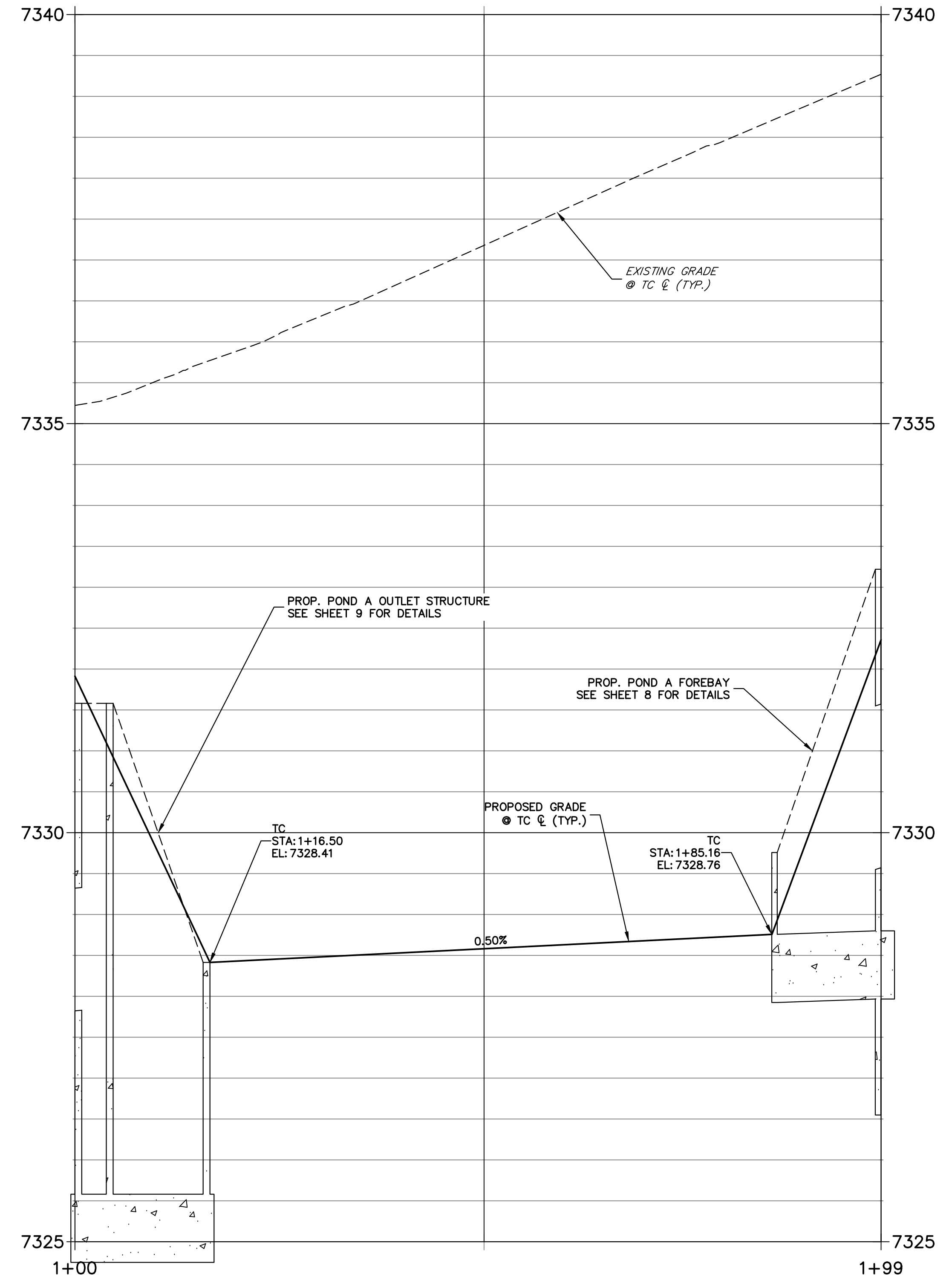
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			H-SCALE	V-SCALE			
			1"=10'	N/A			
					05/15/24	GAG	GAG

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

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



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



TYPE L SOIL RIPRAP, (18" MIN. DEPTH, D₅₀=9") PER MHFD SPEC. SECTION 31-37-00, THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH 65% RIPRAP AND 35% SOIL BY VOLUME. SOIL RIPRAP SHALL CONSIST OF UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS. SEE SHEET 16 FOR DETAILS.

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

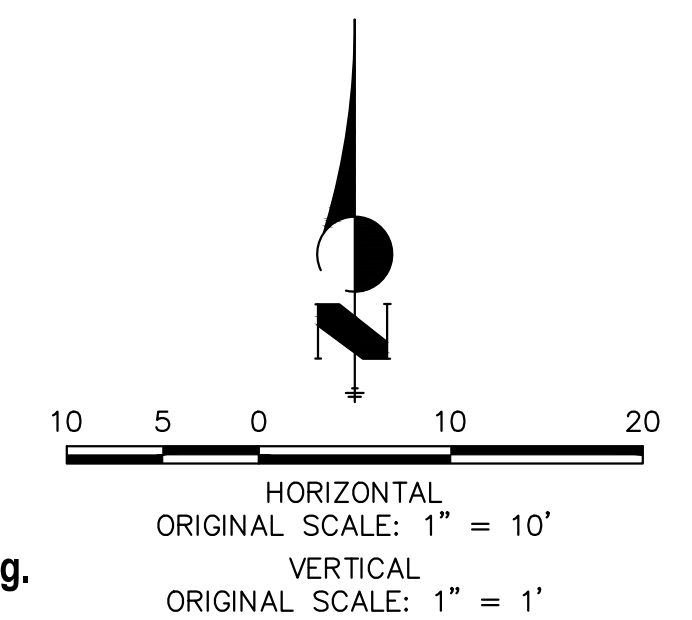
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- SEE PRIVATE STREET IMPROVEMENT PLANS BY JR ENGINEERING FOR PROPOSED PRIVATE STREET DESIGN.
- SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.



Know what's below.
Call before you dig.



ENGINEER'S STATEMENT

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 BRYAN T. LAW, P.E.
 COLORADO P.E. 25043
 FOR AND ON BEHALF OF JR ENGINEERING
 DATE: 5/31/24

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

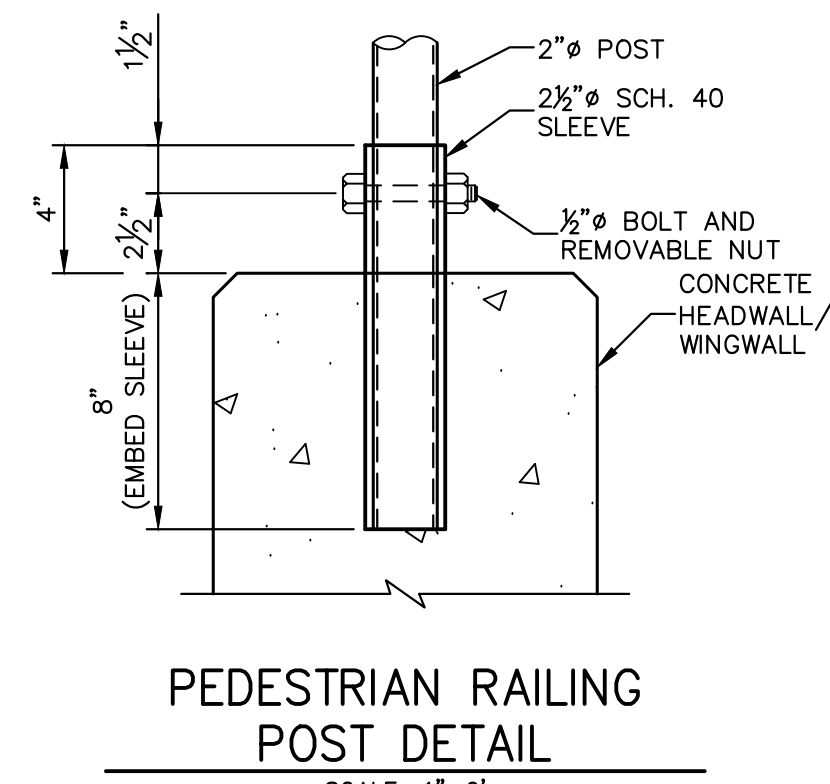
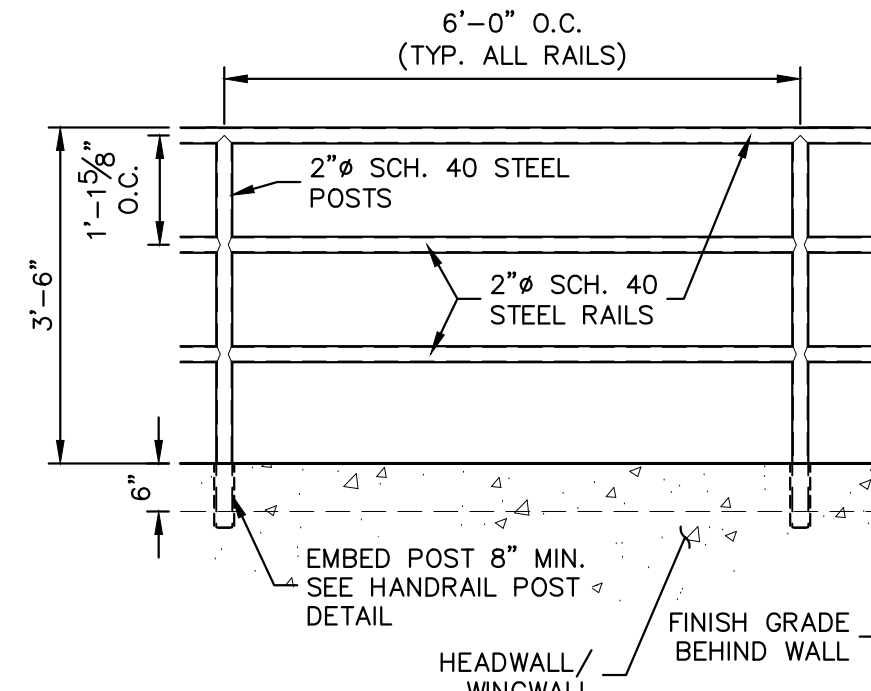
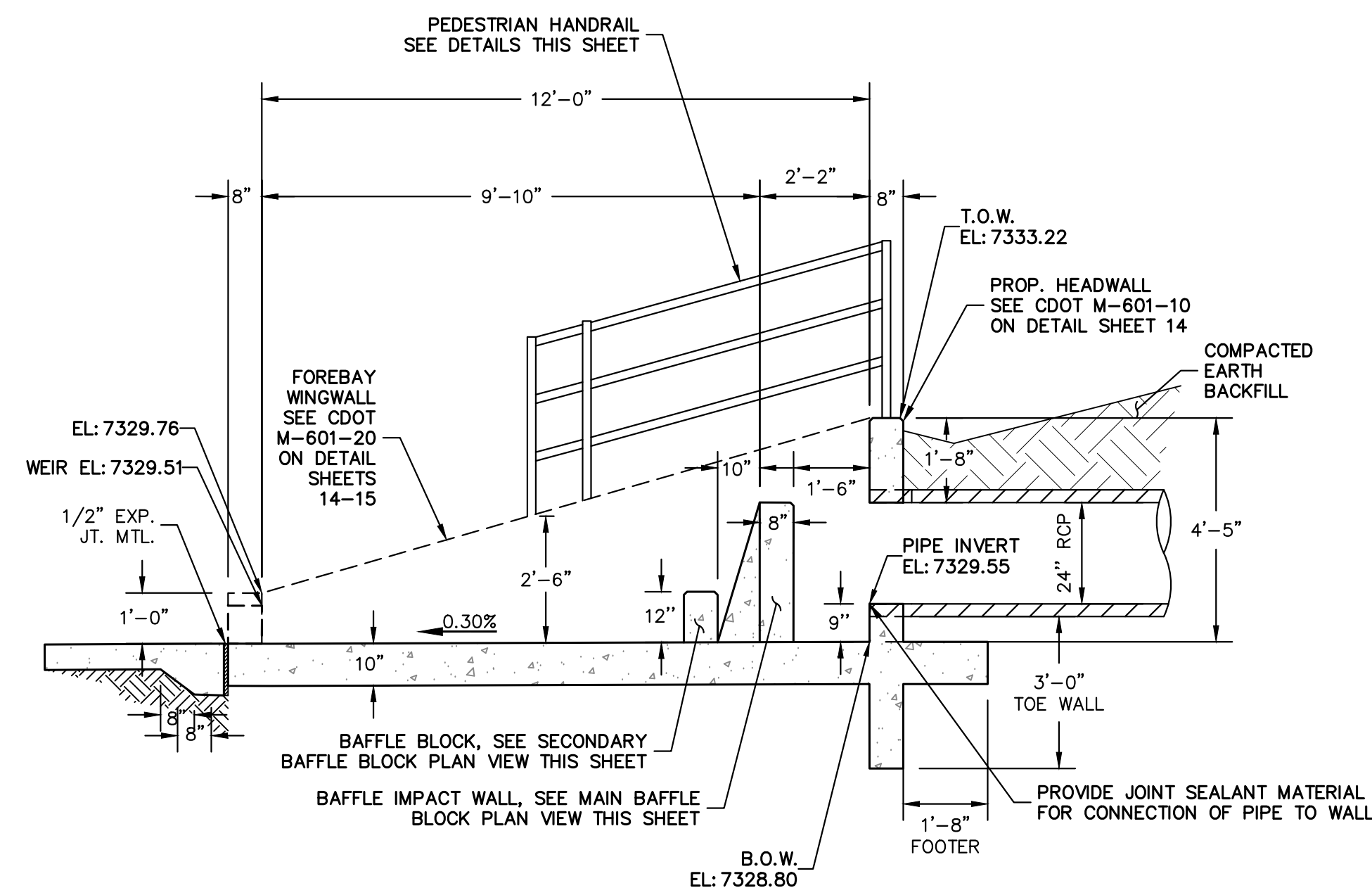
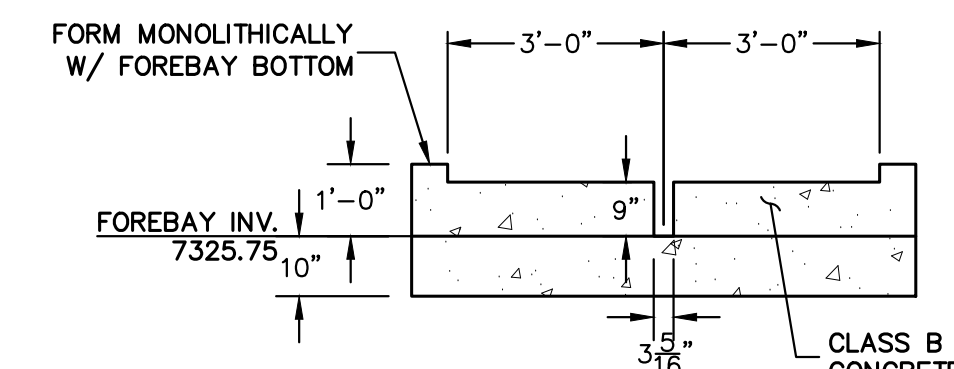
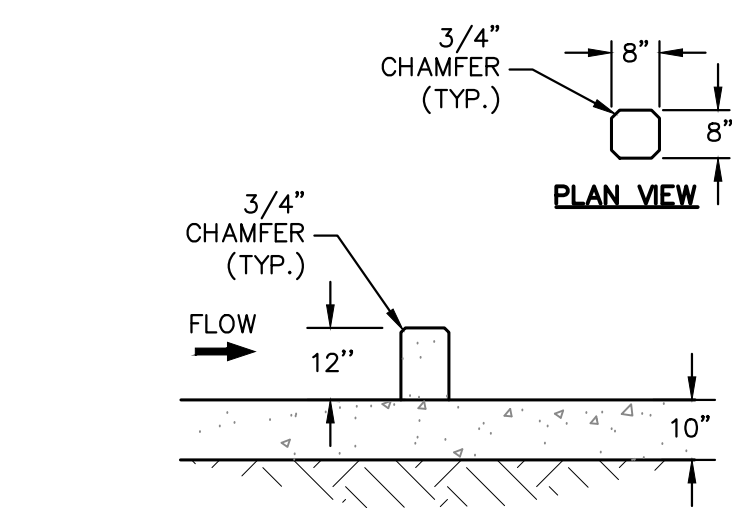
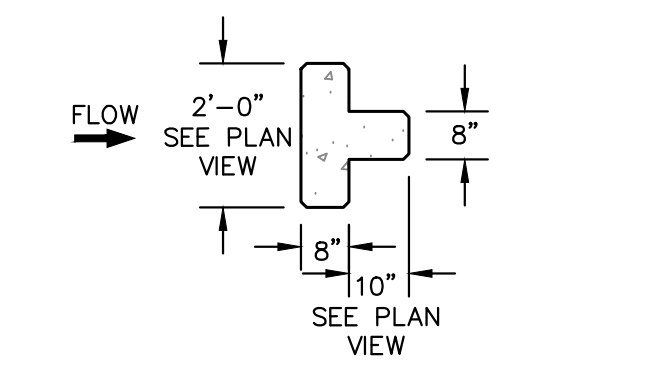
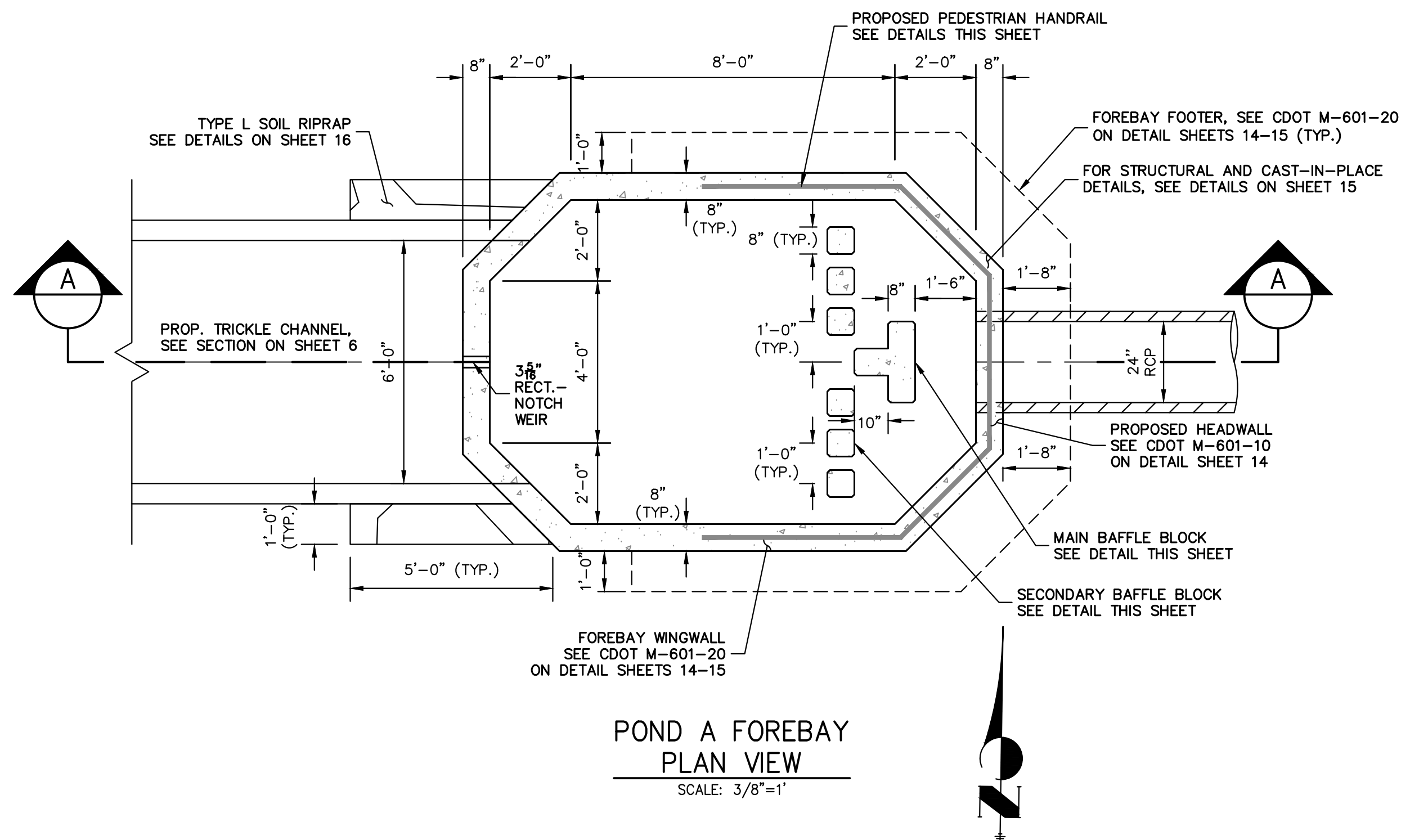
J.R. ENGINEERING
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BY	DATE	No.	REVISION

H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=10'	1"=1'	05/15/24	GAG	GAG	

ESTATES AT CATHEDRAL PINES
 POND PLANS AND DETAILS

SHEET 7 OF 16
 JOB NO. 25260.00



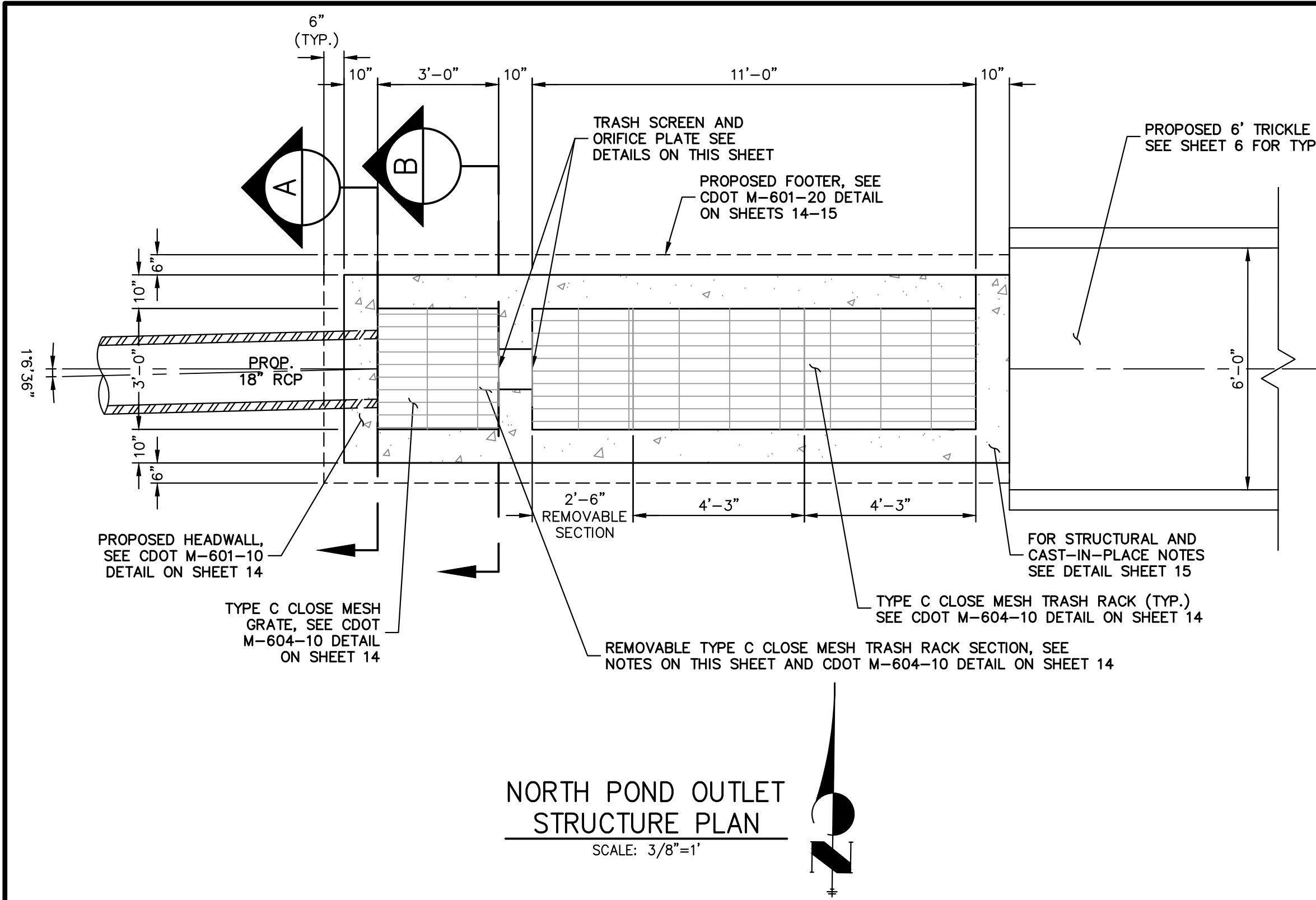
ENGINEER'S STATEMENT
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 BRYAN T. LAW, P.E.
 COLORADO P.E. 25043
 FOR AND ON BEHALF OF JR ENGINEERING

DATE: 5/31/24

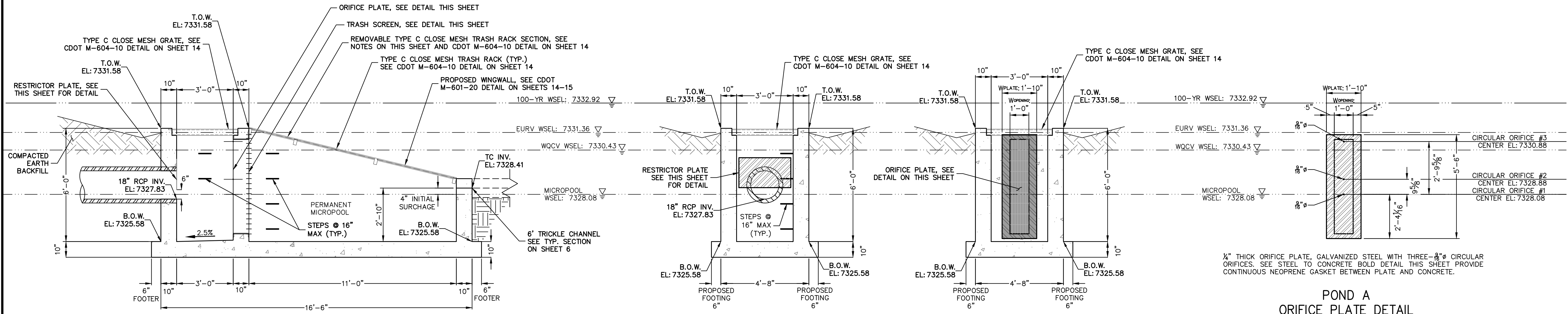
25043



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J.R. ENGINEERING A Westman Company Centennial 300-740-9888 • Colorado Springs 719-583-2583 Fort Collins 970-491-9888 • www.jrengineering.com	
ESTATES AT CATHEDRAL PINES	POND PLANS AND DETAILS
SHEET 8 OF 16	JOB NO. 25260.00
H-SCALE: 3/8"=1' V-SCALE: 3/8"=1' DATE: 05/15/24 DESIGNED BY: GAG DRAWN BY: GAG CHECKED BY:	No. REVISION BY DATE



**NORTH POND OUTLET
STRUCTURE PLAN**
SCALE: 3/8"=1'

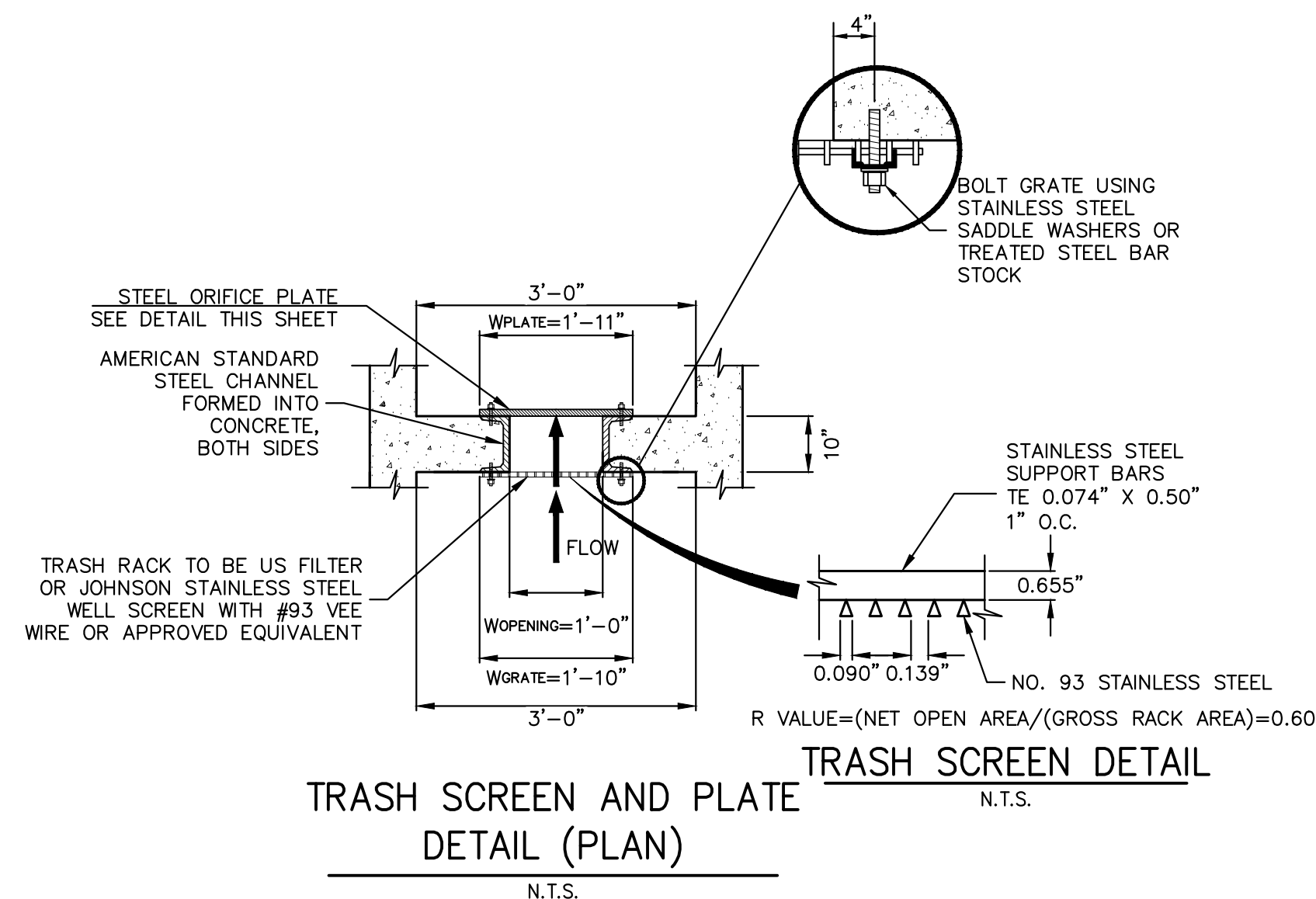


**POND A OUTLET
STRUCTURE PROFILE**
SCALE: 3/8"=1'

A A-A SECTION
SCALE: 3/8"=1'

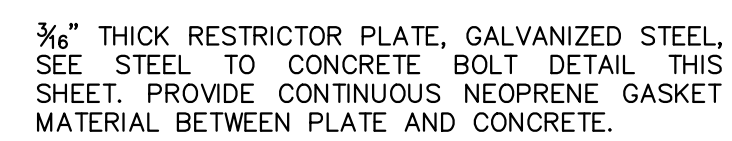
B B-B SECTION
SCALE: 3/8"=1'

**POND A
ORIFICE PLATE DETAIL**
SCALE: 3/8"=1'

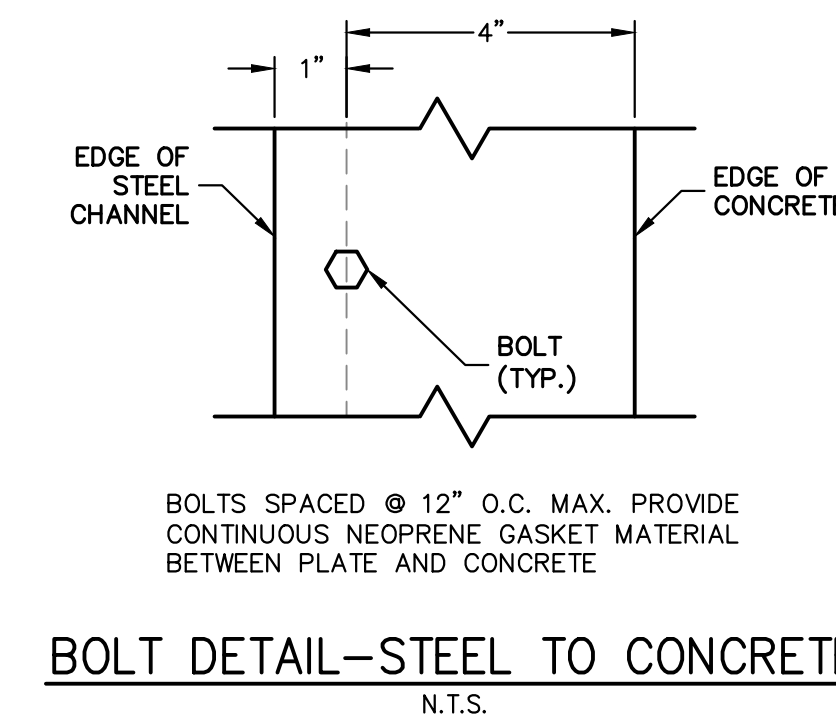


**TRASH SCREEN AND ORIFICE PLATE
DETAIL (PLAN)**
N.T.S.

TRASH SCREEN DETAIL
N.T.S.



**POND A
RESTRICTOR PLATE DETAIL**
SCALE: 3/8"=1'

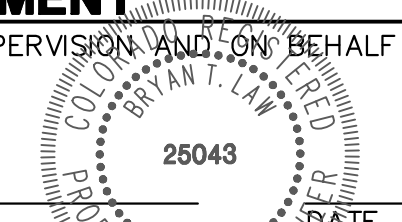


BOLT DETAIL-STEEL TO CONCRETE
N.T.S.



ENGINEER'S STATEMENT

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



OUTLET STRUCTURE PLATE AND GRADING NOTES:

- 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 1/4" SCH.40 STEEL PIPE, GALVANIZED, @ 6" CENTERS. SUPPORT BARS SHALL BE 1/2"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 CDOT 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 AGENCIES, JR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.

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

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No.	REVISION	BY	DATE

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

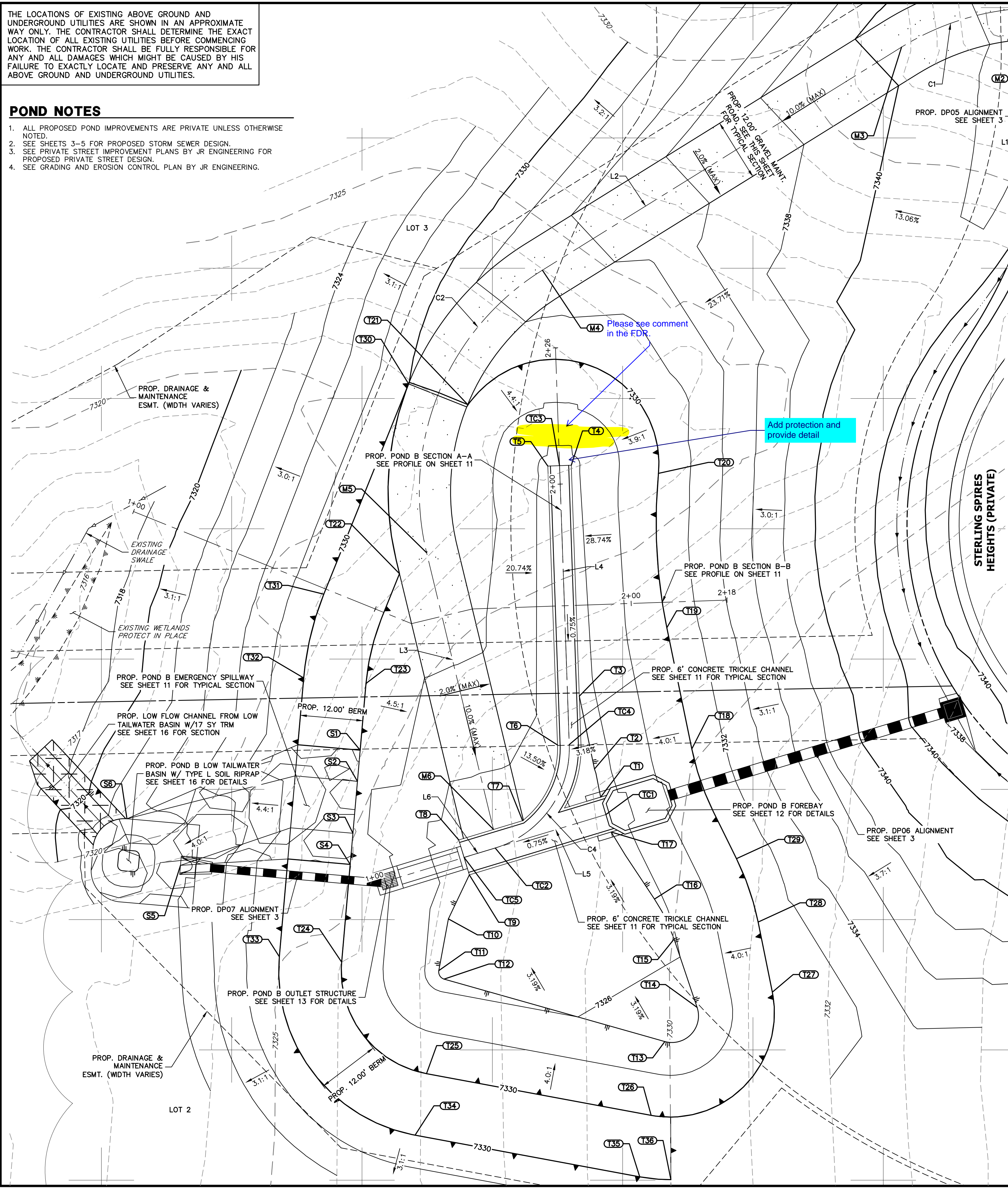
ESTATES AT CATHEDRAL PINES
 POND PLANS AND DETAILS

SHEET 9 OF 16
 JOB NO. 25260.00

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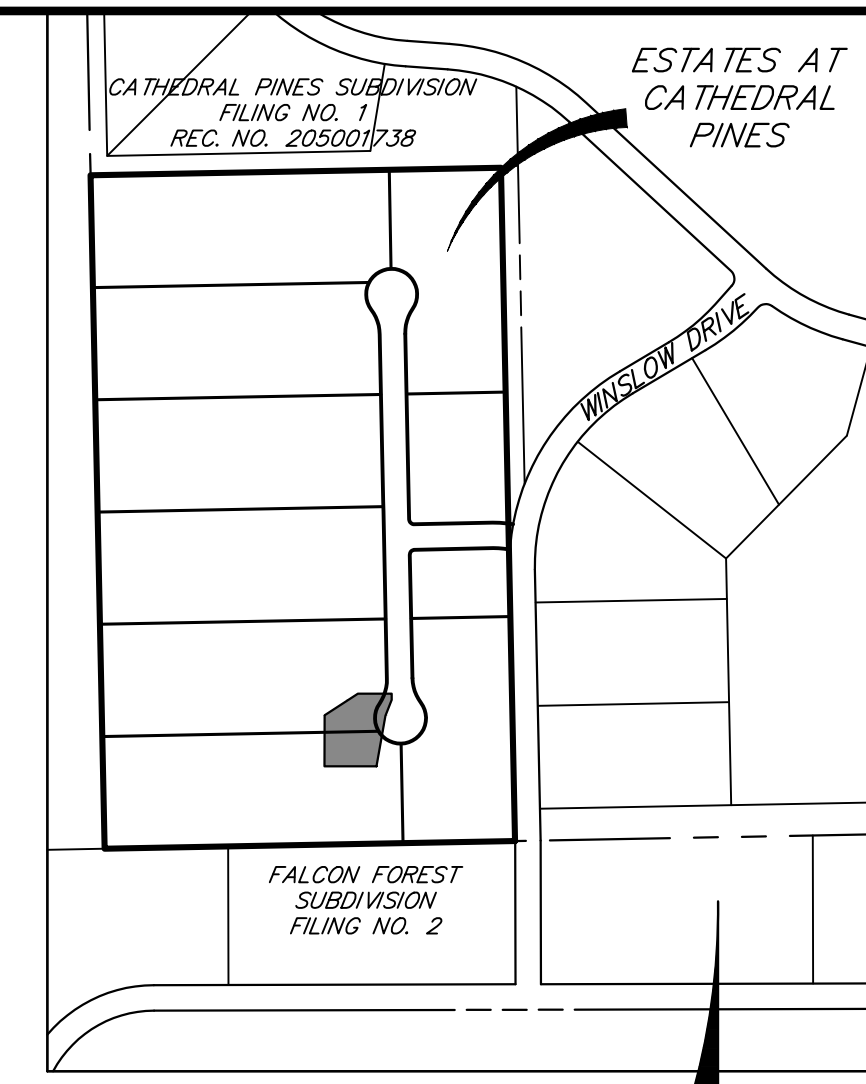
POND NOTES

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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'



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: 215647.19	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: 215686.25	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

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

ORIGINAL SCALE: 1" = 10'

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

DATE: 5/31/24

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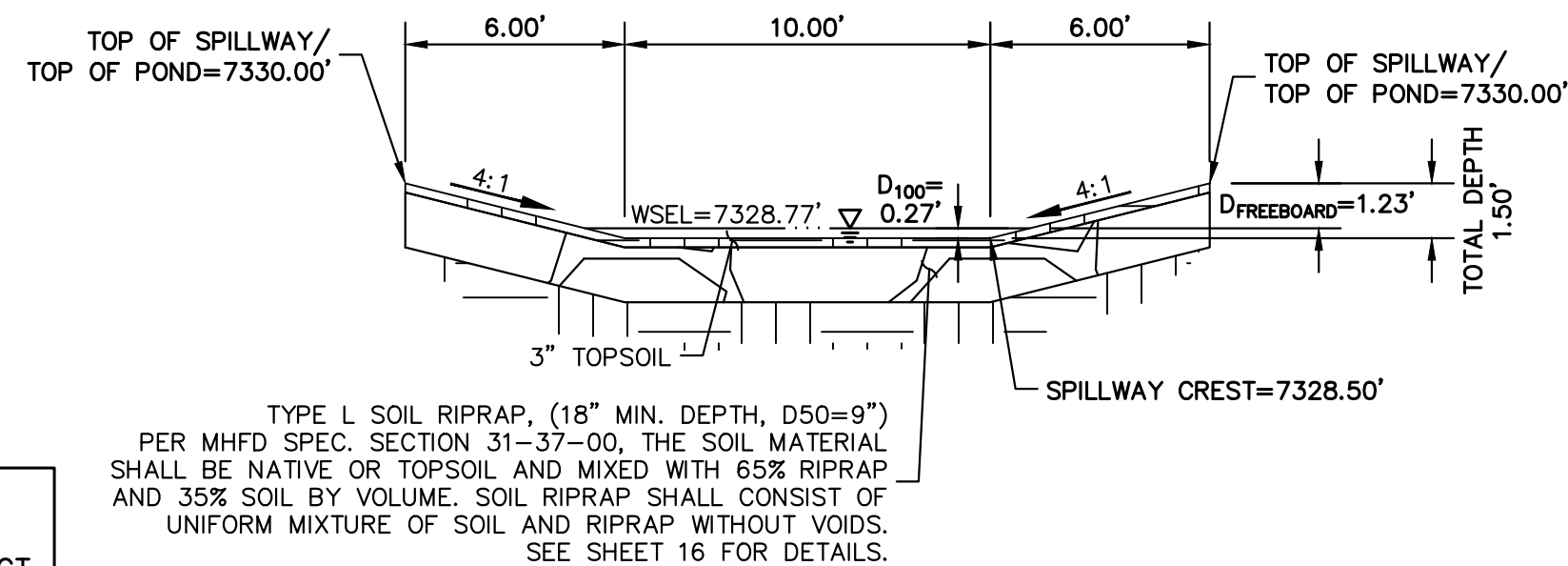
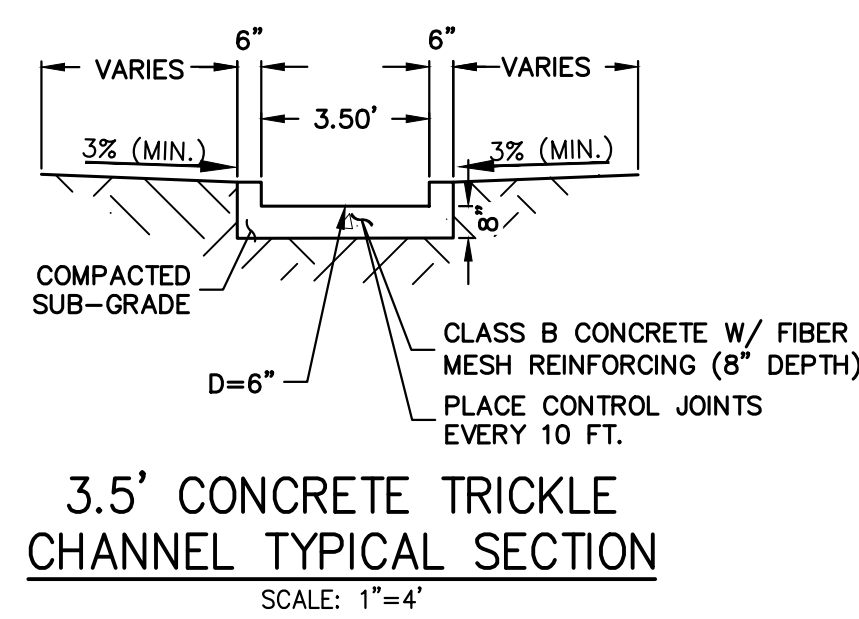
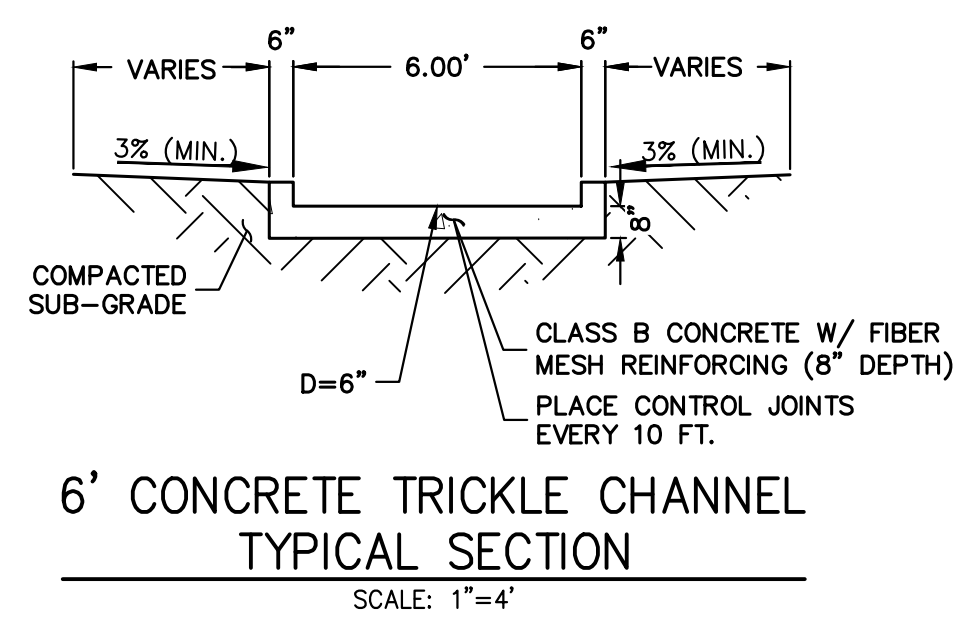
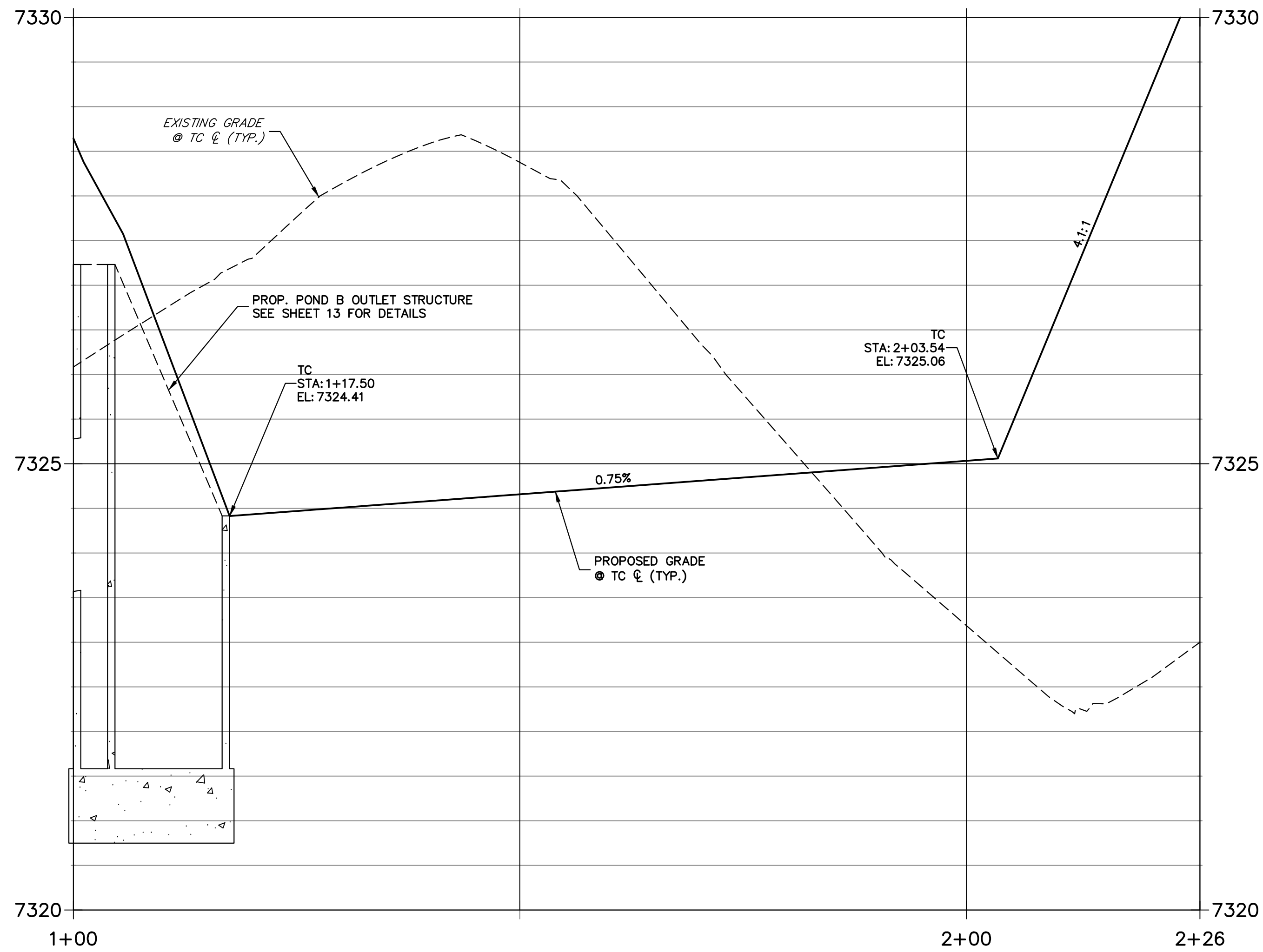
ESTATES AT CATHEDRAL PINES
POND PLANS AND DETAILS

SHEET 10 OF 16
JOB NO. 25260.00

POND NOTES

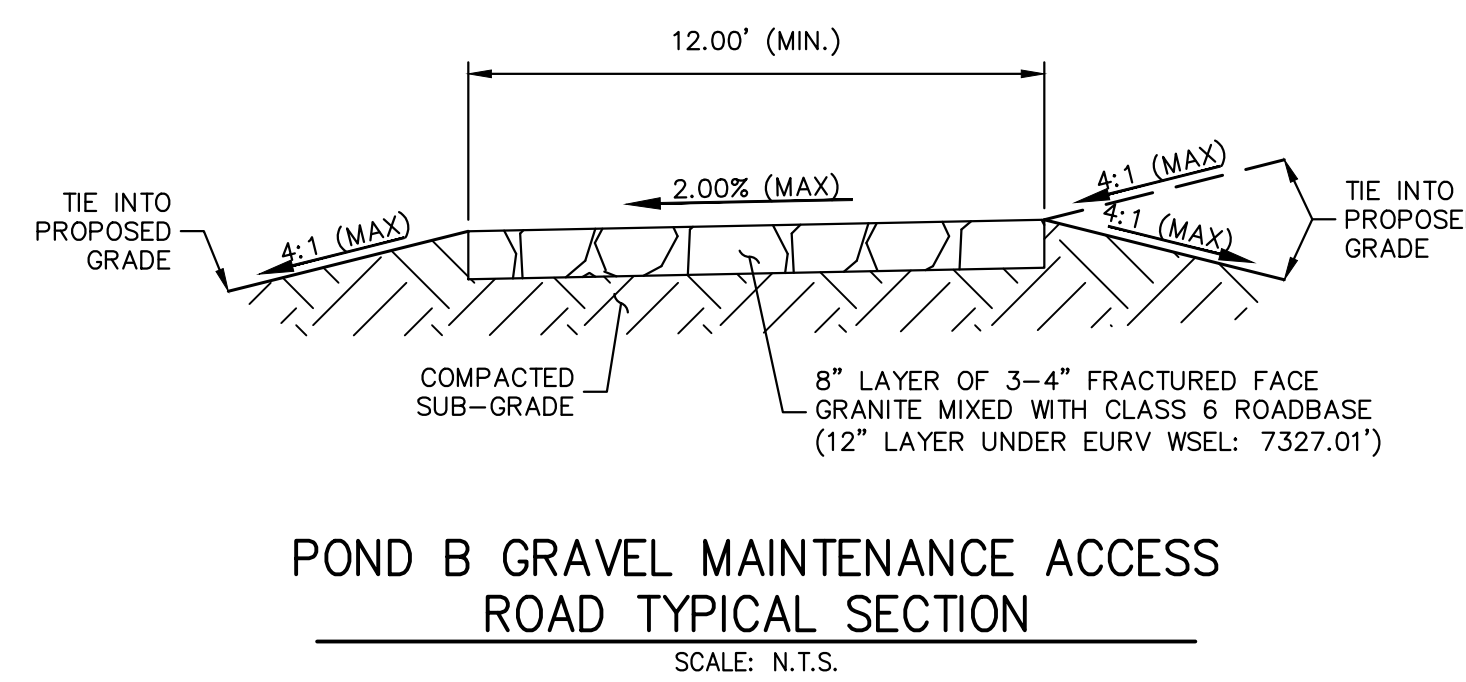
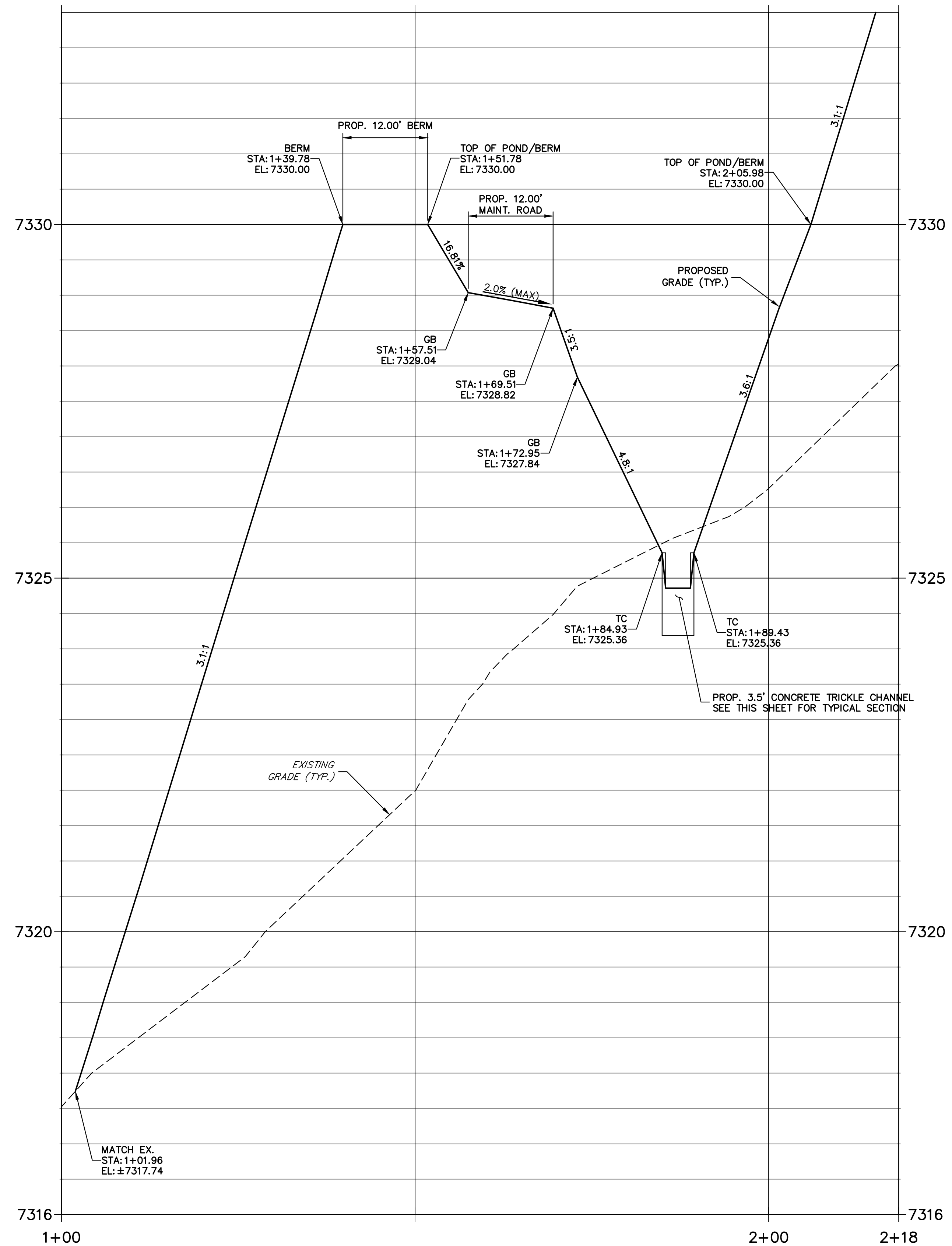
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4. SEE GRADING AND EROSION CONTROL PLAN BY JR ENGINEERING.

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

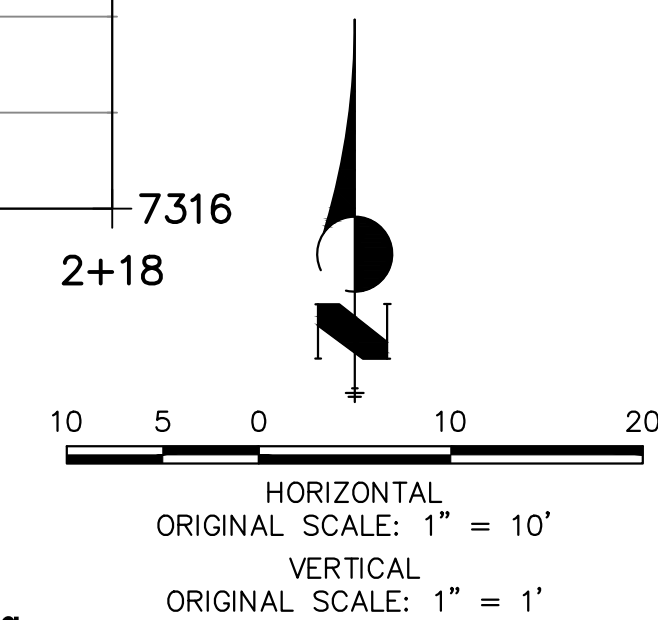


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**POND B SECTION B-B PROFILE
STA 1+00.00 TO 2+18.39**



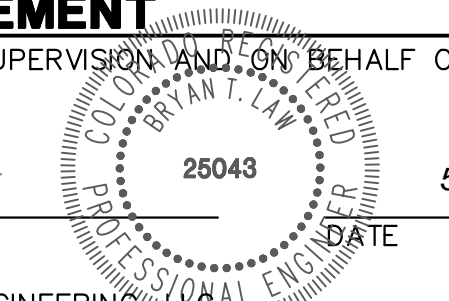
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Call before you dig.



ENGINEER'S STATEMENT

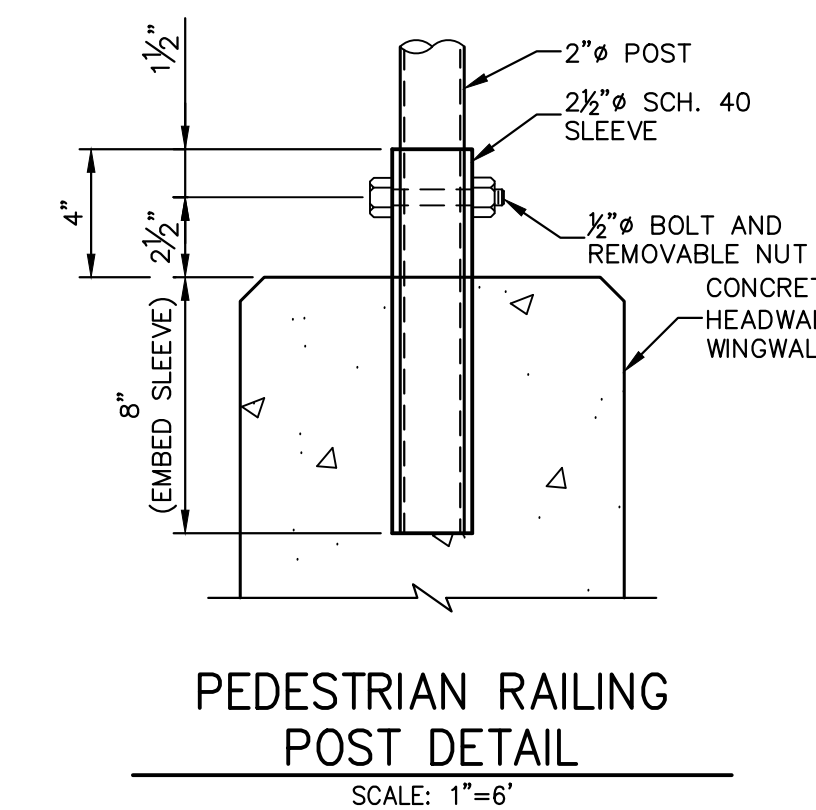
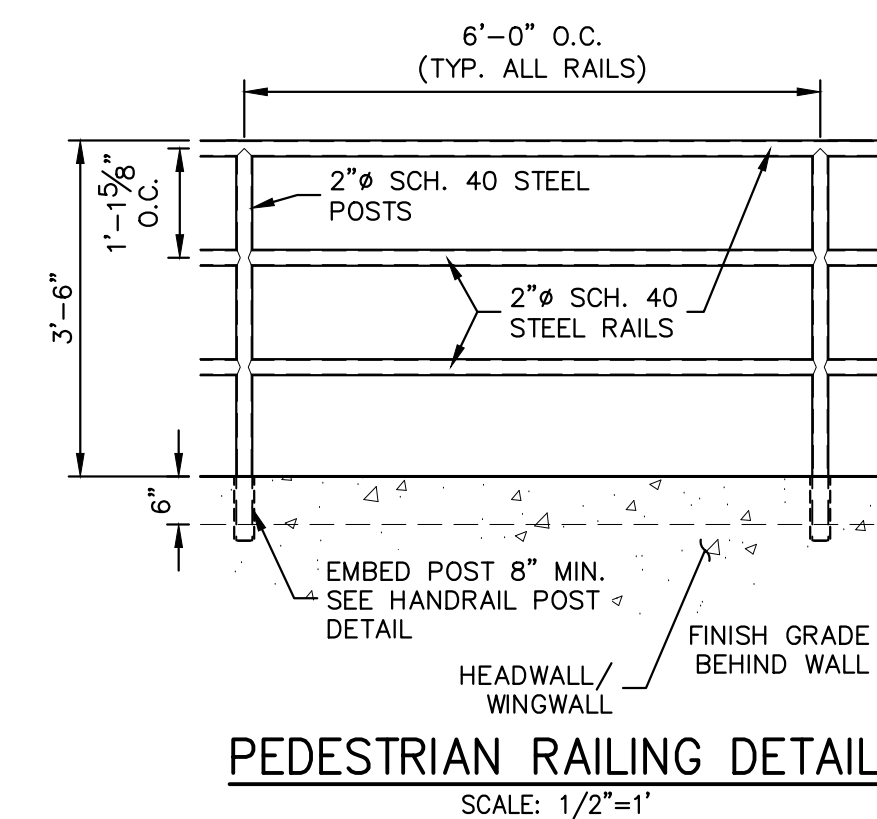
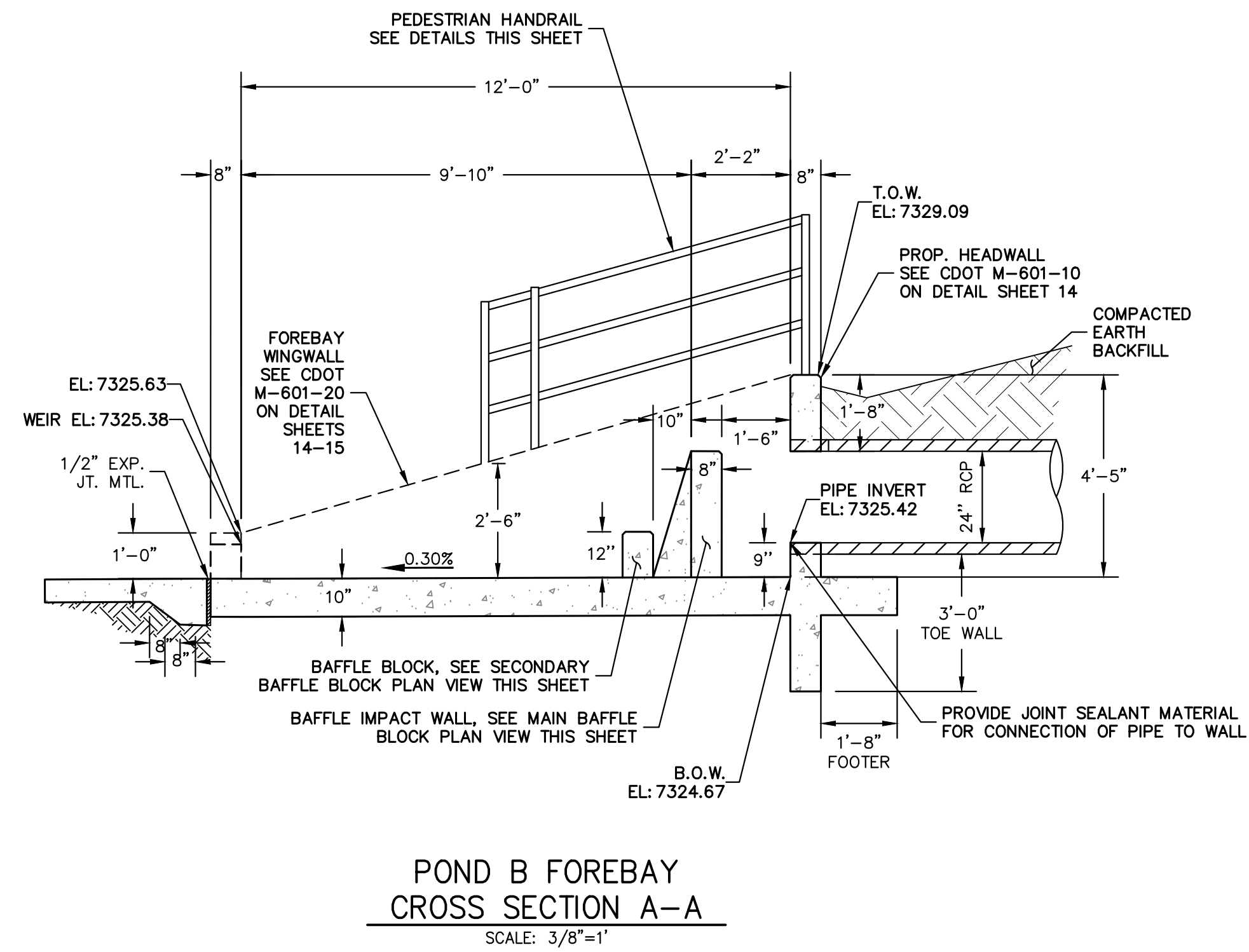
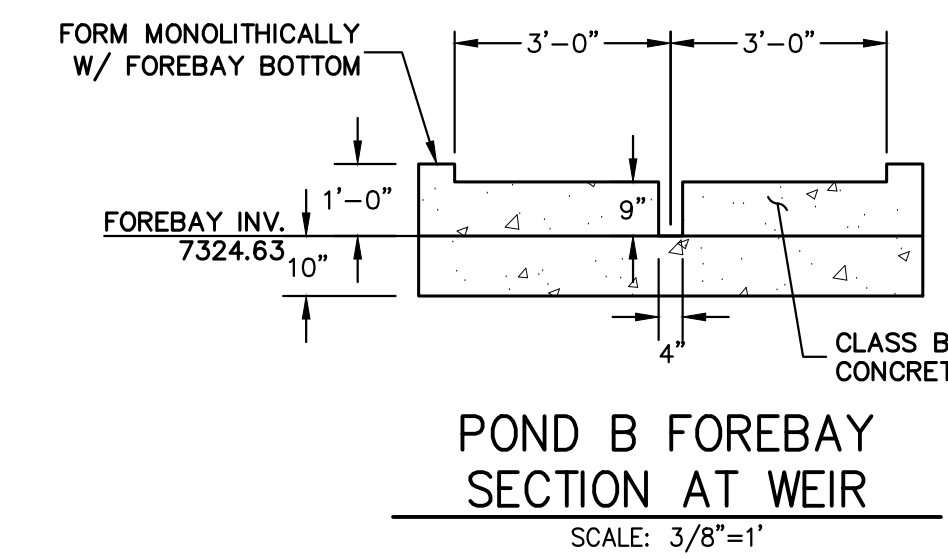
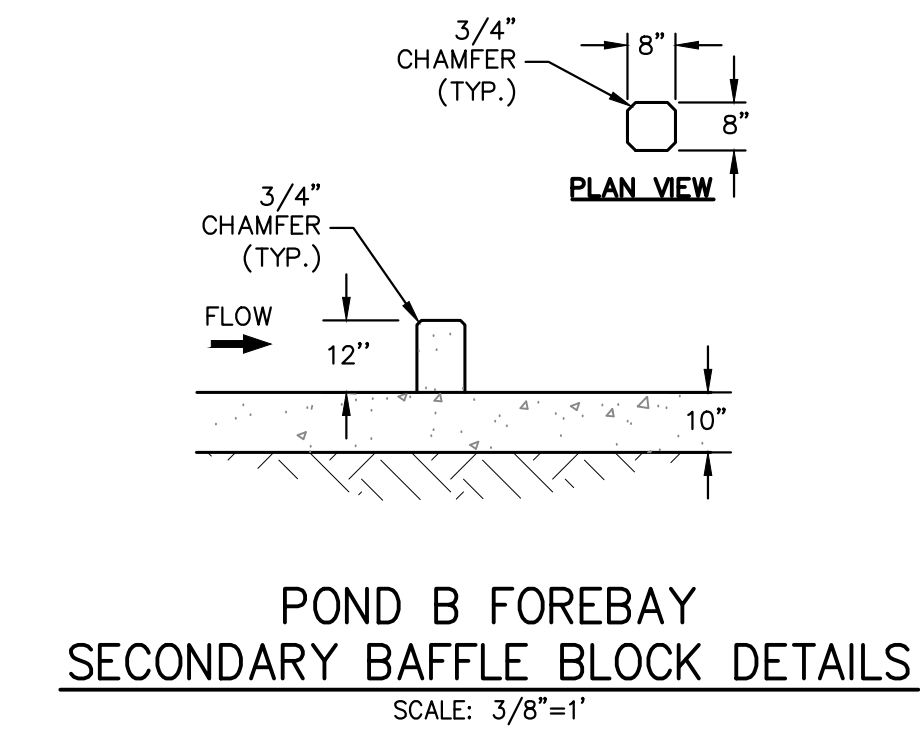
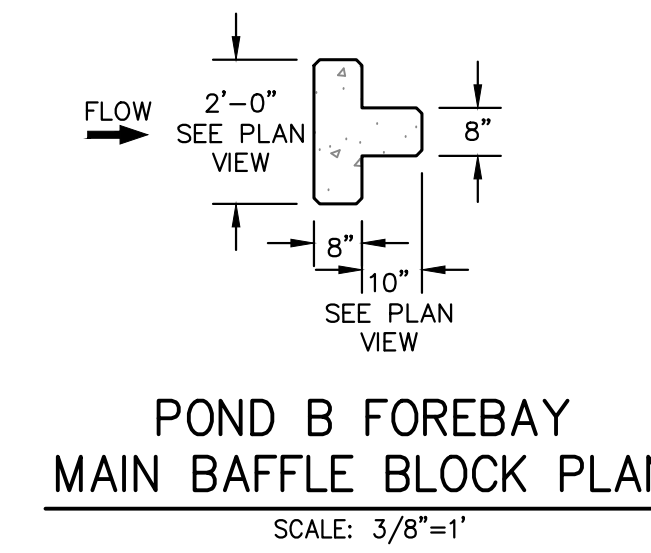
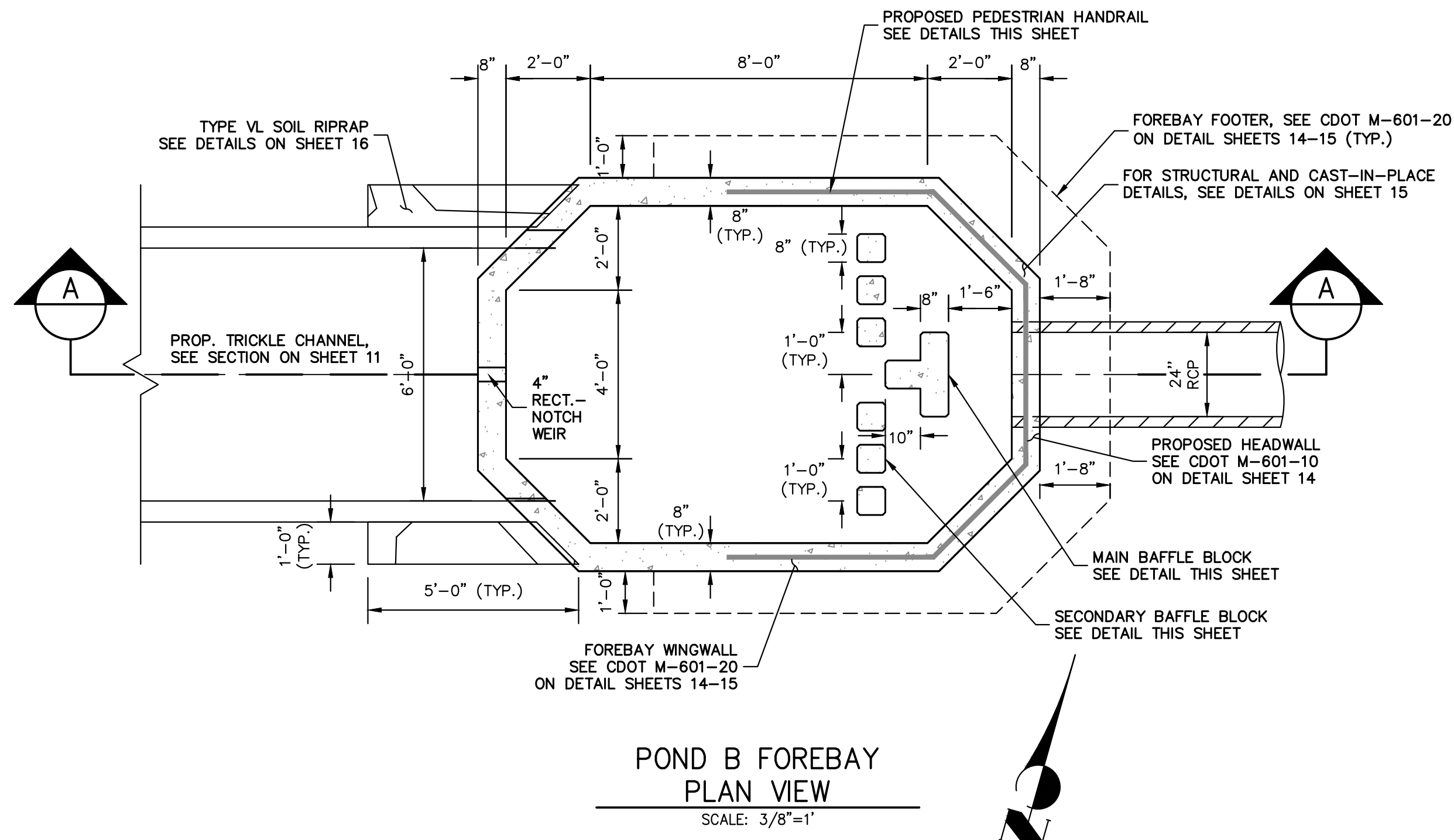
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

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



5/31/24

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR	VILLAGREE DEVELOPMENT LLC 5710 VESSEY RD COLORADO SPRINGS, CO 80908 GREGG & ELAINE CAWFIELD (719) 413-6900
BY	J.R. ENGINEERING A Westman Company Central 303-740-9888 • Colorado Springs 719-583-2583 Fort Collins 970-491-9888 • www.jrengineering.com
DATE	
NO. REVISION	
H-SCALE	1"=10'
V-SCALE	1"=1'
DATE	05/15/24
DESIGNED BY	GAG
DRAWN BY	GAG
CHECKED BY	
ESTATES AT CATHEDRAL PINES	
POND PLANS AND DETAILS	
SHEET	11 OF 16
JOB NO.	25260.00



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

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A Westman Company
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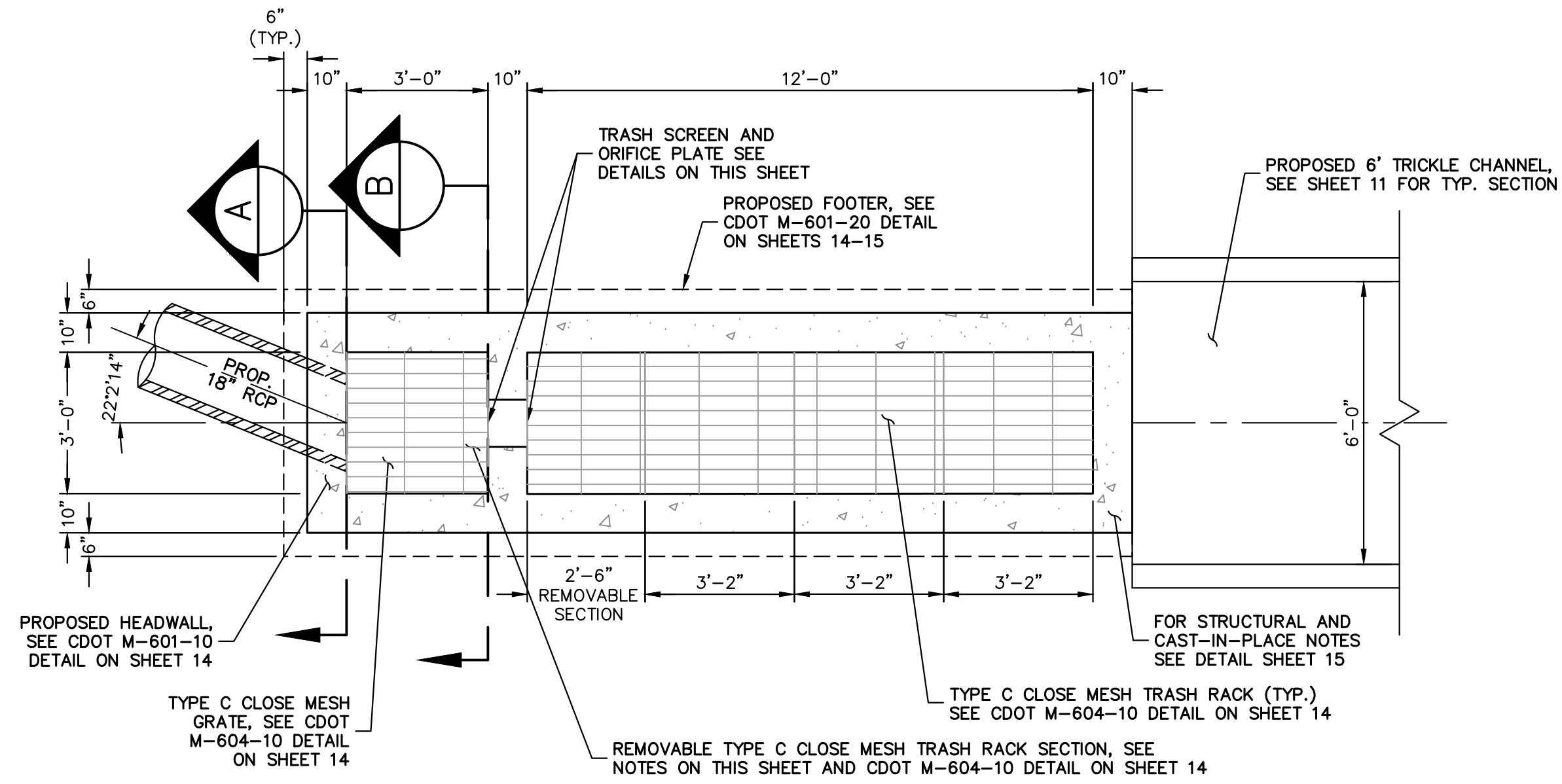
BY	DATE	REVISION

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

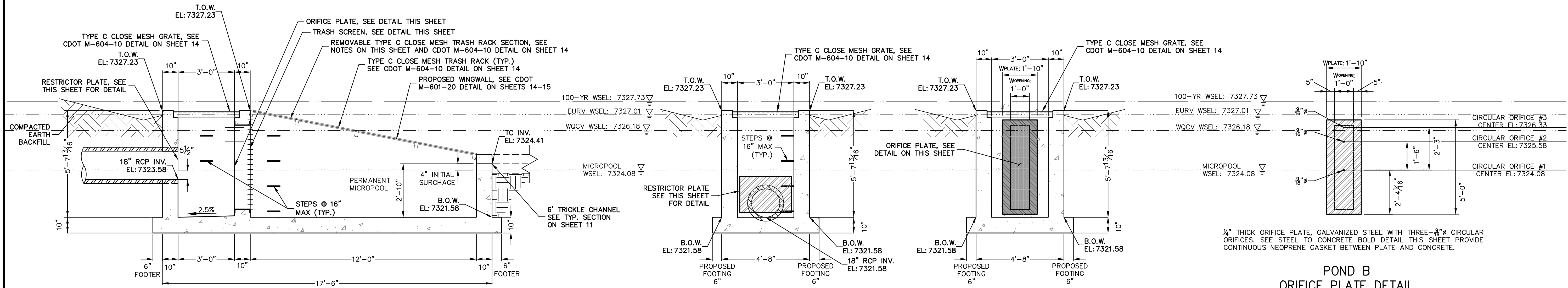
ESTATES AT CATHEDRAL PINES
POND PLANS AND DETAILS
SHEET 12 OF 16
JOB NO. 25260.00



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
DATE 5/31/24



**POND B OUTLET
STRUCTURE PLAN**
SCALE: 3/8"=1'

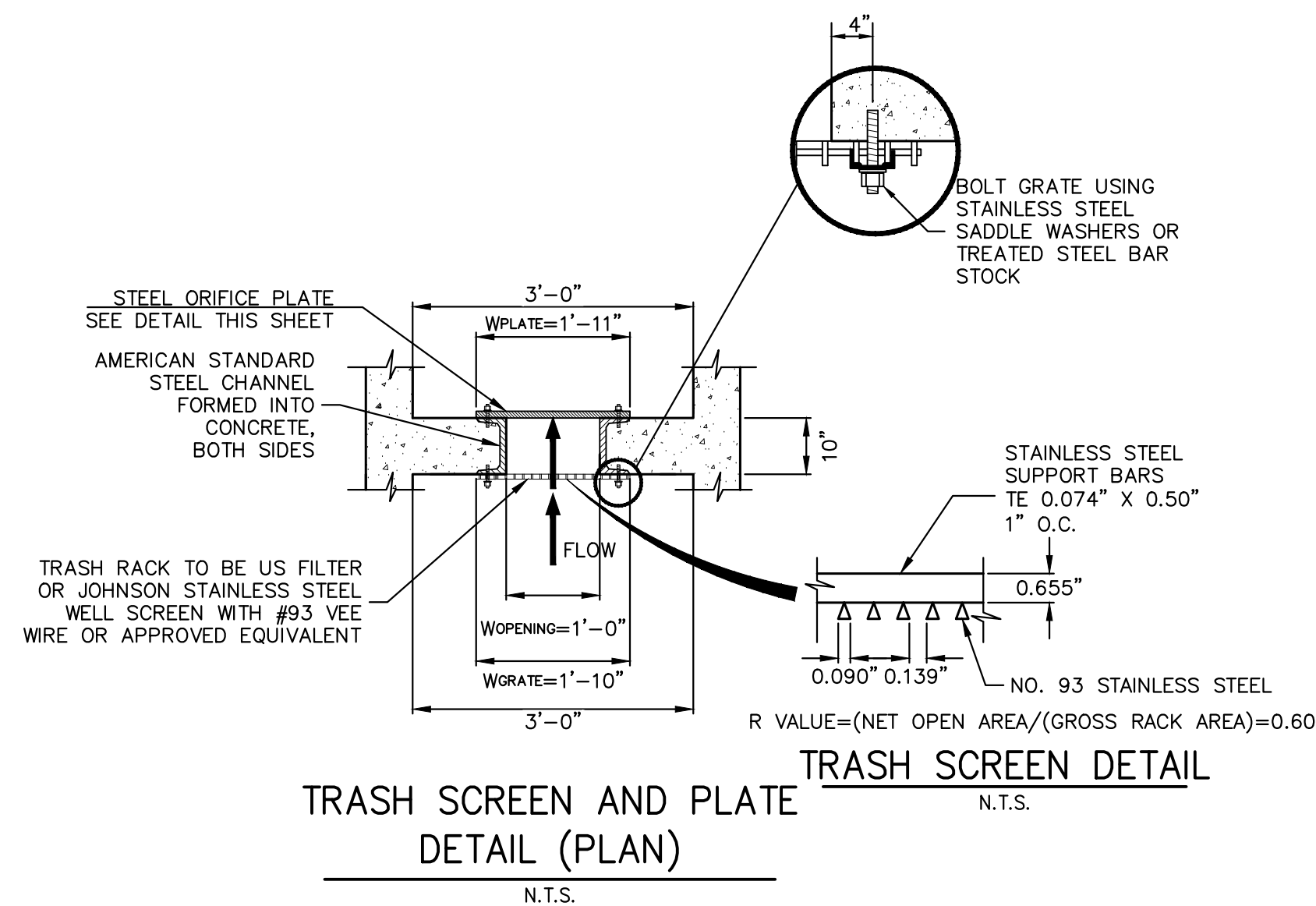


**POND B OUTLET
STRUCTURE PROFILE**
SCALE: 3/8"=1'

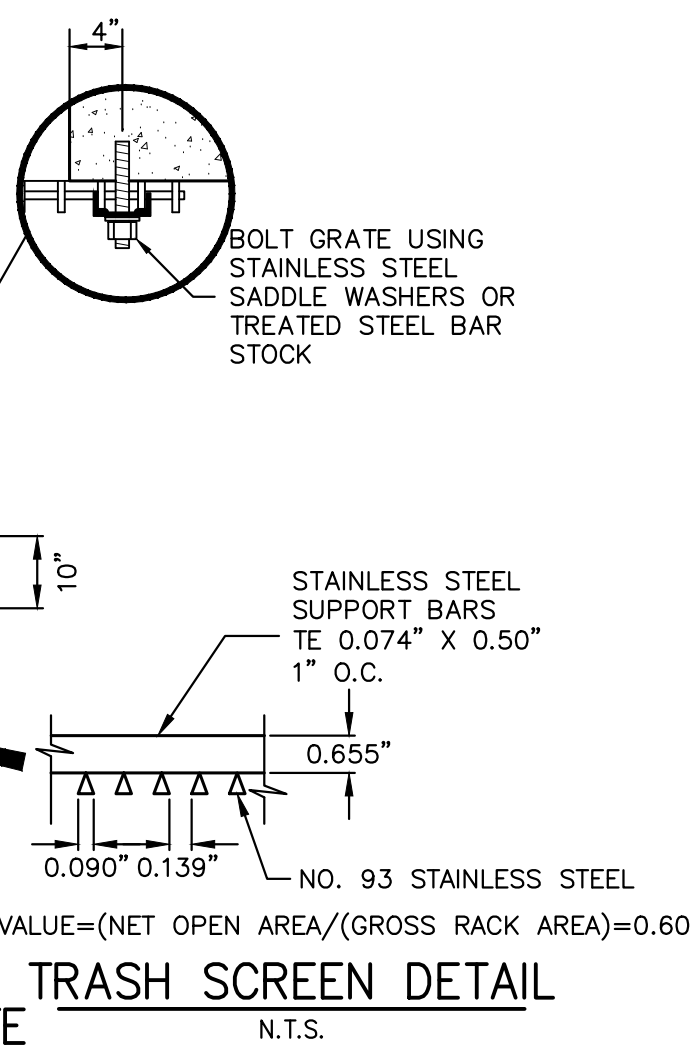
A-A SECTION
SCALE: 3/8"=1'

B-B SECTION
SCALE: 3/8"=1'

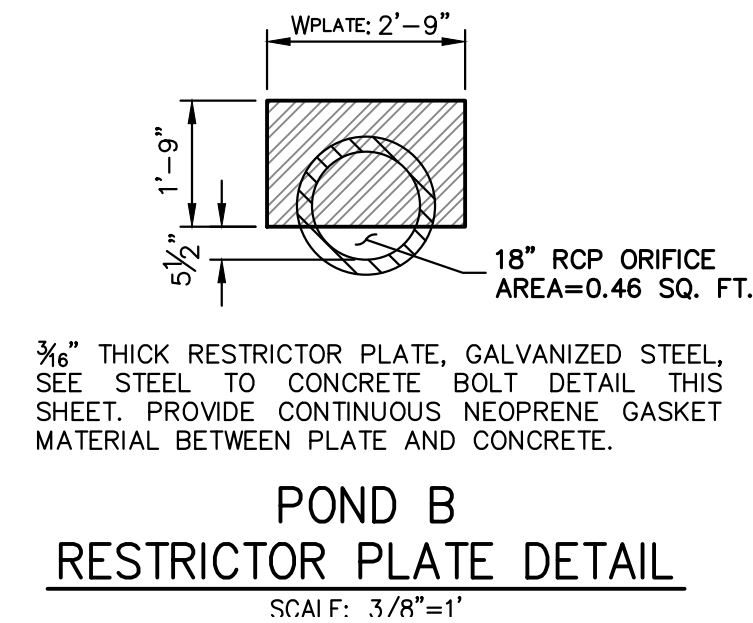
**POND B
ORIFICE PLATE DETAIL**
SCALE: 3/8"=1'



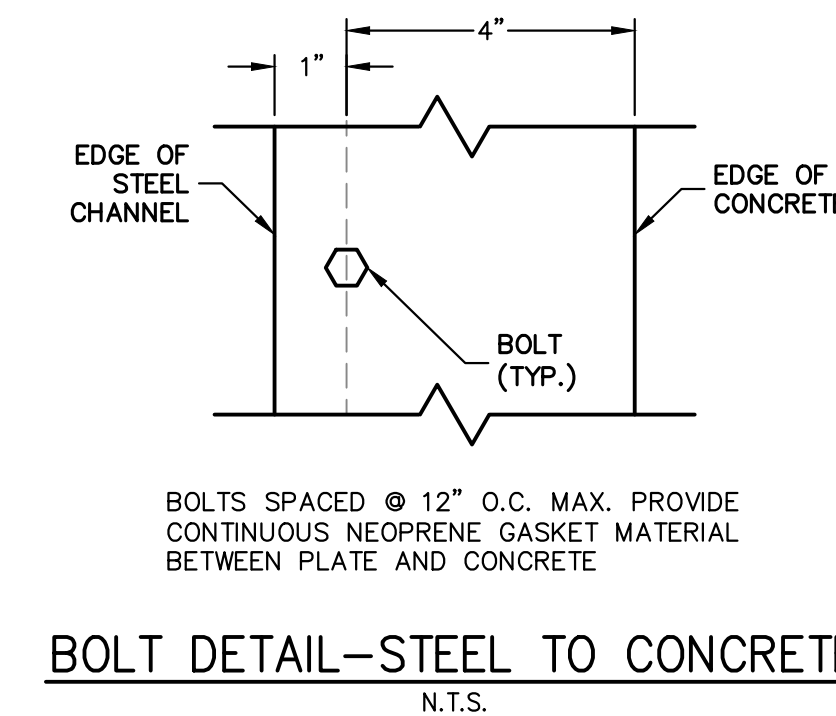
**TRASH SCREEN AND PLATE
DETAIL (PLAN)**
N.T.S.



TRASH SCREEN DETAIL
N.T.S.



**POND B
RESTRICTOR PLATE DETAIL**
SCALE: 3/8"=1'



BOLT DETAIL-STEEL TO CONCRETE
N.T.S.

OUTLET STRUCTURE PLATE AND GRADING NOTES:

- 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 1 1/2" SCH.40 STEEL PIPE, GALVANIZED, @ 6" CENTERS. SUPPORT BARS SHALL BE 1/2"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 CDOT 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. CONTRACTOR'S USE OF THESE DRAWINGS IS 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
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No.	REVISION	BY	DATE

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

ESTATES AT CATHEDRAL PINES
POND PLANS AND DETAILS

SHEET 13 OF 16
JOB NO. 25260.00



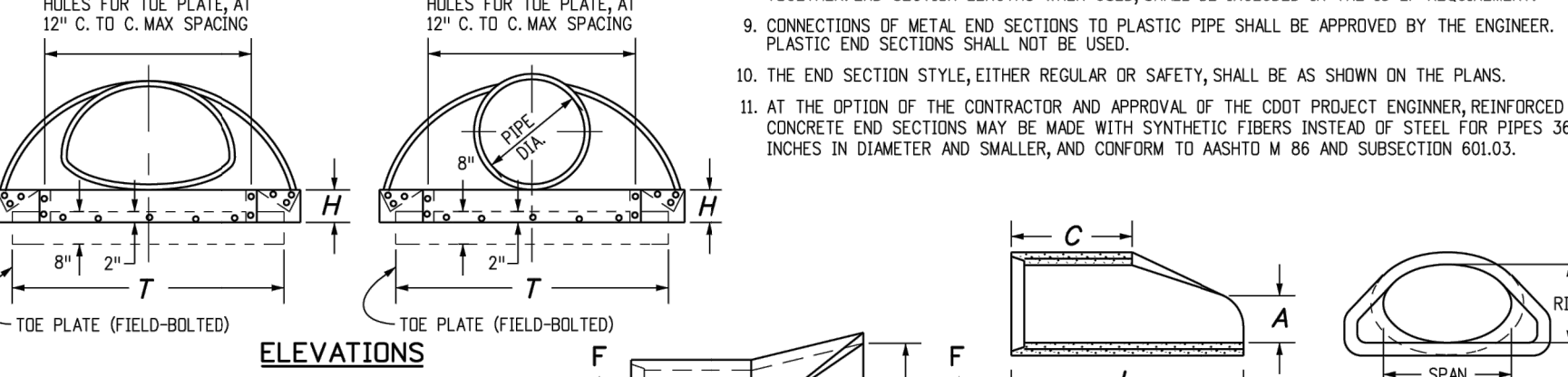
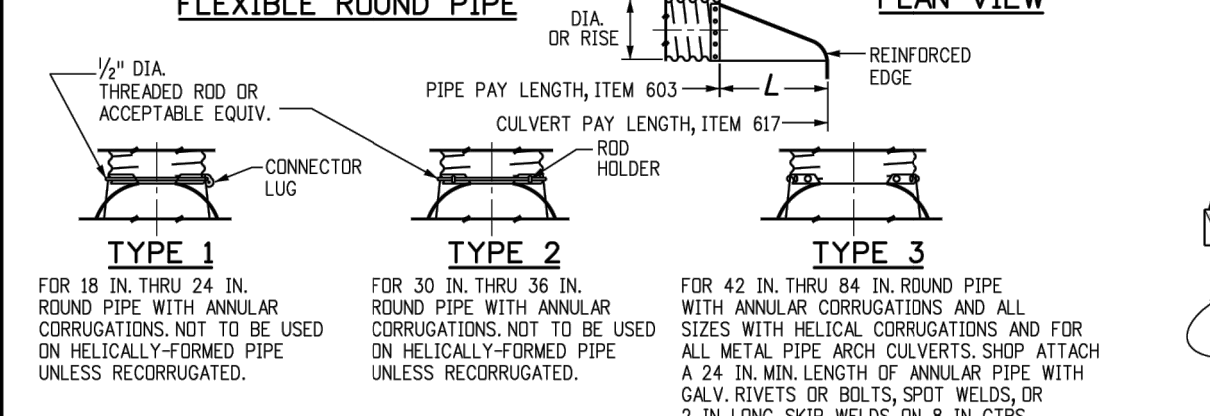
ENGINEER'S STATEMENT
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Bryan T. Law
BRYAN T. LAW, P.E.
COLORADO P.E. 25043
FOR AND ON BEHALF OF JR ENGINEERING
DATE 5/31/24

FLEXIBLE ROUND PIPE

PIPE DIA.	THICKNESS	DIMENSIONS			
		A	B	H	L
12	0.064	6	6	21	24
18	0.064	8	10	31	36
24	0.064	10	13	41	48
30	0.079	12	16	51	60
36	0.079	14	19	60	72
42	0.109	16	22	69	84
48	0.109	18	27	78	96
54	0.109	20	30	84	102
60	0.109	24	36	102	120
66	0.109	27	42	117	138
72	0.109	30	48	132	156
78	0.109	36	54	156	180
84	0.109	42	63	180	216

FLEXIBLE PIPE ARCH

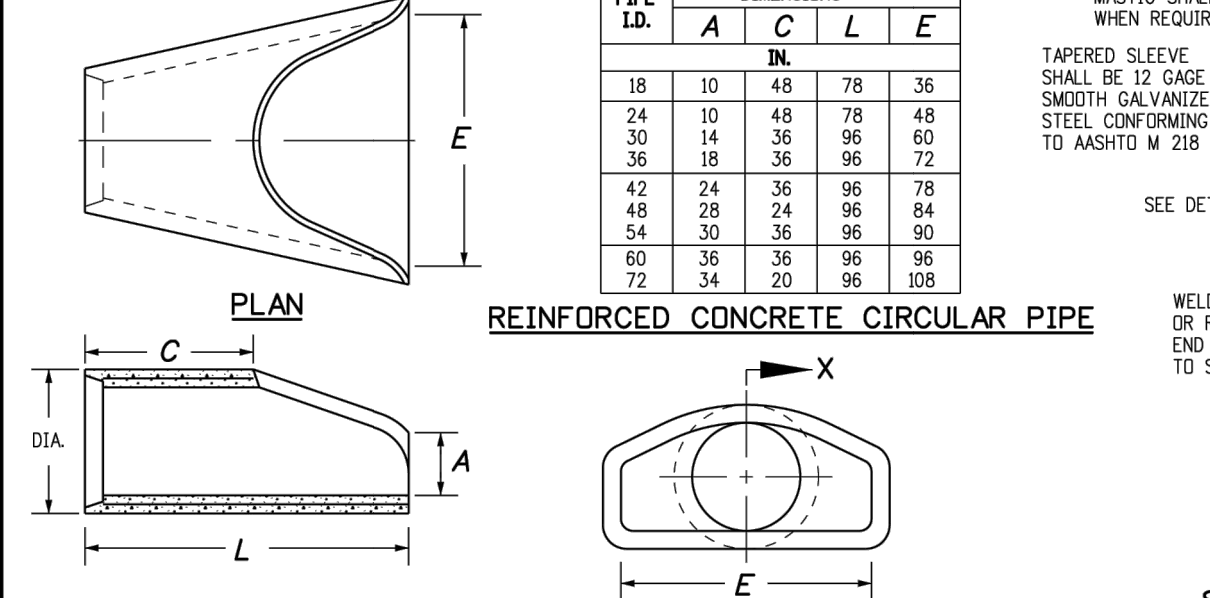
SPAN x RISE	THICKNESS	DIMENSIONS			
		A	B	H	L
21 x 15	0.064	7	10	6	23
24 x 18	0.064	8	12	6	28
28 x 20	0.064	9	14	6	32
32 x 24	0.064	10	16	6	38
36 x 27	0.079	12	18	6	46
42 x 33	0.109	13	21	9	53
48 x 36	0.109	18	24	6	60
54 x 43	0.109	18	30	12	70
60 x 47	0.109	18	33	12	77



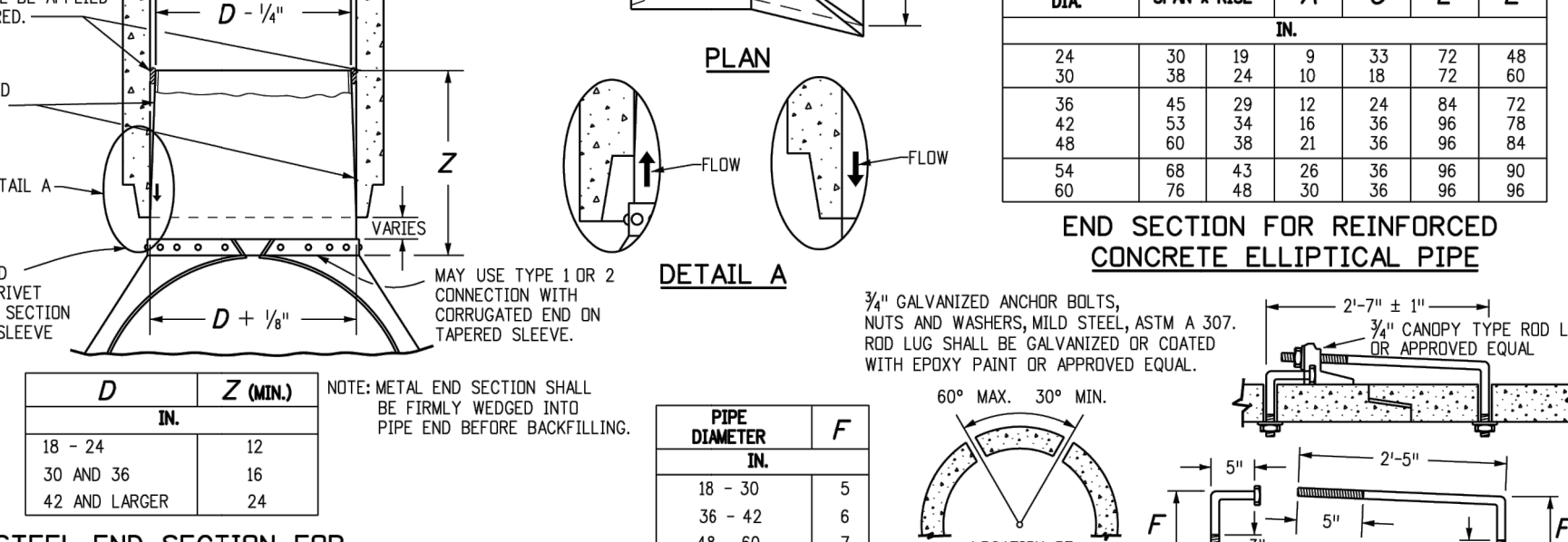
TYPICAL CONNECTIONS

- TYPE 1: FOR 18 IN. THRU 30 IN. ROUND PIPE WITH ANNUAL CORROSIONS NOT TO BE USED ON HELICALLY FORMED PIPE UNLESS RECORRUATED.
- TYPE 2: FOR 18 IN. THRU 30 IN. ROUND PIPE WITH ANNUAL CORROSIONS NOT TO BE USED ON HELICALLY FORMED PIPE UNLESS RECORRUATED.
- TYPE 3: FOR 42 IN. THRU 84 IN. ROUND PIPE WITH ANNUAL CORROSIONS AND ALL SIZES WITH HELICAL CORRUGATIONS AND FOR ALL METAL PIPE ARCH CULVERTS. SHOP ATTACH A 24 IN. MIN. LENGTH OF ANNULAR PIPE WITH GALV. RIVETS OR BOLTS, SPOT WELDS, OR 2 IN. LONG STIP WELDS ON 8 IN. CRTS. REPAIR BURST GALVANIZING IN ACCORDANCE WITH SUBSECTION 707.05.

END SECTION AND CONNECTION DETAILS FOR ROUND AND ARCH METAL PIPES



END SECTION FOR REINFORCED CONCRETE CIRCULAR PIPE



Computer File Information

Creation Date: 07/31/19
Designer Initials: JBK
Last Modification Date: 07/31/19
Detailer Initials: LTA
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

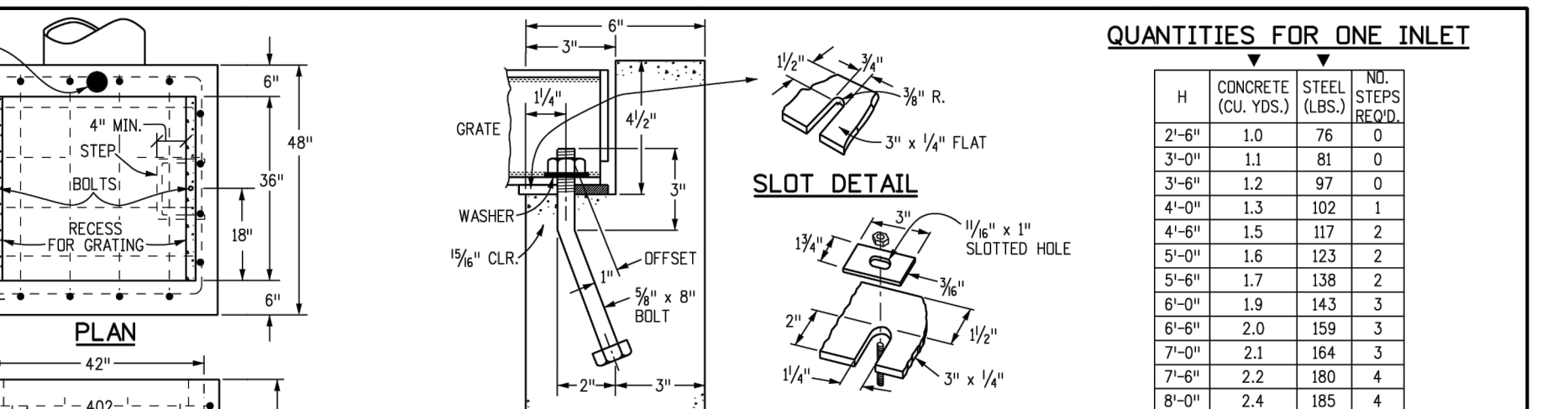
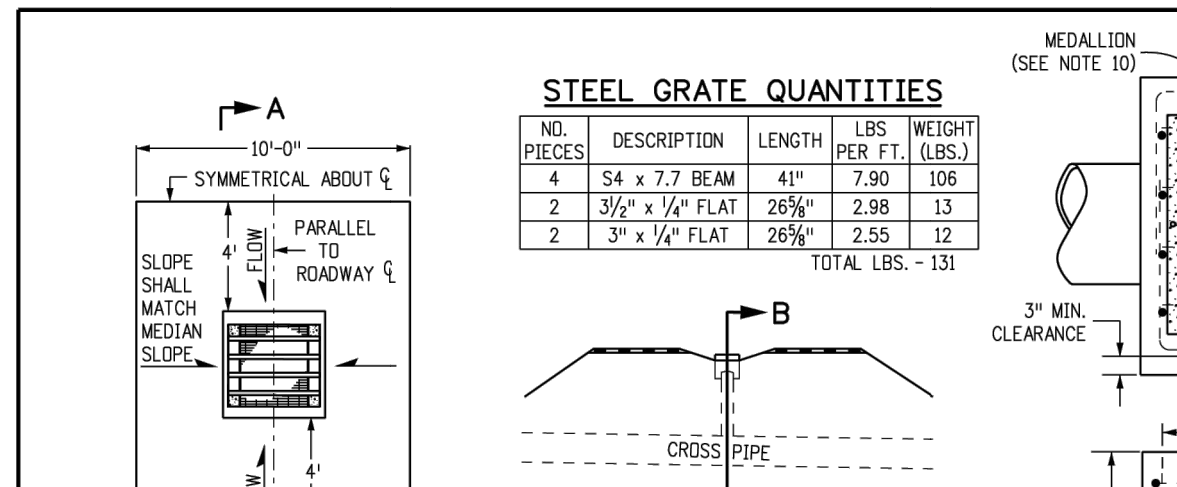
Sheet Revisions

Date:	Comments:

Colorado Department of Transportation
2829 West Howard Place
CDOT Hq, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

CONCRETE AND METAL END SECTIONS

STANDARD PLAN NO.	Project Sheet Number:
M-603-10	M-604-10

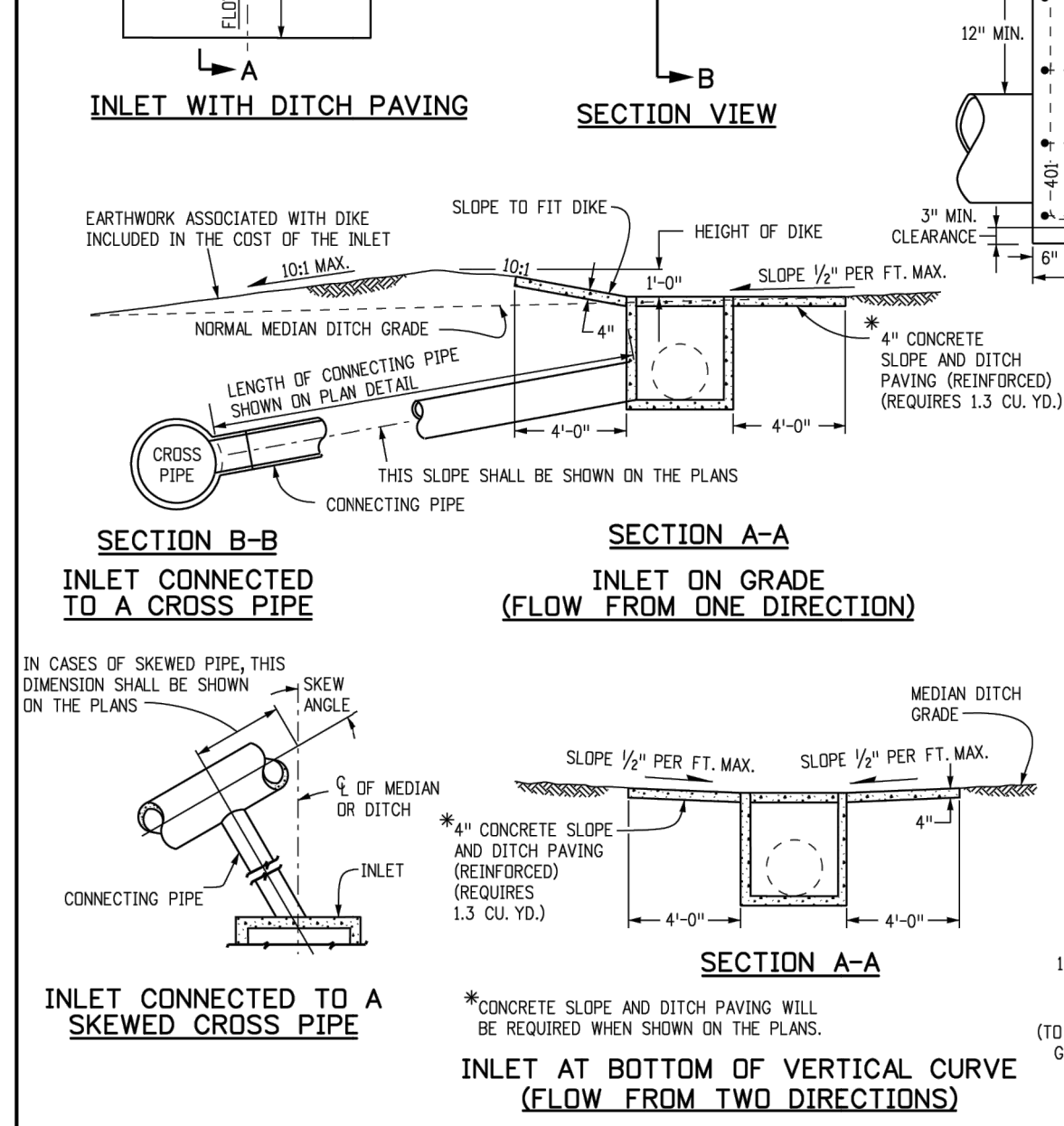


QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NUTS (LBS.)	STEPS (REQD.)
2'-0"	1.0	76	0	0
3'-0"	1.1	81	0	0
3'-6"	1.2	87	0	0
4'-0"	1.3	102	1	1
4'-6"	1.5	117	2	2
5'-0"	1.6	123	2	2
5'-6"	1.7	138	2	2
6'-0"	1.9	143	3	3
6'-6"	2.0	159	3	3
7'-0"	2.1	164	3	3
7'-6"	2.2	180	4	4
8'-0"	2.4	185	4	4
8'-6"	2.5	200	4	4
9'-0"	2.6	206	5	5
9'-6"	2.8	221	5	5
10'-0"	2.9	236	6	6
11'-0"	3.3	252	6	6

GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B INLET AND BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE GRADE 60, EPOXY COATED, AND DEFORMED #4 AND SHALL HAVE A MIN 2 INCH CLEARANCE OUT OR BEND AROUND PIPE AS REQUIRED.
- CONCRETE SLOPE AND DITCH PAVERS SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCING FOR CONCRETE SLOPE PAVERS SHALL BE 6 X 6 - W4.4 X W4.4 OR 6 X 6 - W2.3 X W2.3.
- STANDARD STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH INLET GRATES ARE SPECIFIED ON THE PLANS.
- CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET - 6 INCHES AND SHALL CONFORM TO ASHTO M 159.
- SEE STANDARD PLAN M-604-10 FOR REINFORCEMENT AROUND THE PIPE OPENING.
- ALL INLETS SHALL HAVE A 4 INCH DIAMETAL MEDALLION WITH A NO DUMPING DRAINS TO STREAM MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.



BAR LIST FOR H = 2 FT. - 6 IN. AND BENDING DIAGRAM

MARK	NO.	HEIGHT	LENGTH
401	2	2'-2 1/2"	8'-0"
402	1	2'-7"	8'-0"
402	4	1/4"	15'-4"

NO. 401
NO. 402

Computer File Information

Creation Date: 07/31/19
Designer Initials: JBK
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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

Sheet Revisions

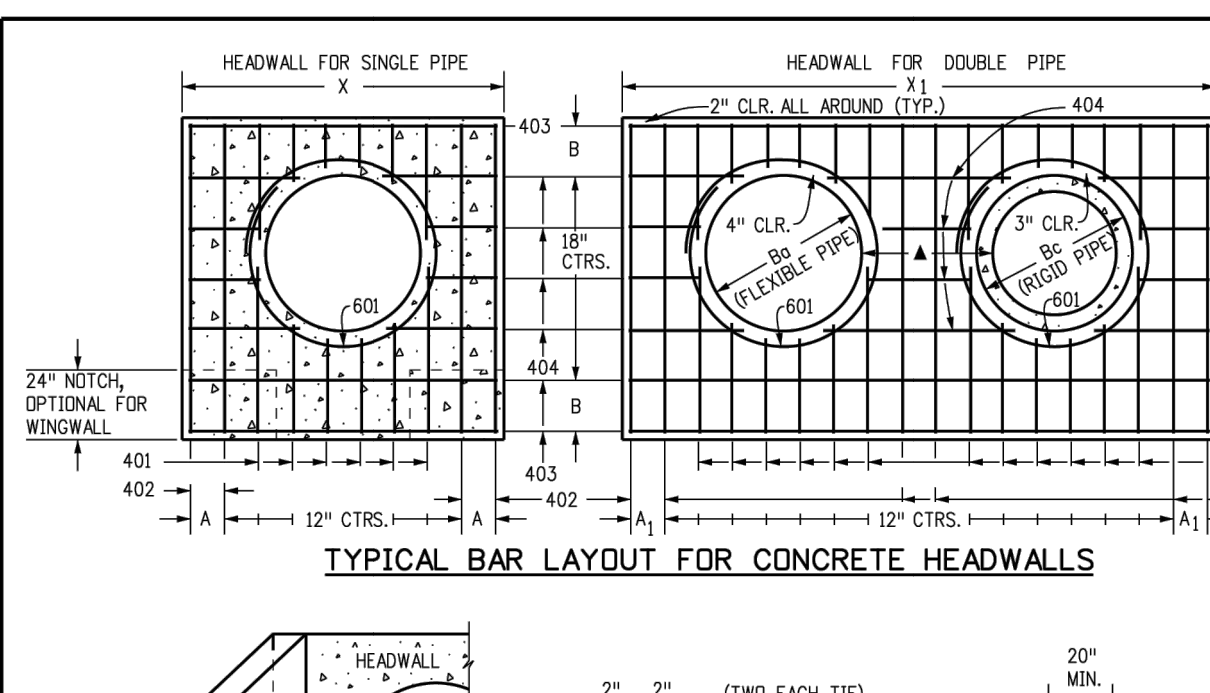
Date:	Comments:

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INLET, TYPE C

STANDARD PLAN NO.	Project Sheet Number:
M-604-10	M-603-10

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Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868



GENERAL NOTES

- CONCRETE SHALL BE CLASS B.
- HEADWALL SHALL BE PERPENDICULAR TO THE PIPE & UNLESS OTHERWISE SHOWN ON THE PLANS, TABULATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATION.
- FOR WINDOW WALL DETAILS, SEE STANDARD PLAN M-601-20.
- VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4" IN.
- ALL REINFORCING BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
- WHEN TWO OR MORE PIPES ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE 1/2" INSIDE DIAMETER APART, OR 1/4" INSIDE SPAN, OR 3 FT. APART (INCLUDING WALL THICKNESS), WHICHEVER IS LESS.
- ADD 0.89 X (X OR Y) (LBS.) WHEN APRON IS REQUIRED.

HEADWALL FOR RIGID ROUND PIPE

EQV. CONCRETE	STEEL
54 65	8-9
60 72	9-6
66 79	10-3
72 86	11-0
78 93	11-9
84 100	12-6
90 107	13-3
96 114	14-0
102 121	14-9
108 128	15-6

HEADWALL FOR FLEXIBLE PIPE ARCH

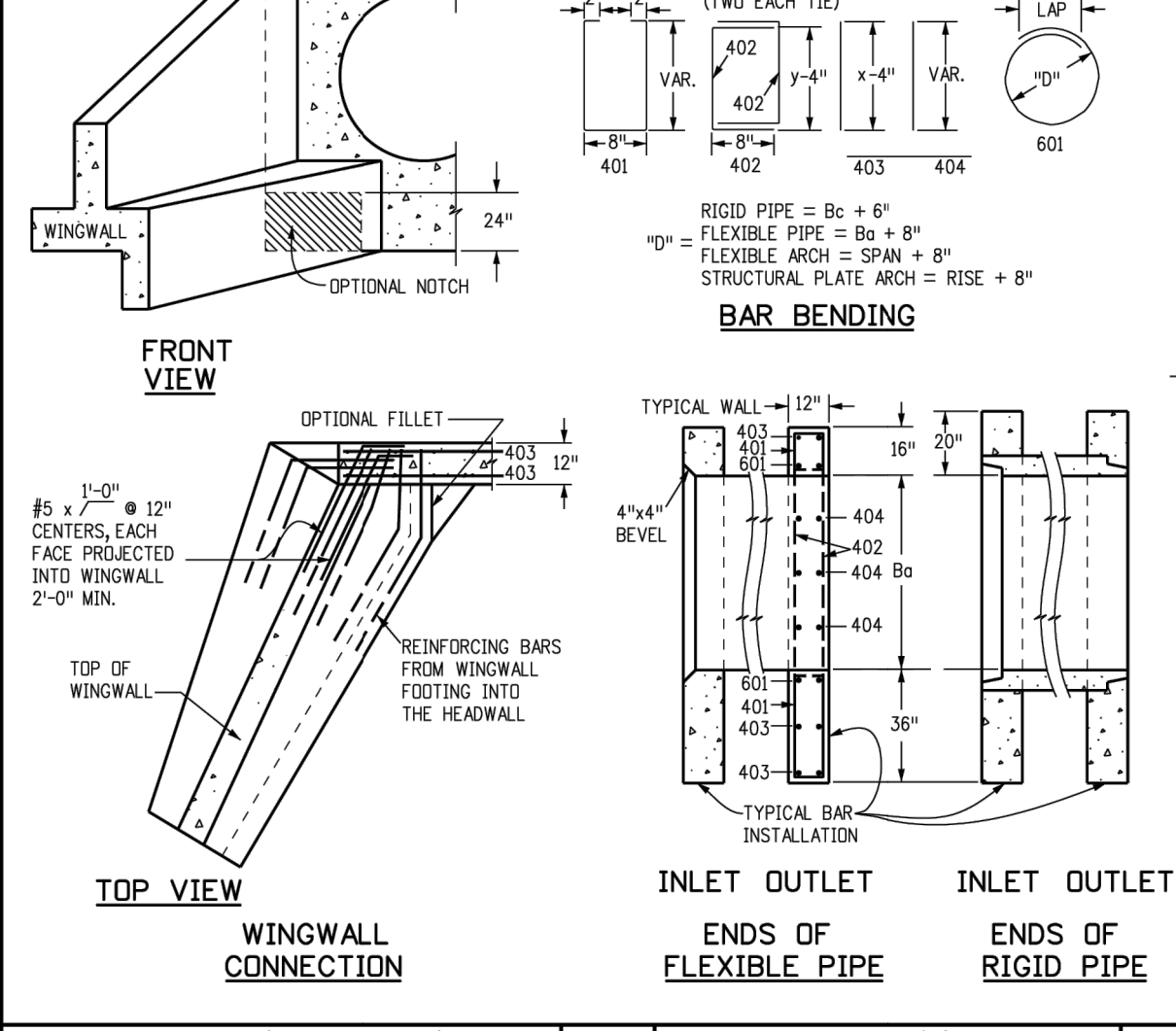
EQV. CONCRETE	STEEL
72 81	5-8
78 87	6-3
84 95	6-7
90 103	7-1
96 112	7-5
102 117	8-1
108 128	8-3

HEADWALL FOR FLEXIBLE ROUND PIPE

EQV. CONCRETE	STEEL
54 68	8-8
60 76	9-10
66 84	10-12
72 92	11-14
78 100	11-16
84 108	12-18
90 116	13-20
96 124	14-22
102 132	15-24
108 140	16-26

HEADWALL FOR STRUCTURAL PIPE ARCH

EQV. CONCRETE	STEEL
66 6-1	4-7
75 7-0	5-1
84 8-0	6-1
93 9-0	7-1
102 10-0	8-1
111 11-0	9-1
120 12-0	10-1
129 13-0	11-1
138 14-0	12-1
147 15-0	13-1



SKAW FACTOR TABLE

SKAW ANGLE (°)	90	85	80	75	70	65	60	55	50	45	40	35	30
FACTOR	1.000	1.004	1.015	1.035	1.064	1.103	1.155	1.221	1.305	1.414	1.556	1.743	2.000

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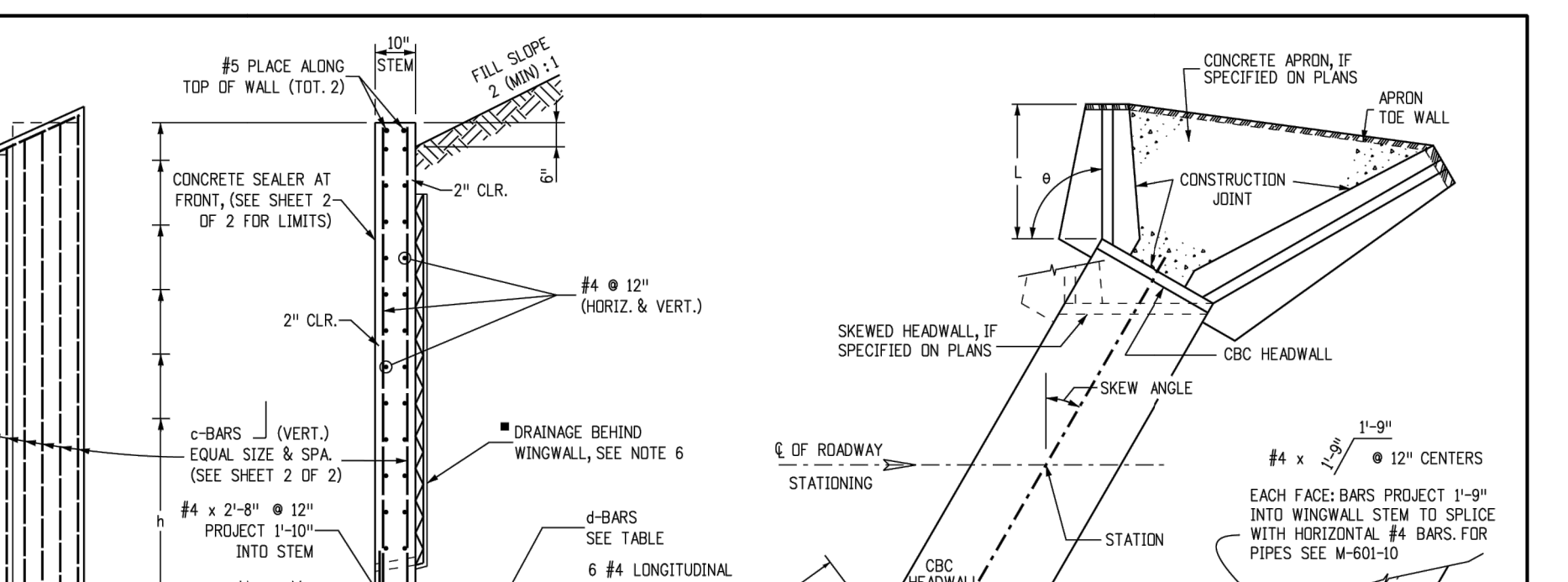
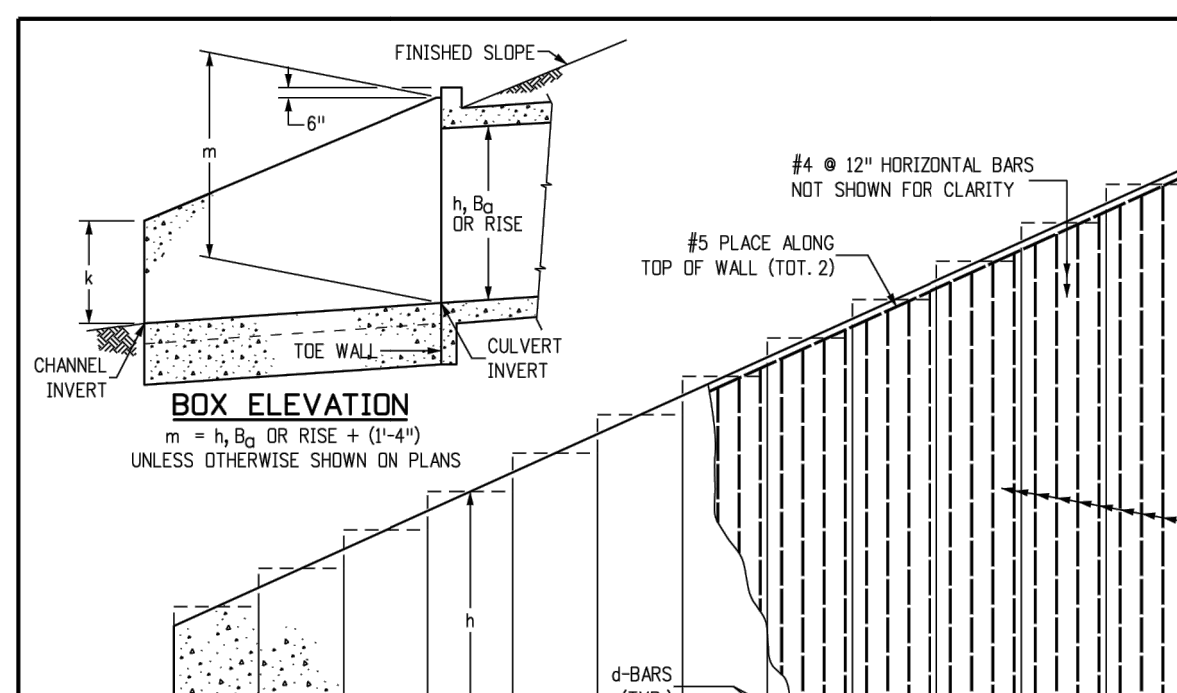
Sheet Revisions

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Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

HEADWALL FOR PIPES

STANDARD PLAN NO.	Project Sheet Number:
M-601-10	M-602-10



DESIGN DATA:
ASHTO LRFD EIGHTH EDITION, 2017
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN, YIELD LINE METHOD

REINFORCED CONCRETE:
CONCRETE CLASS: B (BOX CULVERT); F_c = 4,500 PSI
REINFORCING STEEL:
F_y = 60,000 PSI

LOADING:
ACT-RST EARTH (FLUID) PRESSURE FOR CONCRETE STEM DESIGN = 55 PCF FOR 2 (MIN.) 1' SLOPED BACKFILL
LIVE LOAD SURCHARGE = 2' MINIMUM RESISTANCE FOR SOIL BEARING = 5.5 KSF
SOIL BEARING RESISTANCE FACTOR = 0.45

GENERAL NOTES:

- ALL CORNER CONCRETE CORNERS SHALL BE CHAMFERED 3/4" IN.
- WINDOW WALL AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
- DIMENSIONS "h", "k", "l", "m" AND ANGLE "θ" FOR WINDOW WALL SHALL BE AS SHOWN ON THE PLANS.
- MINIMUM CLASS B LAP SPICE LENGTH FOR BLACK REINFORCING BARS:
#4: 3'-0"
#5: 3'-6"
#6: 4'-0"
#7: 4'-6"
#8: 5'-0"
#9: 5'-6"
#10: 6'-0"
#11: 6'-6"
#12: 7'-0"
#13: 7'-6"
#14: 8'-0"
- SPICE LENGTH: 1'-6" #5; 1'-11" #6; 2'-3" #7
- DESIGN DOES NOT CONSIDER ANY SCOUR EFFECTS.
- WINDOW WALL SHALL BE REQUIRED IF "h" > 12'-0" FT., SEE SHEET 2 OF 2 FOR DETAILS.

QUANTITIES FOR TOE WALL ONLY
CONCRETE 0.049 CU. YD./LN. FT.
REINFORCEMENT 5.1 LB./LN. FT.

APRON TOE WALL

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Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

WINGWALLS FOR PIPE OR BOX CULVERTS

STANDARD PLAN NO.	Project Sheet Number:
M-602-10	M-601-10

Colorado Department of Transportation
2829 West Howard Place
CDOT Hq, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868

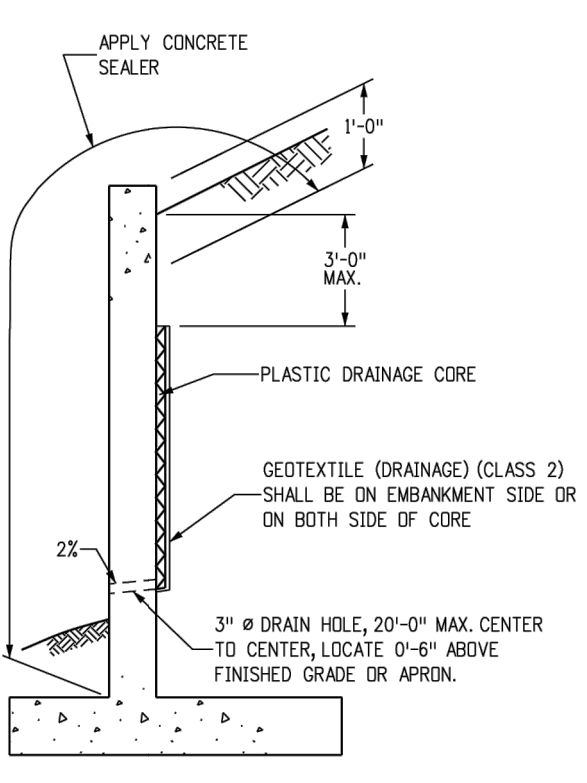
811
Know what's below. Call before you dig.

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

c-BARS AND REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)		* REINFORCING STEEL QUANTITY INCLUDES STEM AND FOOTING QUANTITIES, BUT DOES NOT INCLUDE TOE WALL QUANTITIES.													
m (FT)	k (FT)	≤ (1.0 x m)		≤ (1.25 x m)		≤ (1.5 x m)		≤ (2.0 x m)		≤ (2.25 x m)		≤ (3.0 x m)		≤ (3.5 x m)	
		* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)	* REINFORCING STEEL QUANTITY (LB./L.F.)
4	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
5	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
6	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
7	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
8	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
9	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
10	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
11	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
12	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
13	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
14	4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4

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.



CAST-IN-PLACE STRUCTURAL NOTES:

- ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.
- ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE APPROVED BY THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
- DO NOT BACKFILL UNTIL CONCRETE HAS REACHED DESIGN STRENGTH, F_c.
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- CONTRACTOR SHALL SUBMIT STEEL REINFORCING SHOP DRAWINGS FOR ALL CAST-IN-PLACE STRUCTURES FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
- HEADWALLS FOR PIPES SHALL BE CONSTRUCTED PER CDDOT M-601-10.
- WINGWALLS SHALL BE CONSTRUCTED PER CDDOT M-601-20.

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Sheet Revisions	
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(RCD)	
(RCD)	

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Project Development Branch JBK

WINGWALLS FOR PIPE OR BOX CULVERTS

STANDARD PLAN NO.	
M-601-20	
Standard Sheet No. 2 of 2	
Project Sheet Number:	

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

PREPARED FOR
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A Westman Company
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GENERAL STRUCTURE NOTES:

ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OR COUNTY STANDARD CONSTRUCTION SPECIFICATIONS. EXCEPT AS SHOWN IN THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH CDDOT M-206-1, AND M-206-2 EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO A 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OF OTHER.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND PROVIDING ALL BRACING AND SHORING AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE EXCAVATION PROCEDURES INCLUDING ANY SHORING REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL METHODS AND MEANS OF CONSTRUCTION AS WELL AS ALL JOB SITE SAFETY & HEALTH PRECAUTIONS.

ALL SOILS WORK INCLUDING (BUT NOT LIMITED TO) PIER DRILLING AND CONSTRUCTION, SOILS EXCAVATION, FILL PLACEMENT, AND STRUCTURE BACKFILL SHALL BE IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT, UNLESS MORE STRINGENT REQUIREMENTS ARE PRINTED ON THE "IRRIGATION NOTES".

BACKFILL SHALL NOT BEGIN UNTIL CONCRETE WALLS REACH COMPRESSION STRENGTH AT LEAST 80 PERCENT OF THE REQUIRED 28 DAY STRENGTH, 0.8f_c'.

REINFORCED CONCRETE:
CLASS D CONCRETE: f_c'=4,500 psi
REINFORCING STEEL: f_y=60,000 psi
ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS D UNLESS NOTED OTHERWISE.

REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 U.N.O.
REINFORCING BARS TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.
ALL REINFORCING, EXCEPT PIER REINFORCING, SHALL BE EPOXY COATED AND SHALL CONFORM TO ASTM A775.
ALL REINFORCING SHALL HAVE 2" CONCRETE COVER, U.N.O. ON PLANS, 3" AGAINST GROUND (BOTTOM SLAB)
ALL REINFORCING SHALL BE HOOKED AROUND CORNERS AND LAPPED, SEE DETAILS.
ALL LAP SPLICE LOCATIONS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

THE FOLLOWING TABLE GIVES THE MINIMUM CLASS B (STAGGERED) LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACE IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER. INCREASED BY 40% FOR HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE BELOW (TOP BARS.), AND INCREASED BY 75% IF BOTH CONDITIONS EXIST. THE INCREASES ABOVE FOR #6 THRU #11 BARS MAY BE 25%, 13%, AND 42% RESPECTIVELY.

#	1"-3"	#5	1'-10"
#4	2'-5"	#7	2'-10"
#6	3'-8"	#9	4'-8"
#10	5'-11"	#11	7'-3"

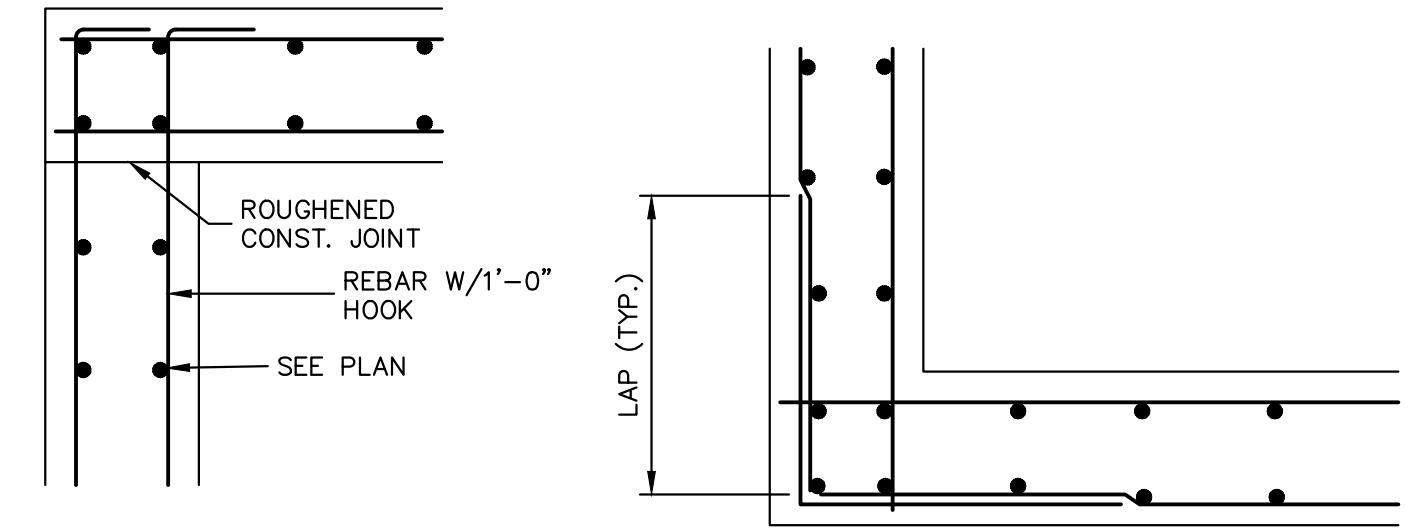
WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS. THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

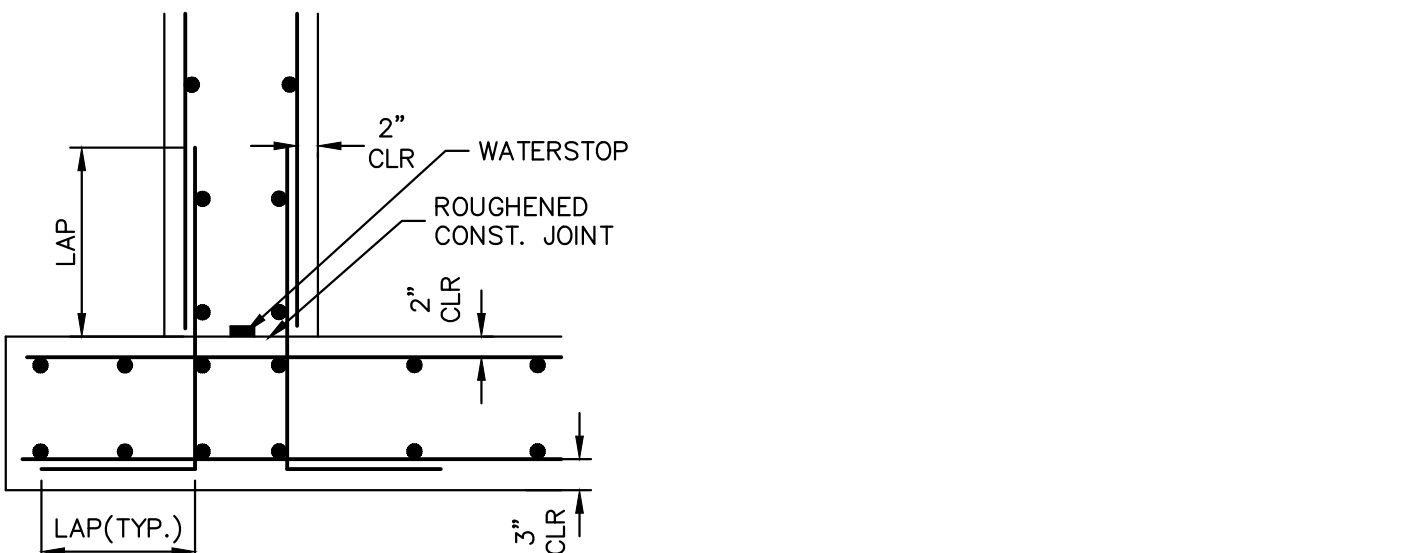
THE CONTRACTOR SHALL SUBMIT REINFORCING STEEL PLACING DRAWINGS (PRIOR TO CONSTRUCTION) TO THE ENGINEER FOR REVIEW FOR CONFORMANCE WITH THE DESIGN DRAWINGS. THE DESIGN DRAWINGS SHALL GOVERN OVER PLACING DRAWINGS IN ALL CASES UNLESS MODIFICATIONS ARE APPROVED IN WRITING BY ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

- E.F. = EACH FACE
- F.E. = FAR FACE
- N.F. = NEAR FACE
- I.F. = INSIDE FACE
- T.W. = TWO WAY
- E.S. = EACH SIDE
- O.F. = OUTSIDE FACE
- T.&B. = TOP AND BOTTOM
- T.F. = TOP FACE
- B.F. = BOTTOM FACE
- T.F. = TWO FACES
- Lp = LAP LENGTH



TYPICAL TOP CORNER WALL SECTION DETAIL
TYPICAL WALL CORNER PLAN VIEW



TYPICAL BOTTOM CORNER WALL SECTION DETAIL



ENGINEER'S STATEMENT
STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

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

5/31/24

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

