

# LAZY Y AND ROCKIN J SUBDIVISION

LOCATED IN THE SOUTH HALF OF SECTION 7  
TOWNSHIP 12 SOUTH, RANGE 63 WEST OF THE 6TH P.M.  
**STREET IMPROVEMENT PLANS**  
COUNTY OF EL PASO, STATE OF COLORADO



Know what's below.  
Call before you dig.

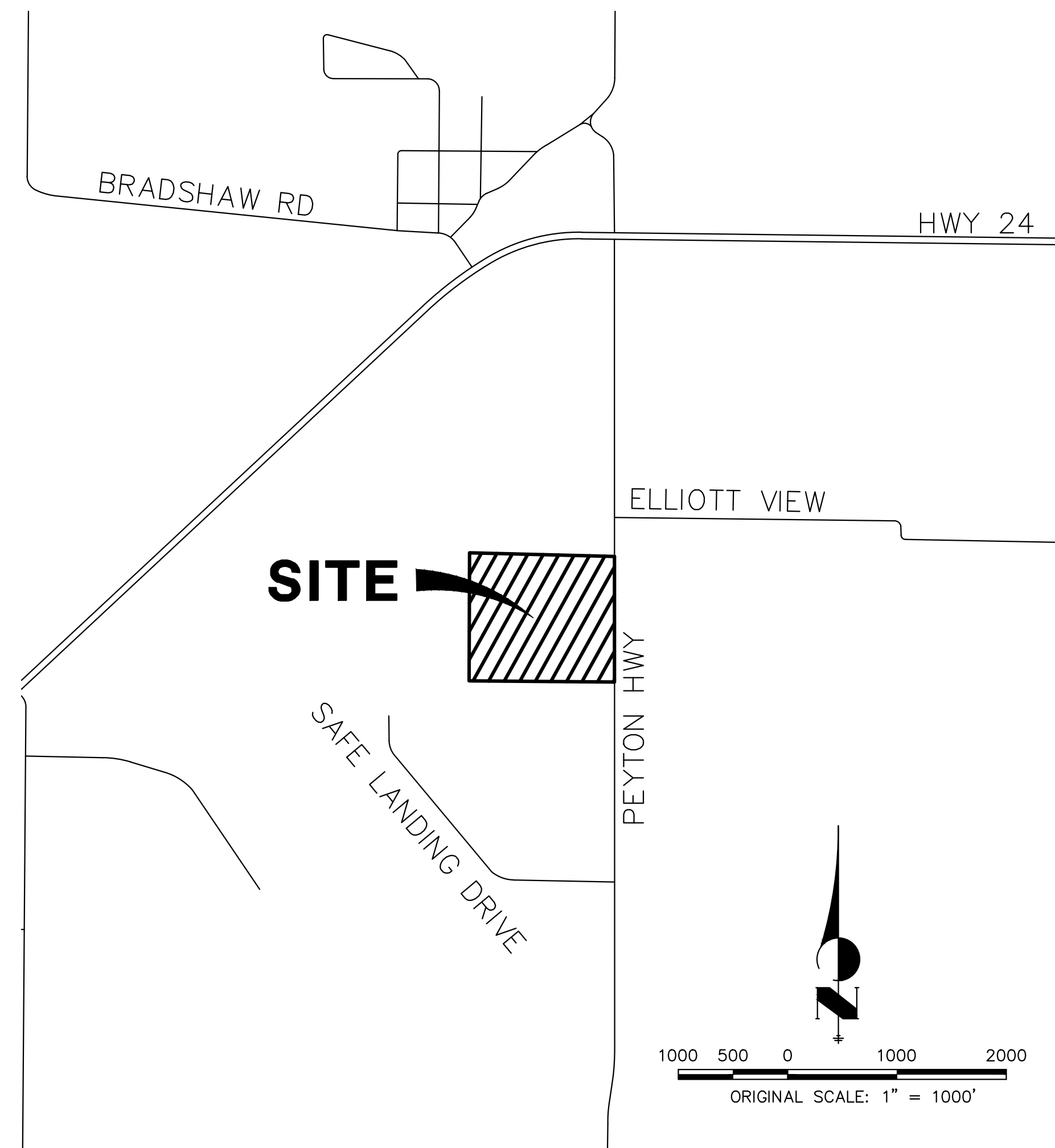
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
LYRJ  
1172 GREENLAND FOREST DRIVE  
MONUMENT, CO 80106  
SCOTT SMITH  
(719) 499-7764

**J.R. ENGINEERING**  
A Westman Company  
Central 303-740-9888 • Colorado Springs 719-583-2583  
Fort Collins 970-491-9888 • www.jrengineering.com

**BASIS OF BEARING:**

BASIS OF BEARINGS: THE EAST LINE OF SECTION 7, TOWNSHIP 12 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, BEING MONUMENTED AT THE SOUTH END BY A 3.25" ALUMINUM CAP STAMPED "LS 17496 1995" IN A RANGE BOX AND AT THE NORTH END BY A 3.25" ALUMINUM CAP STAMPED "CDOT LS 25381 2007" IN A RANGE BOX, BEARING S01°04'47"E AS REFERENCED TO COLORADO STATE PLANE CENTRAL ZONE.

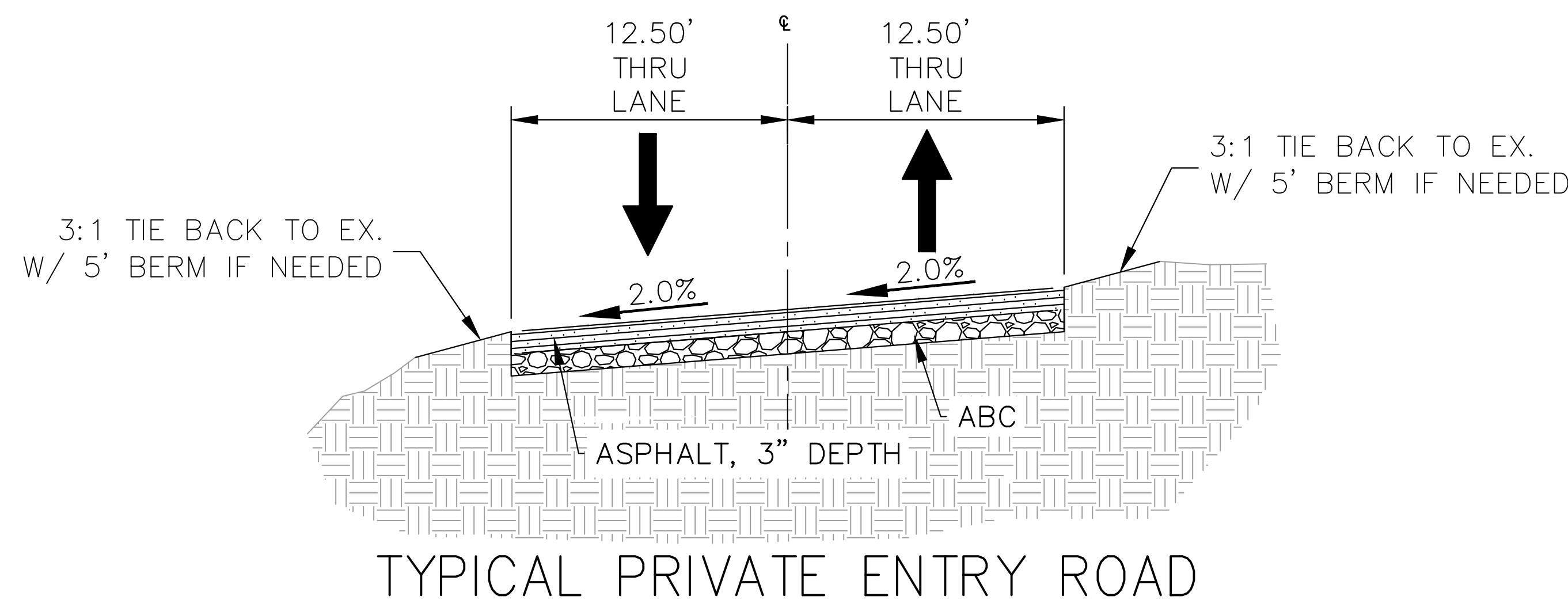
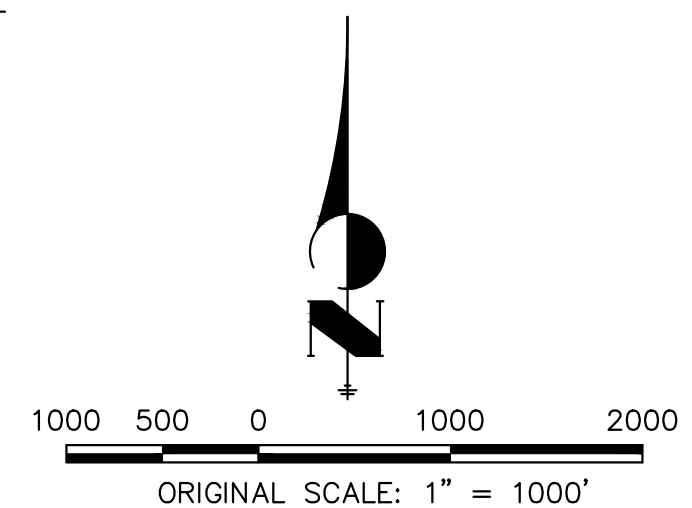


**AGENCIES**

<p><b>OWNER/DEVELOPER:</b> LYRJ 1172 GREENLAND FOREST DRIVE MONUMENT, CO 80106 SCOTT SMITH (719) 499-7764</p> <p><b>CIVIL ENGINEER:</b> JR ENGINEERING, LLC 5475 TECH CENTER DRIVE COLORADO SPRINGS, CO 80919 BRYAN LAW P.E. (303) 267-6254</p> <p><b>COUNTY ENGINEERING:</b> EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 CHARLENE DURHAM, P.E. (719) 520-7951</p> <p><b>TRAFFIC ENGINEERING:</b> EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JOSHUA PALMER, P.E. (719) 520-6460</p>	<p><b>FIRE DISTRICT:</b> BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300</p> <p><b>GAS DEPARTMENT:</b> BLACK HILLS ENERGY 7080 ALEGRE STREET FOUNTAIN, CO 80817 (719) 393-6625</p> <p><b>ELECTRIC DEPARTMENT:</b> MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80631 (719) 495-2283</p> <p><b>COMMUNICATIONS:</b> U.S. WEST COMMUNICATIONS (LOCATORS) (800) 922-1987</p>
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**SHEET INDEX:**

1	-	COVER SHEET
2	-	LEGEND AND GENERAL NOTES
3	-	STREET IMPROVEMENT PLAN
4	-	SIGNAGE AND STRIPING PLAN
4	-	TOTAL SHEETS



**TYPICAL PRIVATE ENTRY ROAD**

POSTED SPEED LIMIT = 15 MPH, DESIGN SPEED LIMIT = 15 MPH

SCALE: 1" = 5'

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER 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.

**OWNER/DEVELOPER STATEMENT**

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

SCOTT SMITH \_\_\_\_\_ DATE \_\_\_\_\_

LYRJ  
1172 GREENLAND FOREST DRIVE  
MONUMENT, CO 80106

**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.

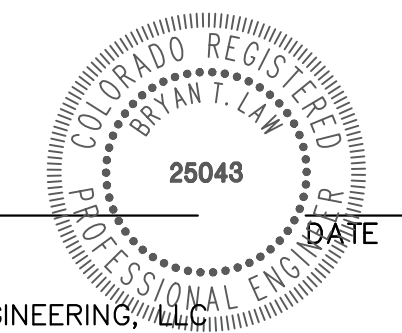
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JOSHUA PALMER, P.E. \_\_\_\_\_ DATE \_\_\_\_\_

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

BY	DATE								
No.	REVISION								
H-SCALE	1"=1000'	N/A							
V-SCALE			01/29/26	PAL	PAL				
DESIGNED BY									
DRAWN BY									
CHECKED BY									
LAZY Y AND ROCKIN J SUBDIVISION COVER SHEET									
SHEET 1 OF 4									
JOB NO. 25228.00									







# LAZY Y AND ROCKING J SUBDIVISION

LOCATED IN THE SOUTH HALF OF SECTION 7  
TOWNSHIP 12 SOUTH, RANGE 63 WEST OF THE 6TH P.M.  
**STORM SEWER AND POND PLANS**  
COUNTY OF EL PASO, STATE OF COLORADO



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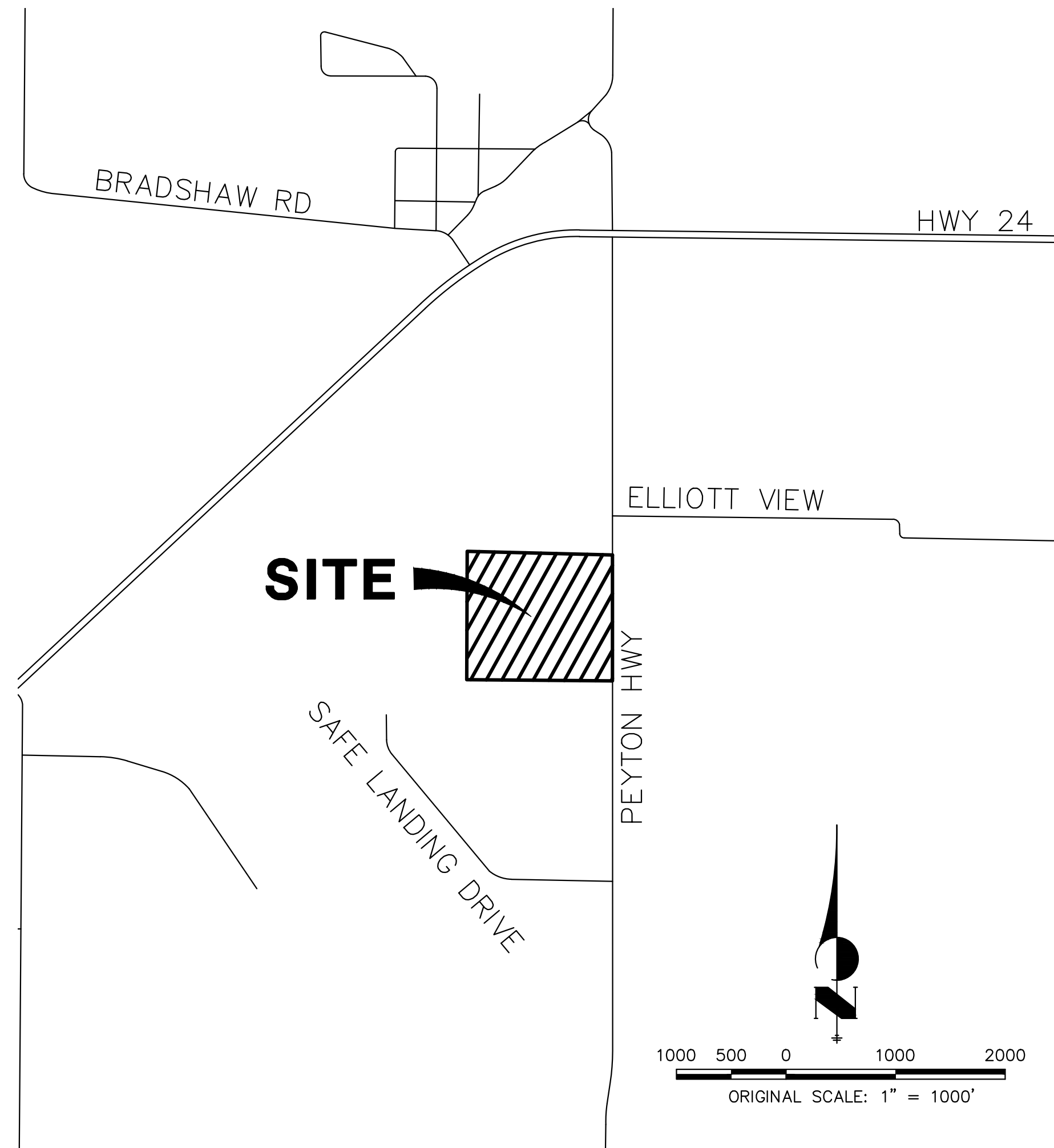
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**STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS**

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. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOIL AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - 3.1. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - 3.2. CITY OF COLORADO SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - 3.3. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND BRIDGE CONSTRUCTION
  - 3.4. CDOT M&S STANDARDS
4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT 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.
5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 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. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
9. 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.
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. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT TRIANGLES.
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. 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.

**BASIS OF BEARING:**

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9	-	POND A FOREBAY
10	-	POND A OUTLET
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14	-	POND B OUTLET
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16	-	TOTAL SHEETS

**STORM SEWER NOTES**

1. SEE SHEET 1 FOR BASIS OF BEARING. SEE SHEET 2 FOR LEGEND.
2. ALL STORM SEWER PIPES, INLETS, MANHOLES, AND APPURTENANCES WITHIN THE R.O.W. ARE PUBLIC. STORM FACILITIES OUTSIDE OF THE PUBLIC R.O.W. ARE PRIVATE, UNLESS OTHERWISE NOTED.
3. ALL STATIONING IS PIPE CENTERLINE UNLESS OTHERWISE NOTED.
4. ALL PROPOSED RCP STORM SEWER PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
5. PIPE LENGTHS ARE FROM INSIDE INLET WALL TO INSIDE INLET WALL, FROM CENTER OF MANHOLE TO INSIDE INLET OF WALL, OR FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE LENGTHS INCLUDE FES OR HEADWALL.
6. WHERE PIPES ENTER STRUCTURES, THE CENTERLINE STATION CALLED OUT ON THE PLANS IS TO THE CENTER OF STRUCTURE. WHERE PIPES ENTER STRUCTURES ON A SKEW, CONTRACTOR IS REQUIRED TO EXTEND PIPE TO ENSURE THAT BOTH EDGES OF THE PIPE EXTEND INTO THE STRUCTURE. CONTRACTOR WILL THEN BE REQUIRED TO CUT PIPE FLUSH WITH THE INSIDE FACE OF THE STRUCTURE AND GROUT IN PLACE.
7. PIPES SHALL HAVE JOINT RESTRAINTS ON LAST 3 JOINTS AT PIPE OUTFALL.
8. PIPES WITH PRESSURE HEAD SHALL USE WATER TIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.
9. PIPE BEDDING SHALL CONFORM TO EL PASO COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS. BEDDING FOR RCP SHALL BE AG7122 NO. 57/67 CRUSHED ROCK. SQUEEGEE OR MIXTURES CONTAINING SQUEEGEE SHALL NOT BE USED. BEDDING SHALL BE 6 TO 8 INCHES DEEP UNDER THE PIPE AND BACKFILLED TO THE SPRING LINE.
10. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH MANUFACTURERS SPECIFICATIONS AND EL PASO COUNTY STANDARDS AND SPECIFICATION.
11. SEE DETAIL SHEET 15 - 16 FOR APPLICABLE DETAILS.

**POND NOTES**

1. ALL PROPOSED POND IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
2. SEE SHEETS 3-6 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.

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SCOTT SMITH \_\_\_\_\_ DATE \_\_\_\_\_  
LYRJ  
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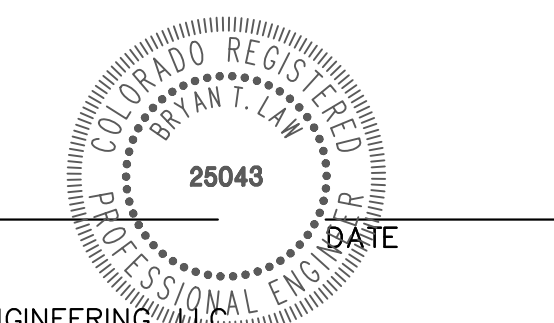
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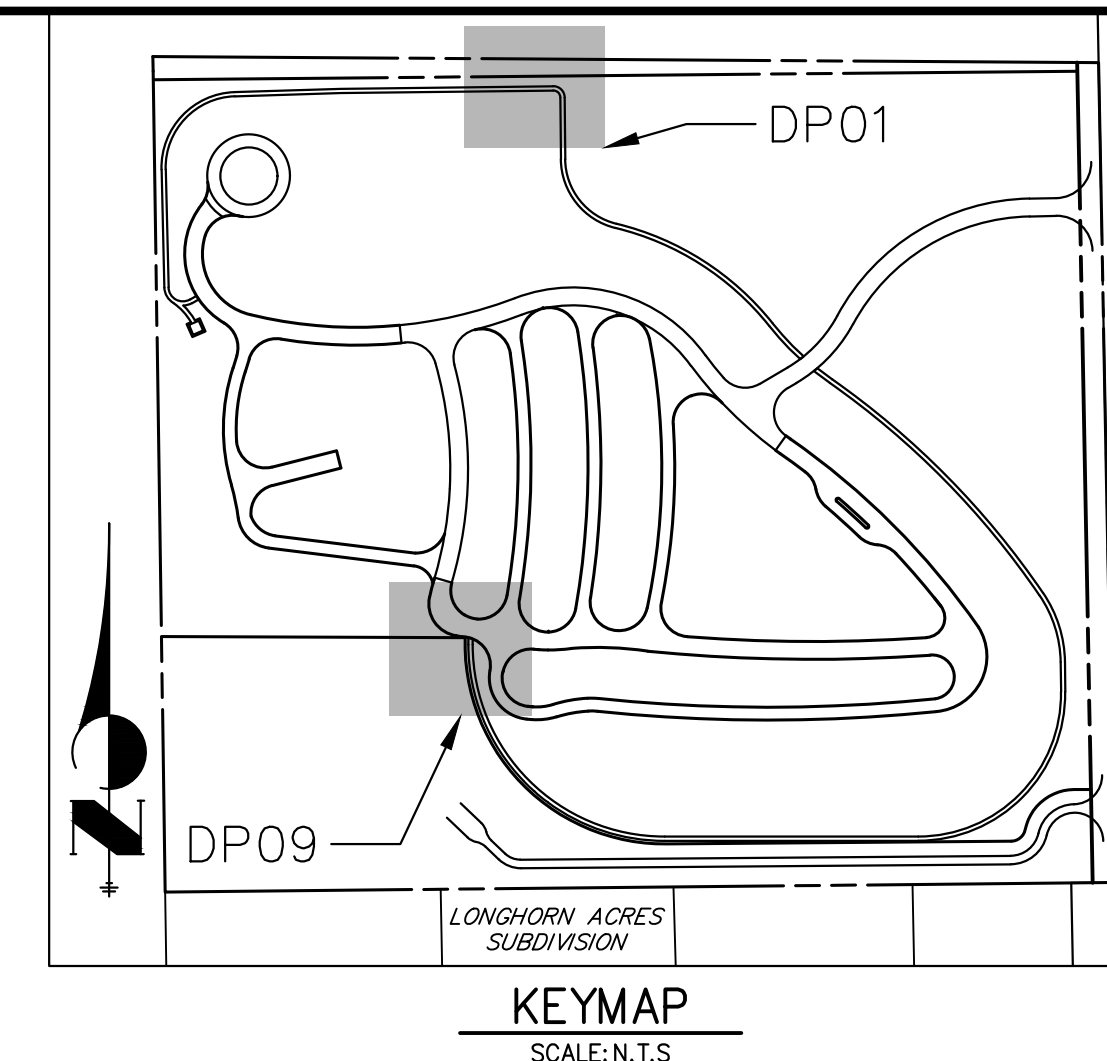
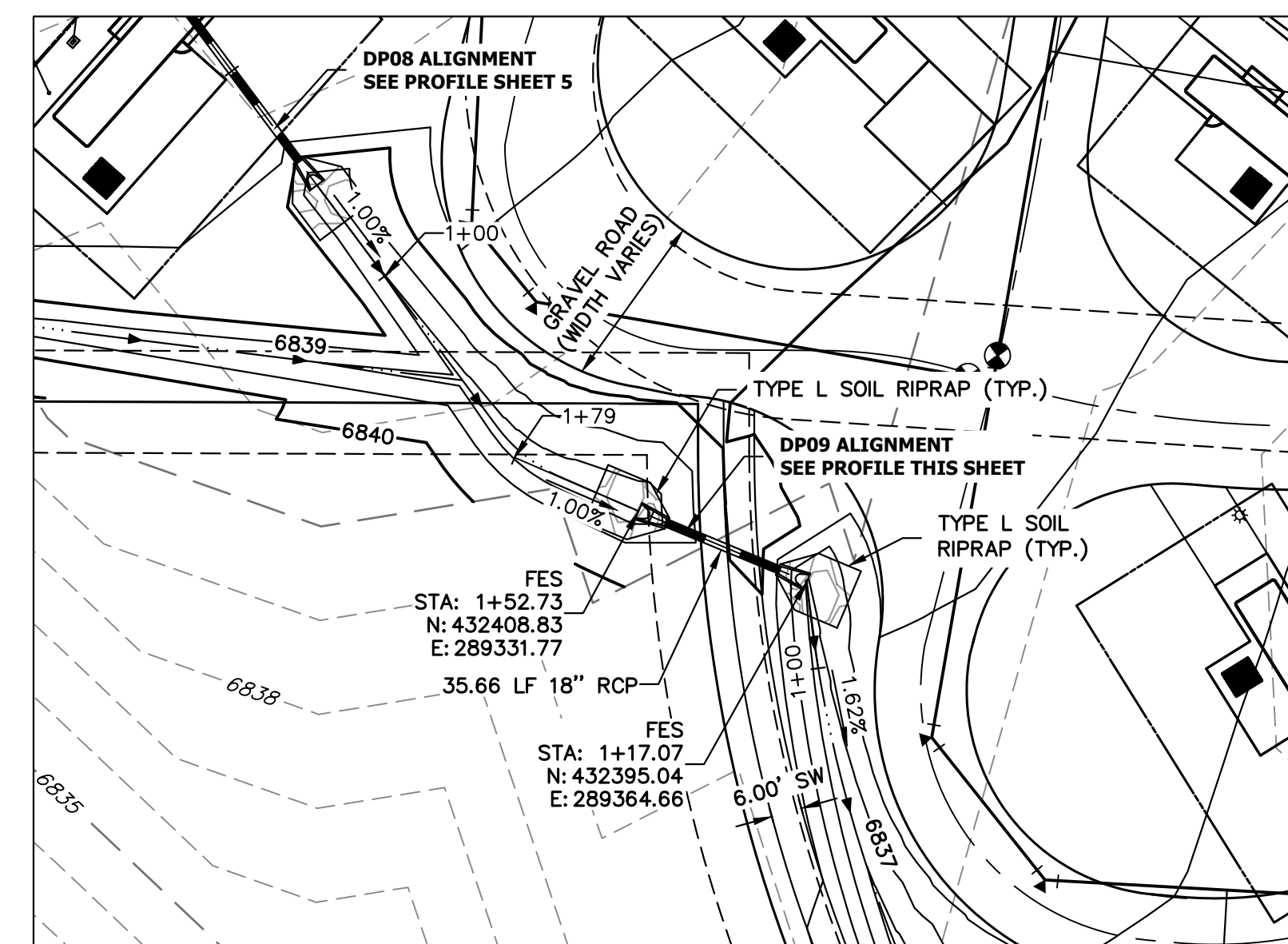
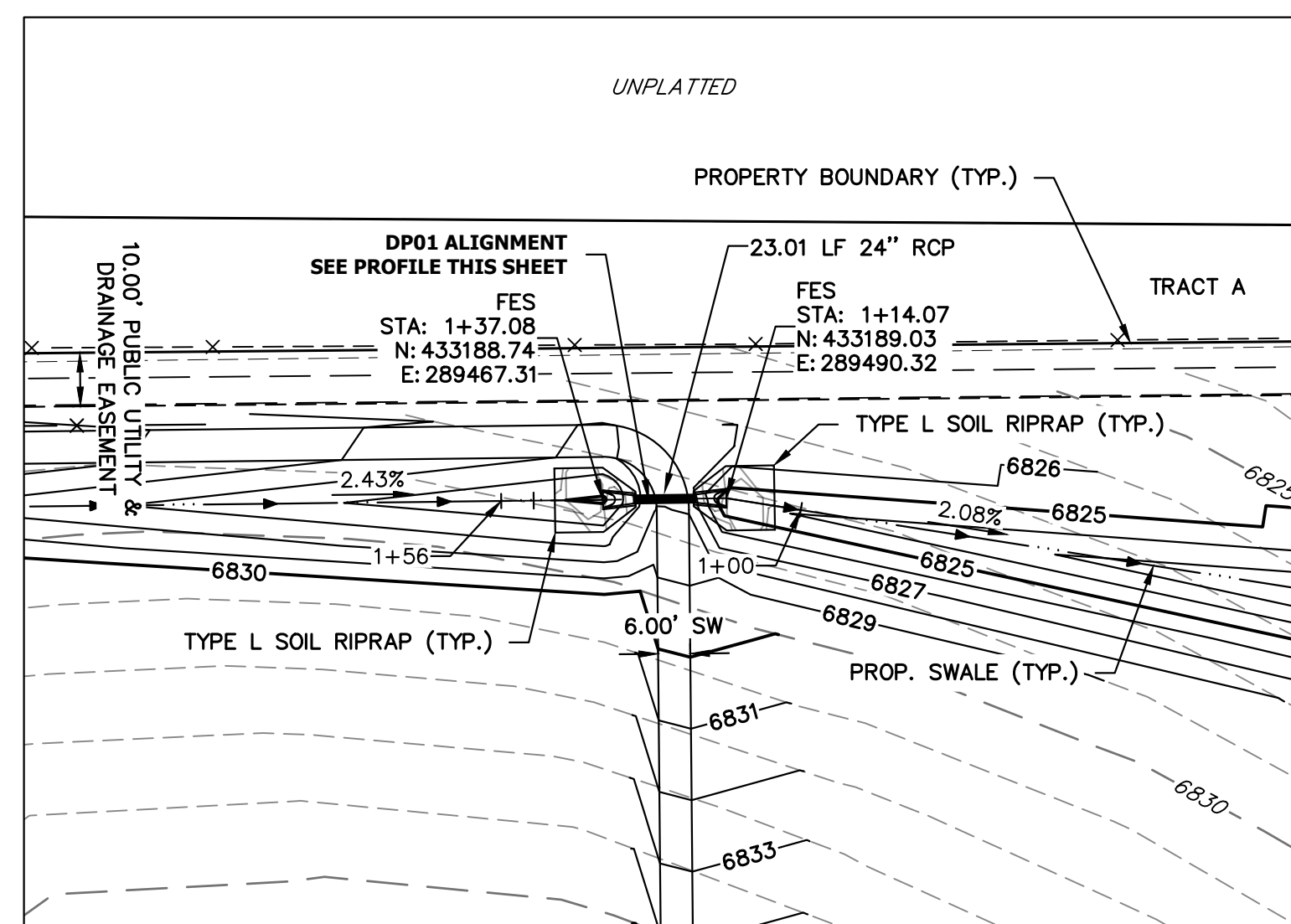
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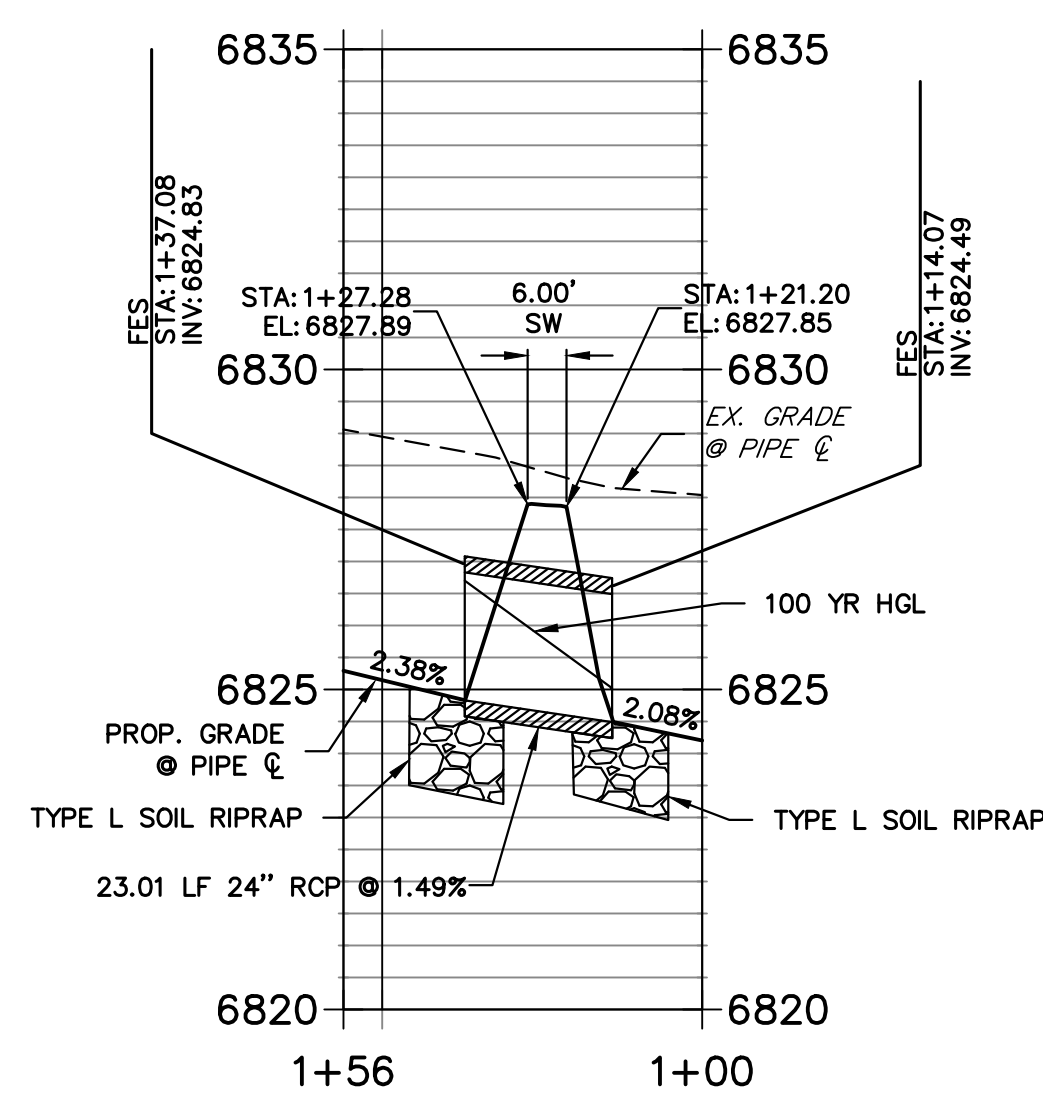


BY	DATE								
No.	REVISION								
H-SCALE	1"=1000'	N/A							
V-SCALE			01/29/26	PAL	PAL				
DESIGNED BY									
DRAWN BY									
CHECKED BY									
LAZY Y AND ROCKING J SUBDIVISION COVER									
SHEET 1 OF 16									
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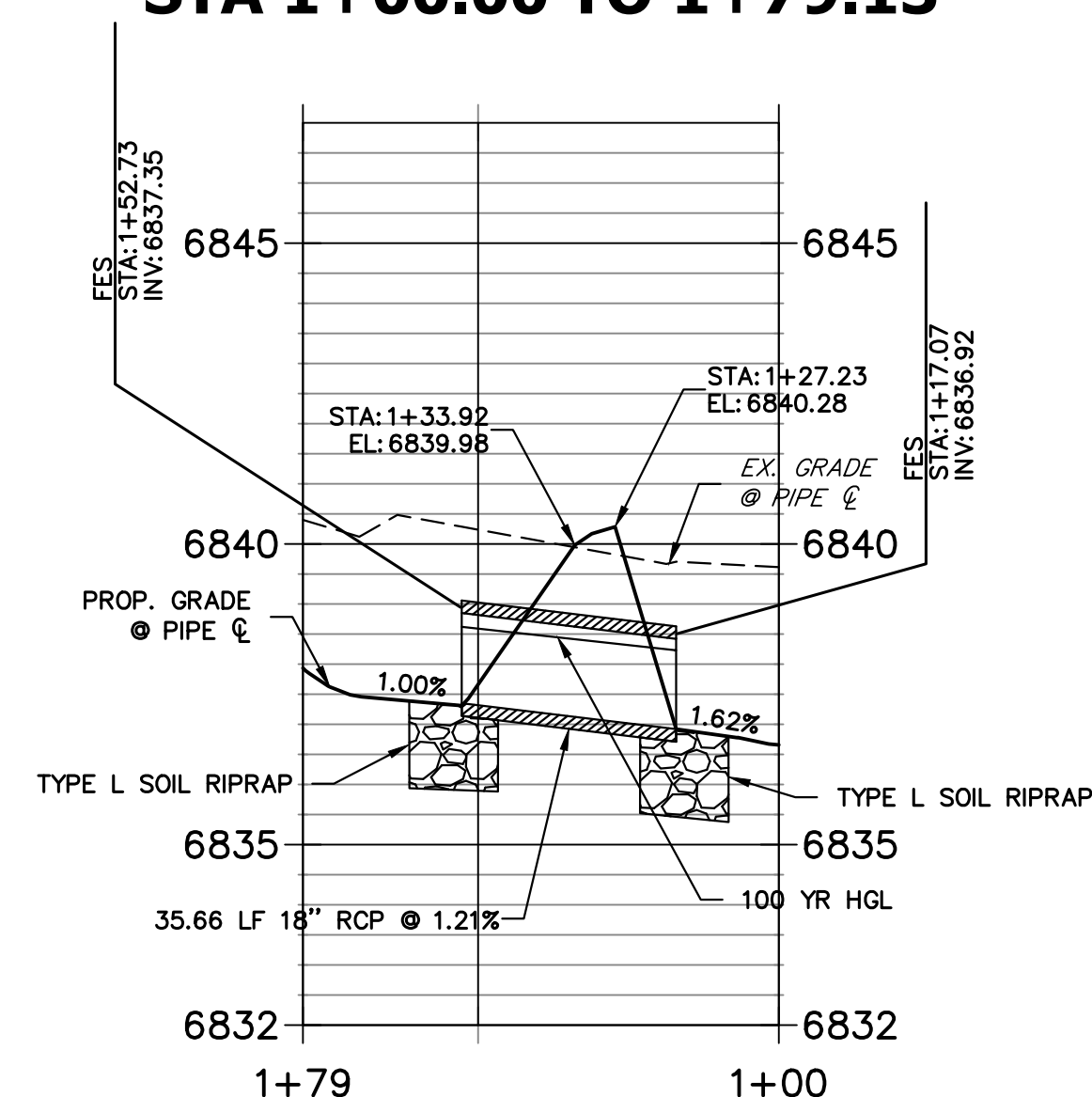




**DP01 PROFILE**  
STA 1+00.00 TO 1+56.05



**DP09 PROFILE**  
STA 1+00.00 TO 1+79.13



**STORM SEWER NOTES**

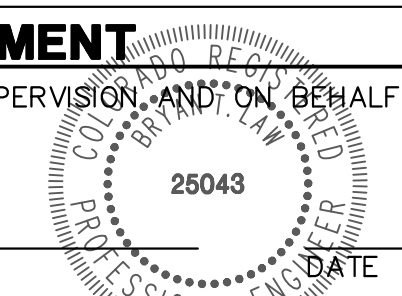
1. PIPE LENGTHS MEASURED FROM CENTER OF MANHOLES TO CENTER OF MANHOLES, INSIDE FACE OF INLETS, OUTLET END OF FLARED END SECTIONS AND FACE OF WALLS WHERE APPLICABLE.
2.  $\phi$  STATIONS & OFFSETS ARE LABELED AT CENTER OF STRUCTURE.
3. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS, PRIOR TO EXTENSION OF MAINS AND SERVICE CONNECTIONS. CONTRACTOR TO COORDINATE CONNECTIONS WITH UTILITY PROVIDER.



Know what's below.  
Call before you dig.

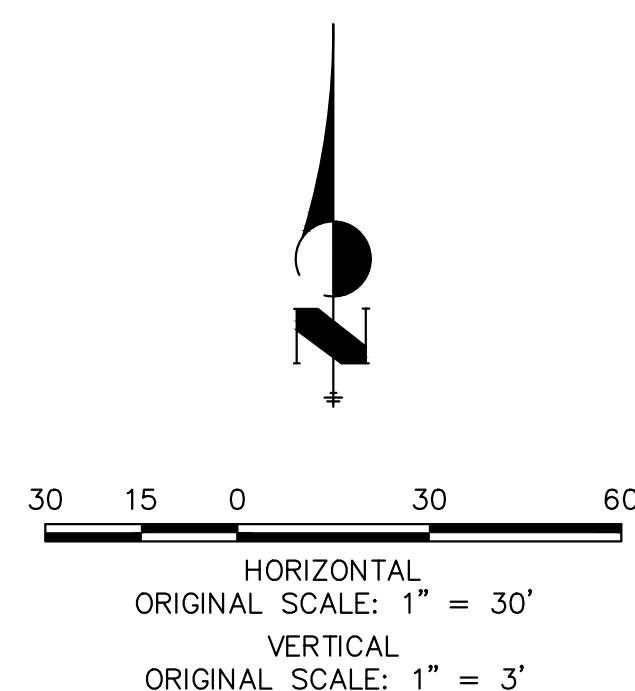
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PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

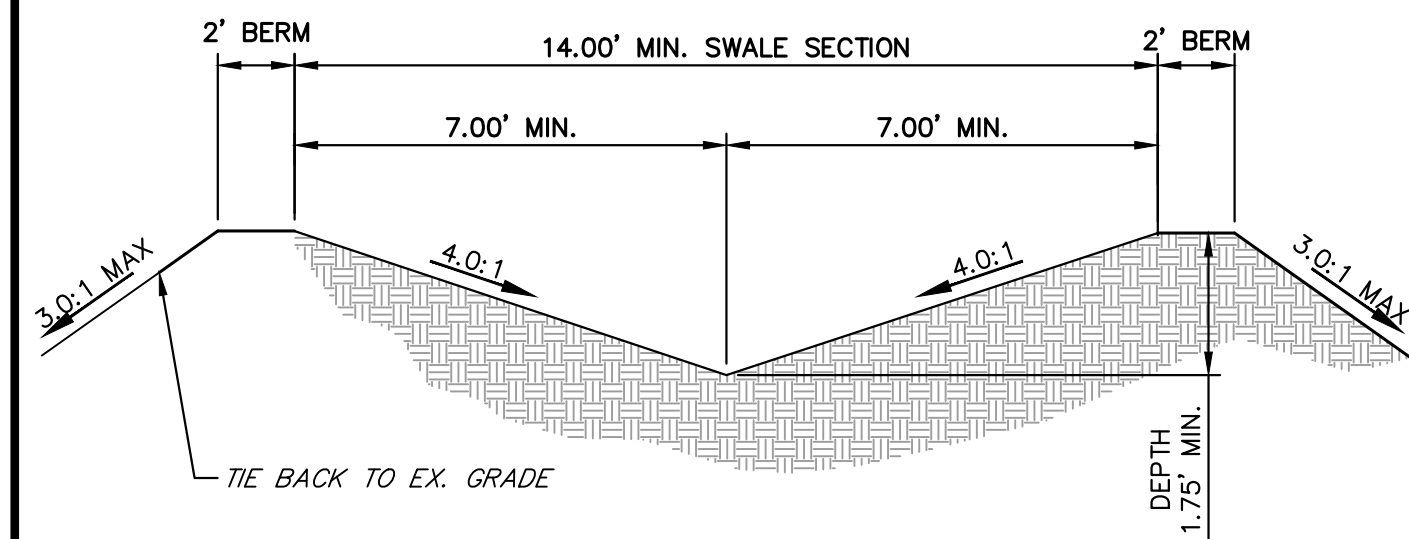


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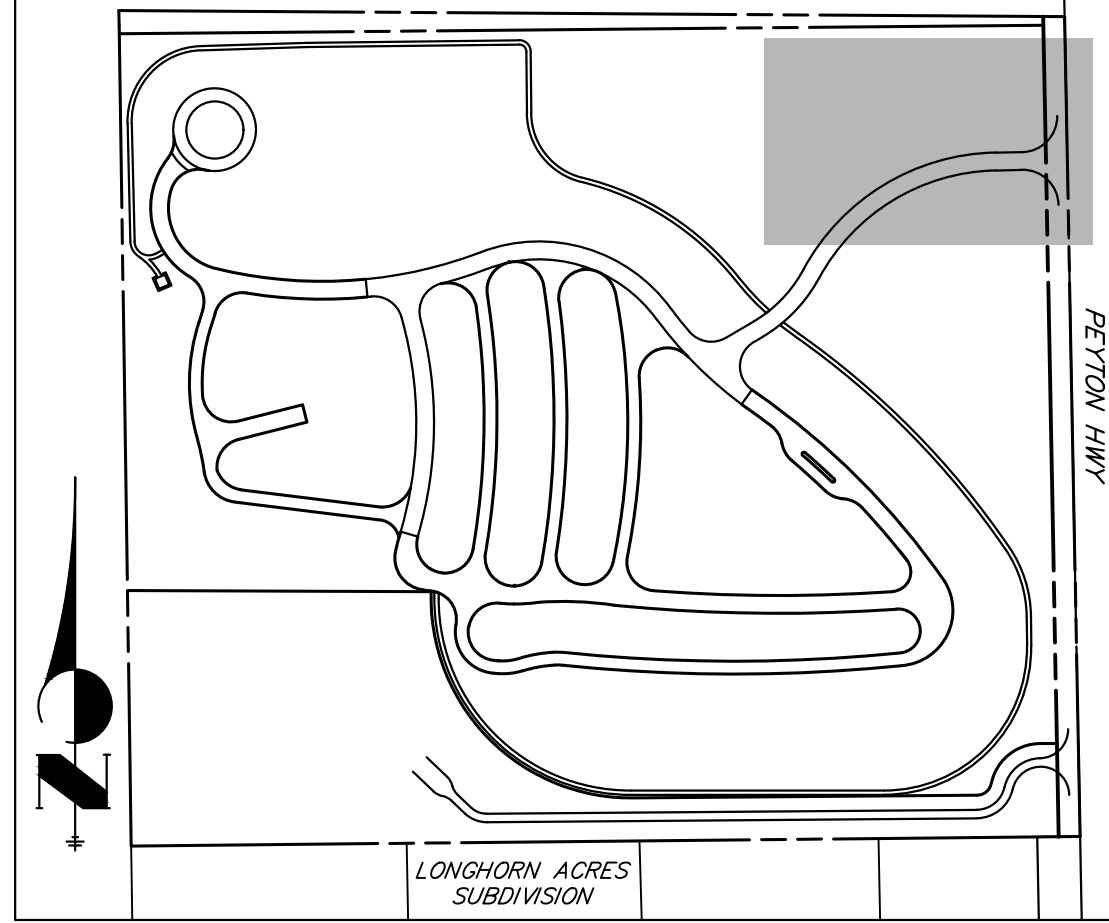
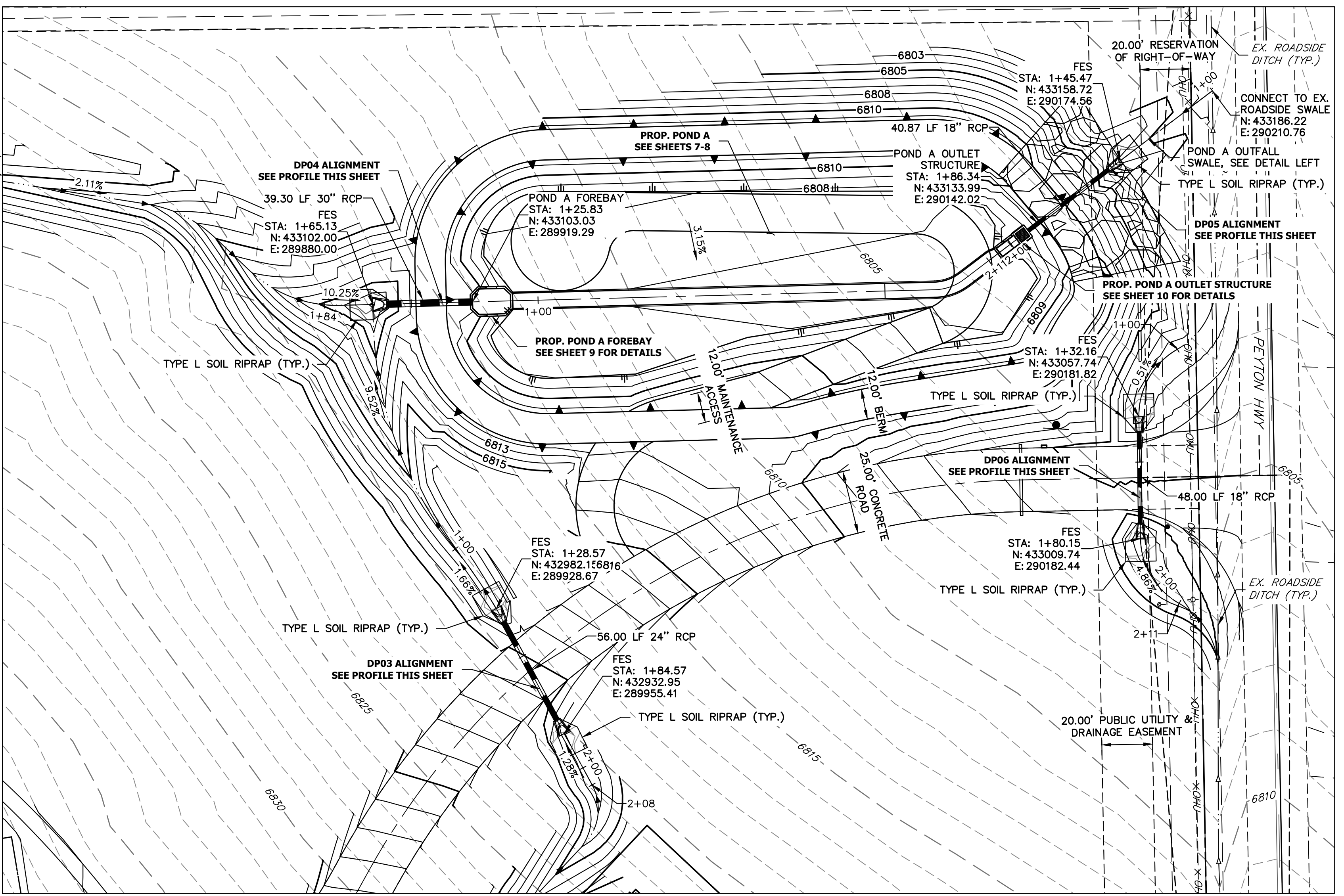
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BY	DATE
No.	REVISION
H-SCALE	1"=30'
V-SCALE	1"=3'
DATE	01/29/26
DESIGNED BY	PAL
DRAWN BY	PAL
CHECKED BY	
LAZY Y AND ROCKING J SUBDIVISION	
STORM SEWER PLAN & PROFILE	
SHEET	3 OF 16
JOB NO.	25228.00



POND A OUTFALL SWALE  
SCALE: N.T.S.



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

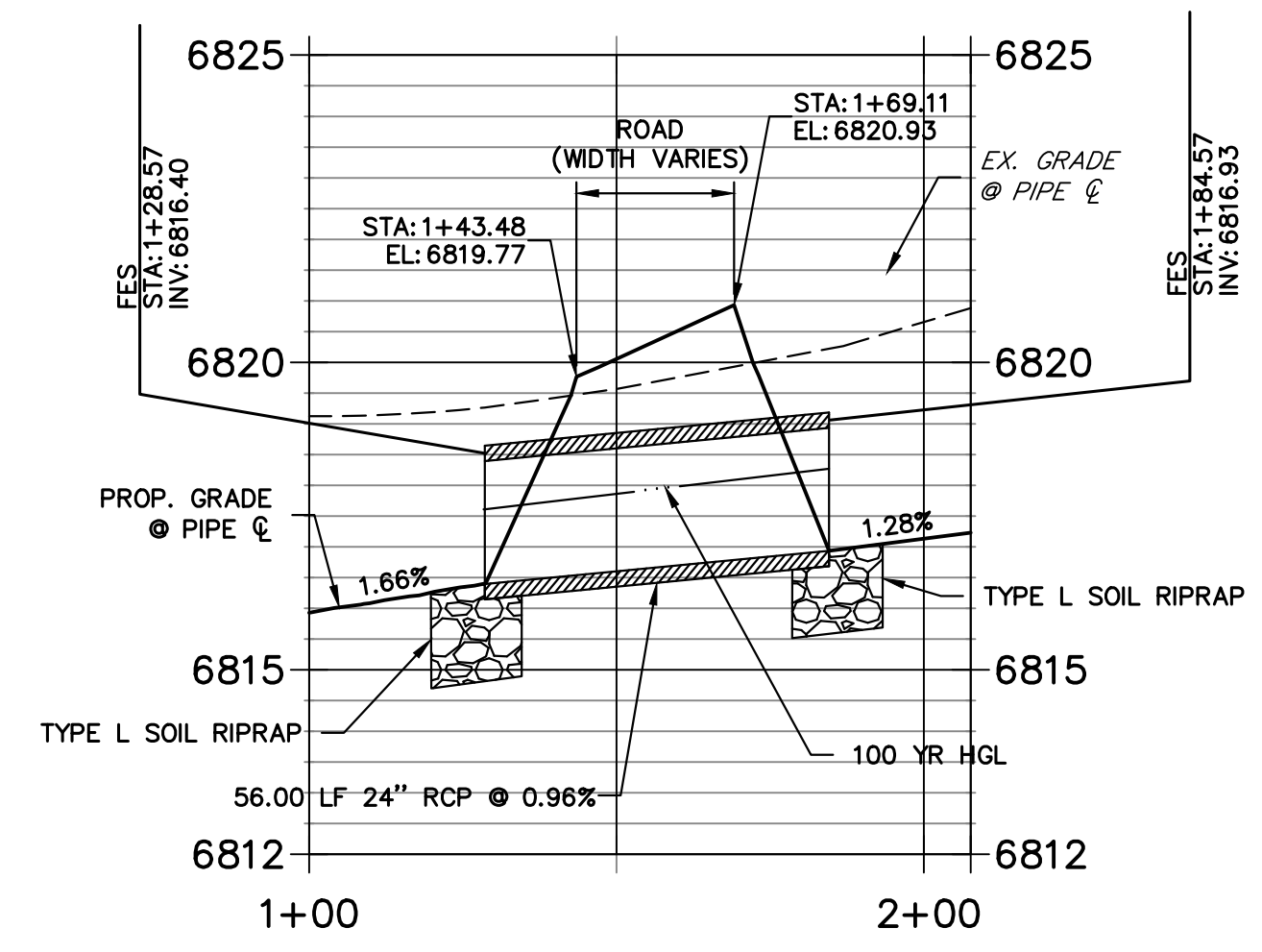


KEYMAP  
SCALE: N.T.S.

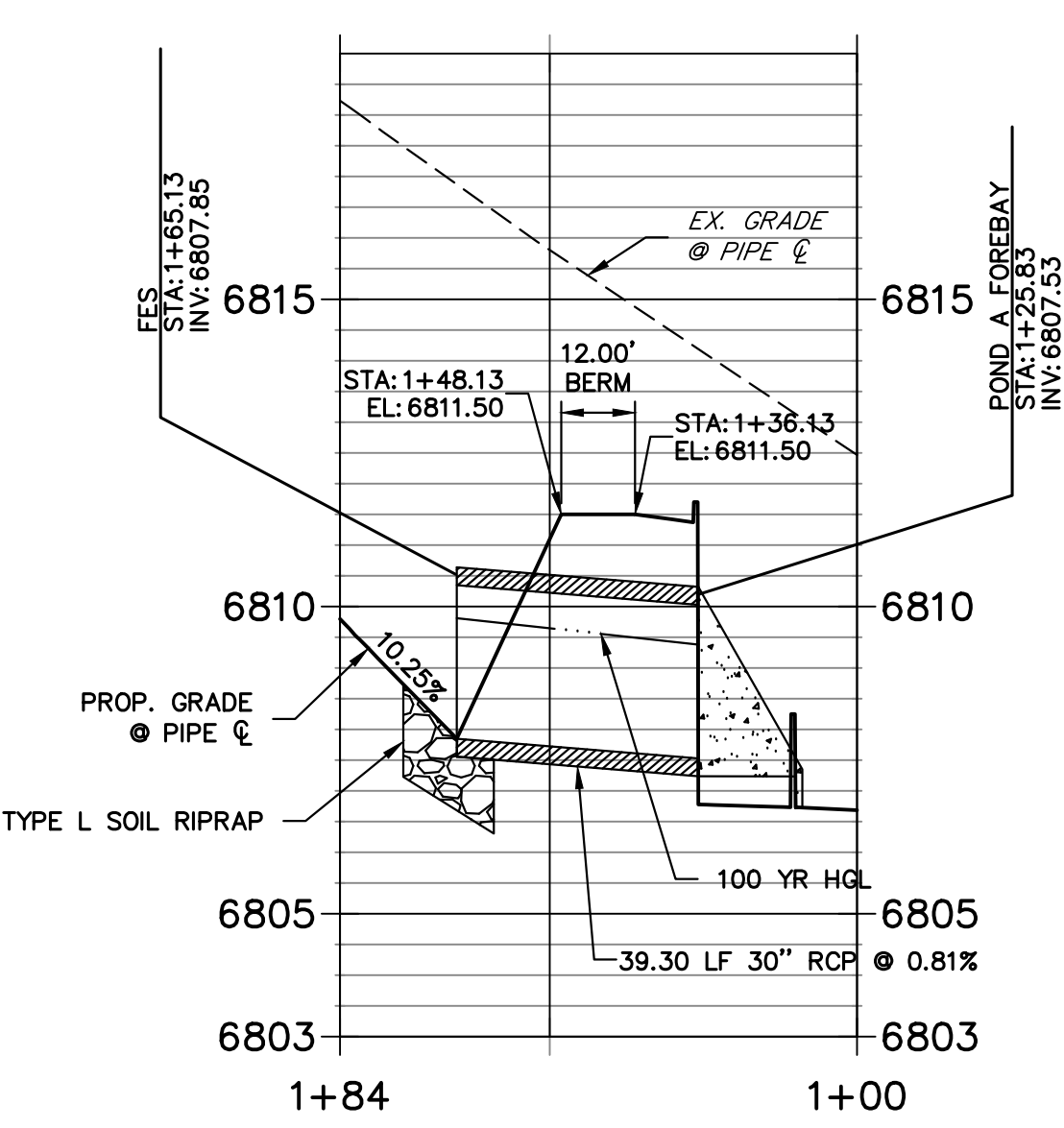
**STORM SEWER NOTES**

1. PIPE LENGTHS MEASURED FROM CENTER OF MANHOLES TO CENTER OF MANHOLES, INSIDE FACE OF INLETS, OUTLET END OF FLARED END SECTIONS AND FACE OF WALLS WHERE APPLICABLE.
2. E STATIONS & OFFSETS ARE LABELED AT CENTER OF STRUCTURE.
3. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS, PRIOR TO EXTENSION OF MAINS AND SERVICE CONNECTIONS. CONTRACTOR TO COORDINATE CONNECTIONS WITH UTILITY PROVIDER.

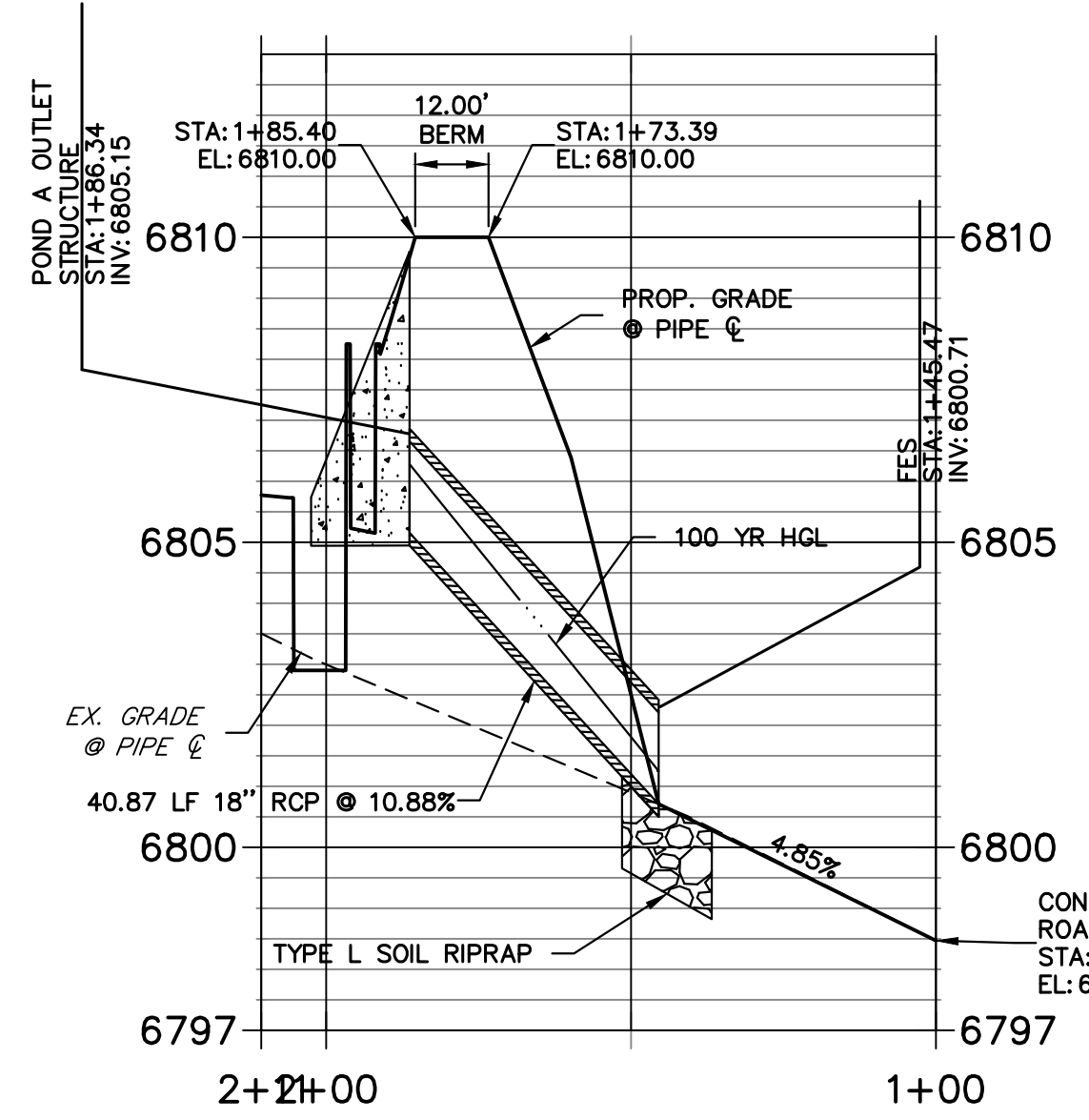
**DP03 PROFILE  
STA 1+00.00 TO 2+07.63**



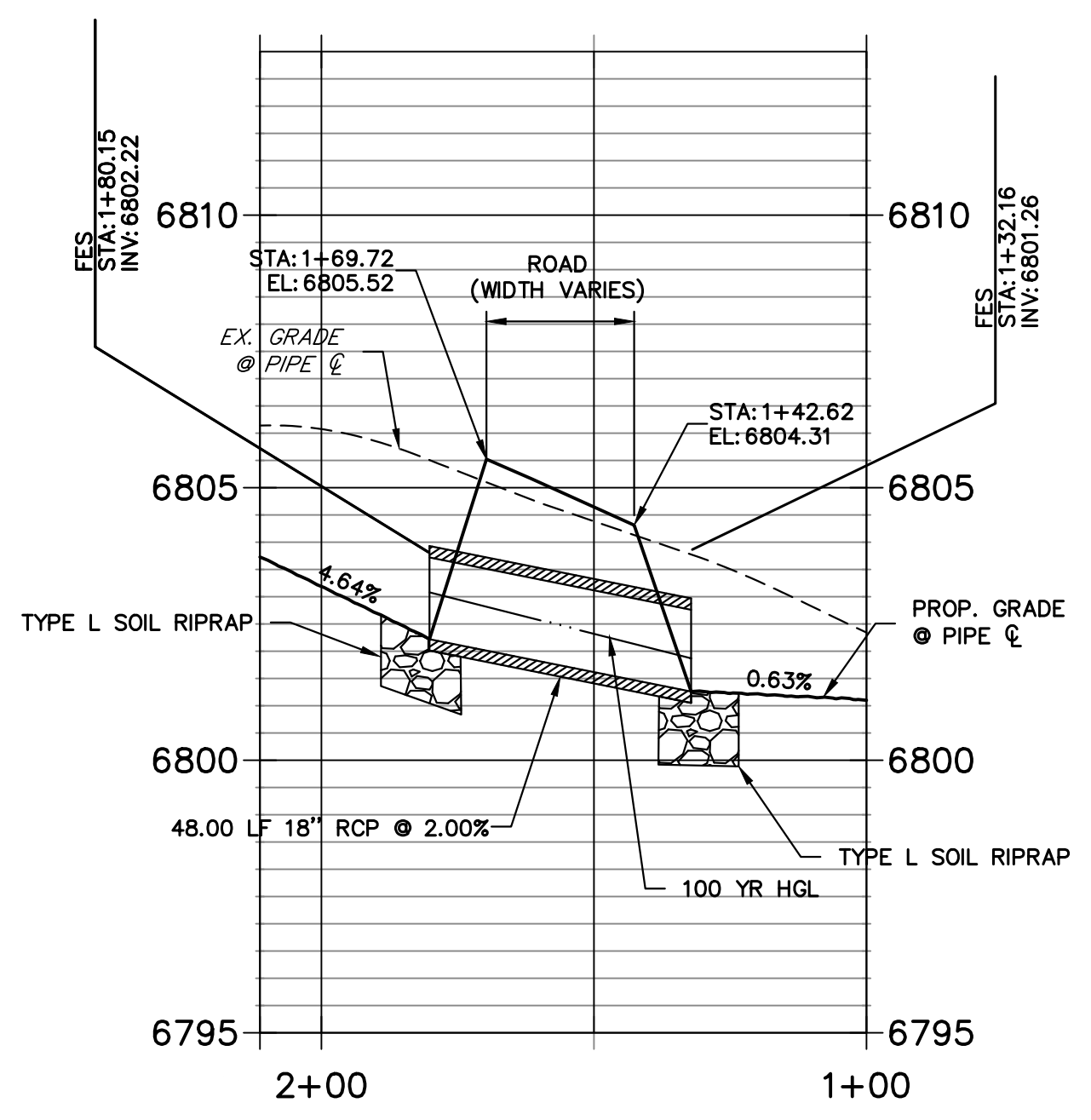
**DP04 PROFILE  
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**DP05 PROFILE  
STA 1+00.00 TO 2+10.66**



**DP06 PROFILE  
STA 1+00.00 TO 2+11.27**



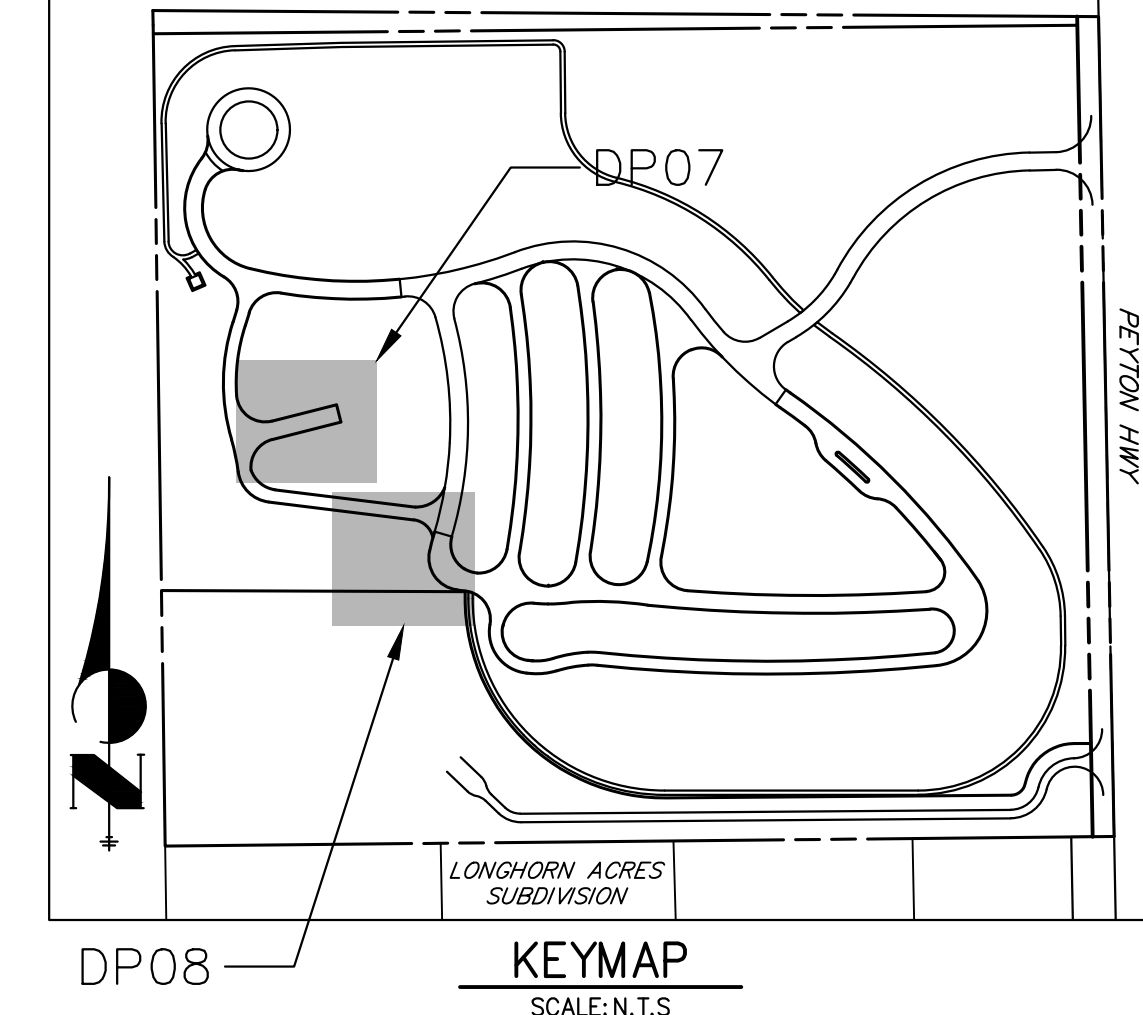
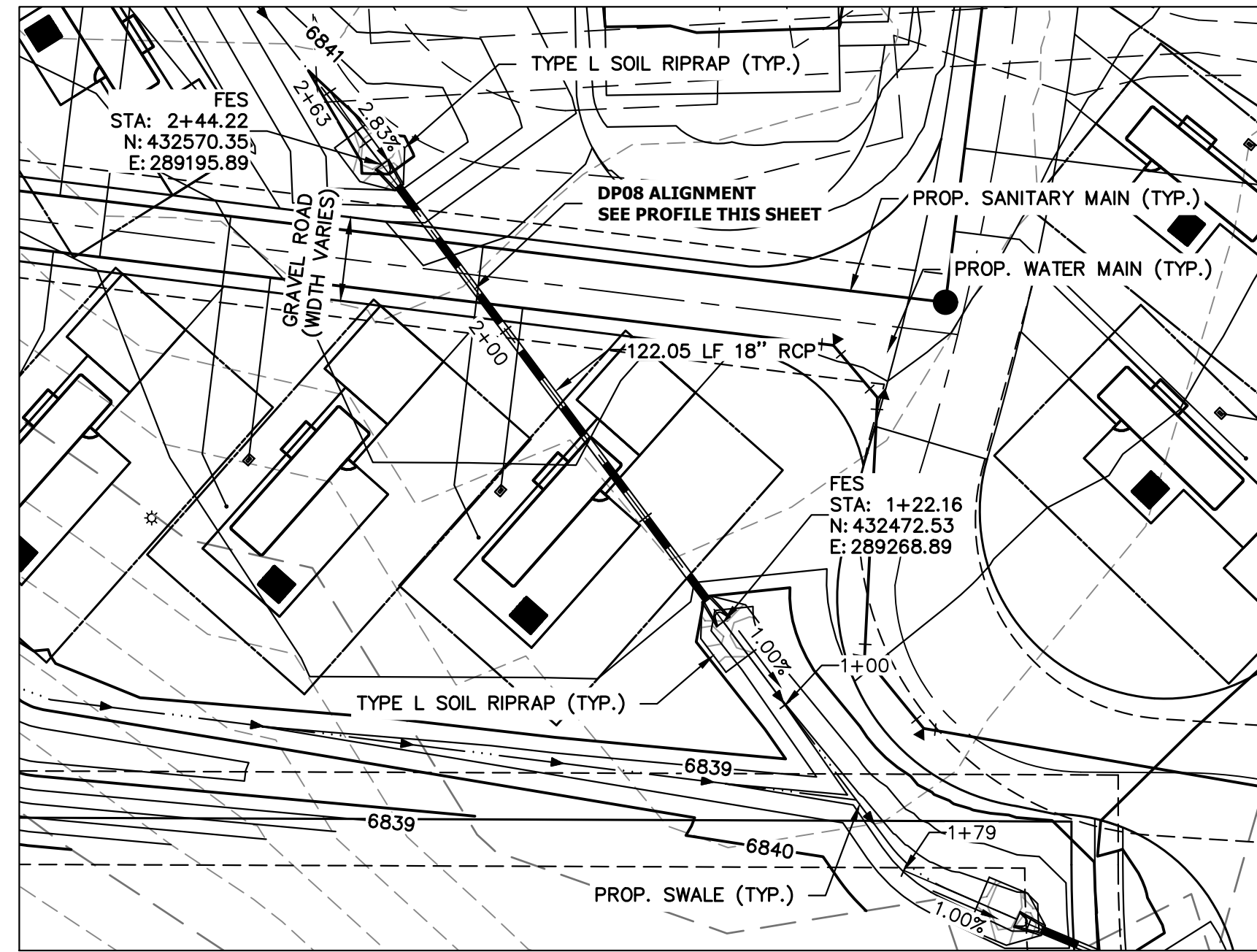
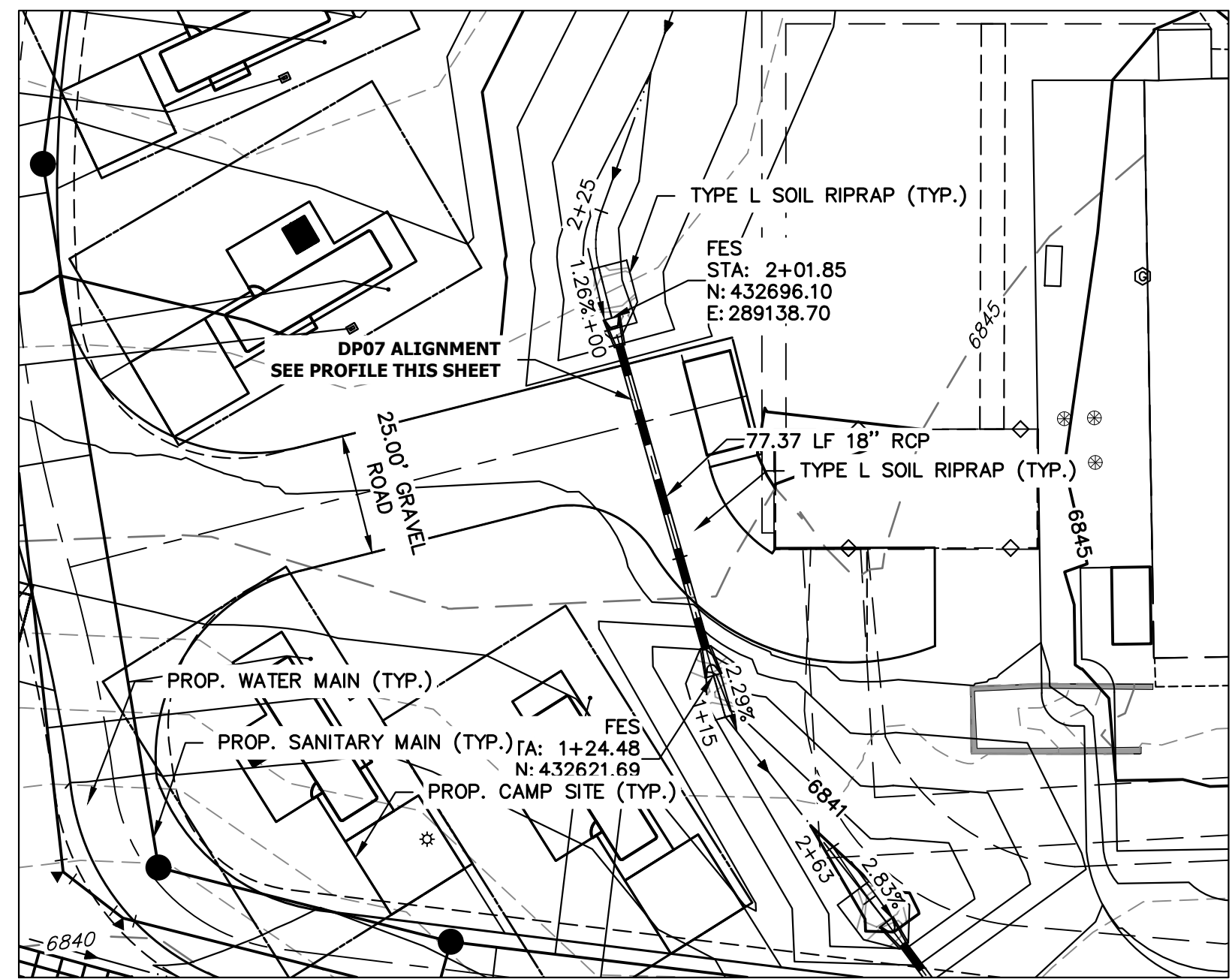
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**ENGINEER'S STATEMENT**

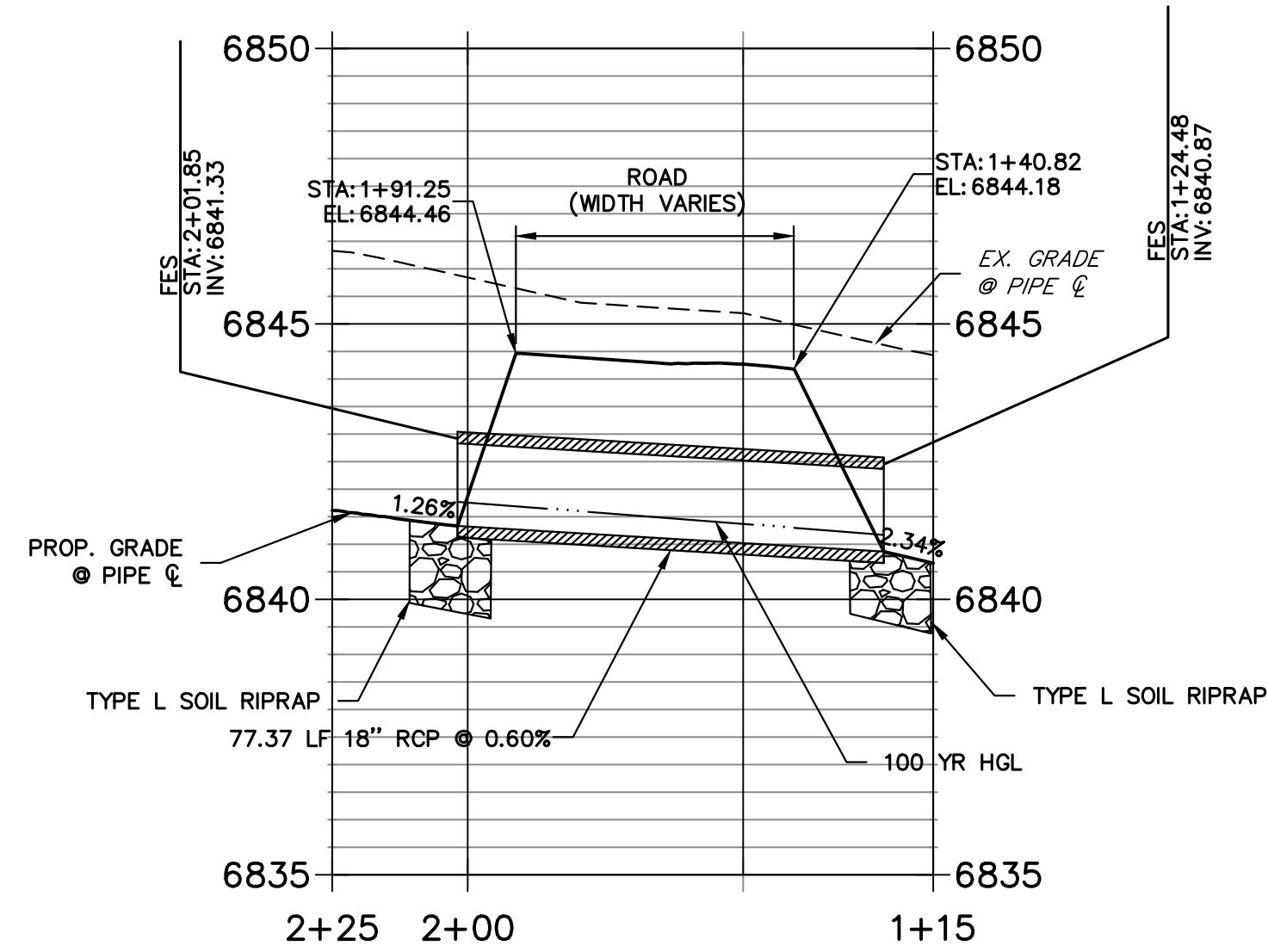
PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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 <b>LYRJ</b> 1172 GREENLAND FOREST DRIVE MONUMENT, CO 80106 SCOTT SMITH (719) 499-7764	<b>J.R. ENGINEERING</b> A Westman Company Centennial 300-740-9888 • Colorado Springs 719-583-2583 Fort Collins 970-491-9888 • www.jrengineering.com	BY	DATE
LAZY Y AND ROCKING J SUBDIVISION  STORM SEWER PLAN & PROFILE	No.	REVISION	
	H-SCALE	1"=30'	
	V-SCALE	1"=3'	
	DATE	01/29/26	
DESIGNED BY	PAL	DRAWN BY	PAL
CHECKED BY			
SHEET	4	OF	16
JOB NO.	25228.00		

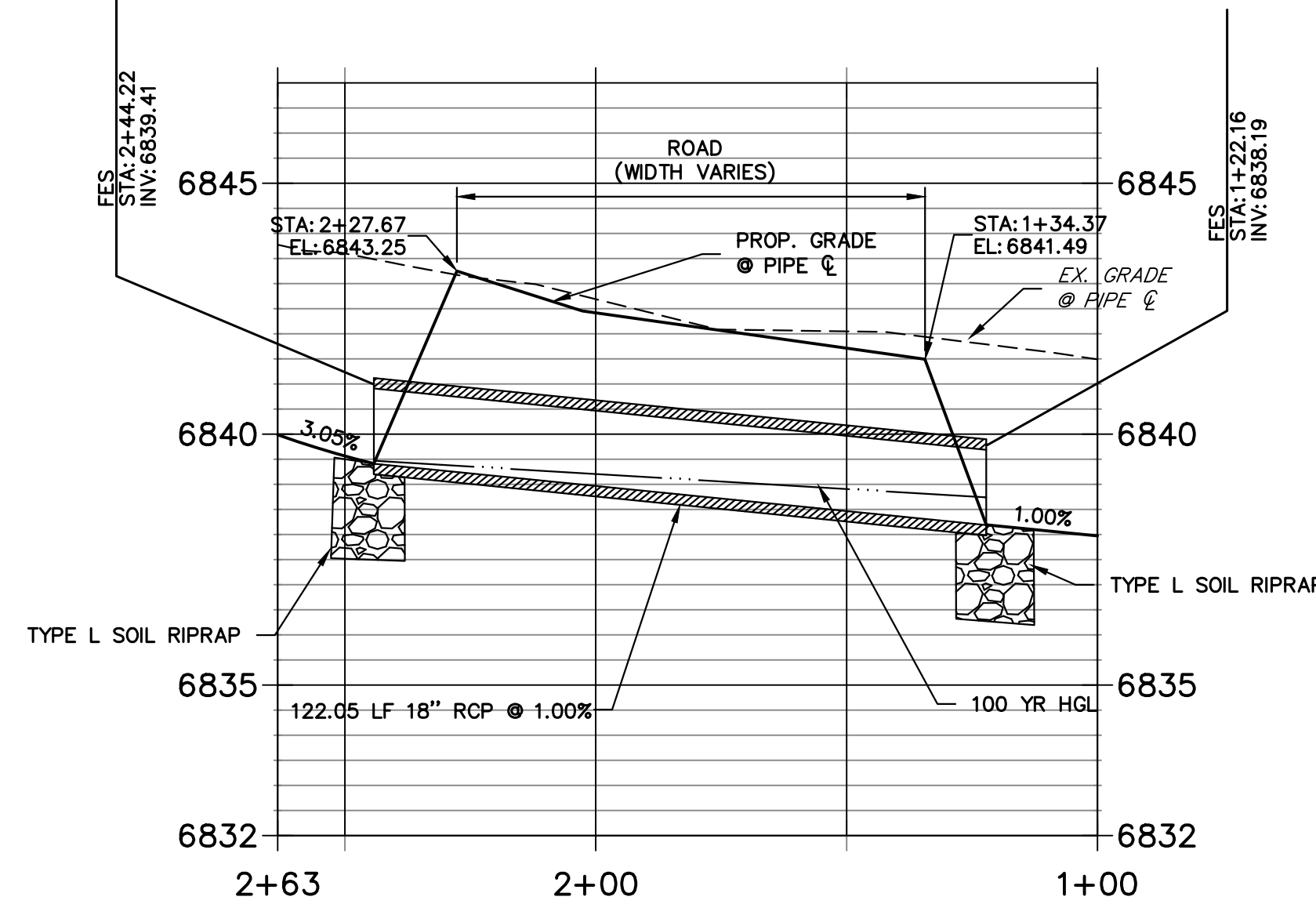


UNLESS SHOWN OTHERWISE, ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.  
 PREPARED FOR  
 LRY  
 1172 GREENLAND FOREST DRIVE  
 MONUMENT, CO 80106  
 SCOTT SMITH  
 (719) 499-7764

**DP07 PROFILE**  
**STA 1+15.50 TO 2+24.60**



**DP08 PROFILE**  
**STA 1+00.00 TO 2+63.42**



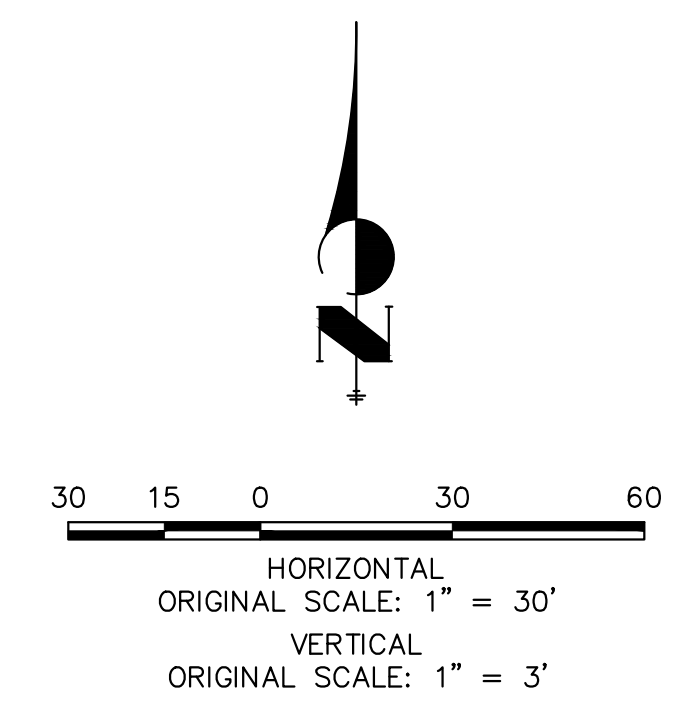
**STORM SEWER NOTES**

1. PIPE LENGTHS MEASURED FROM CENTER OF MANHOLES TO CENTER OF MANHOLES, INSIDE FACE OF INLETS, OUTLET END OF FLARED END SECTIONS AND FACE OF WALLS WHERE APPLICABLE.
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 Centennial 303-740-9888 • Colorado Springs 719-583-2583  
 Fort Collins 970-491-9888 • www.jrengineering.com

BY	DATE	No.	REVISION

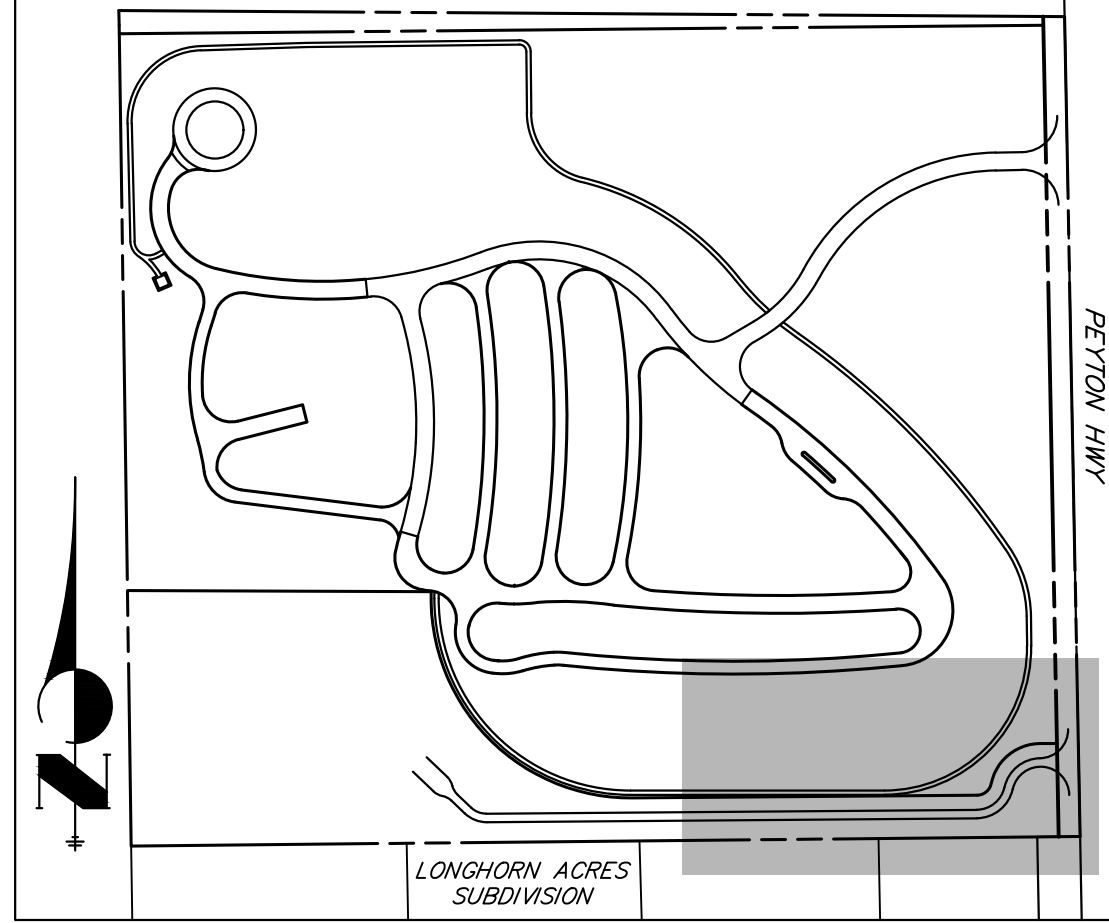
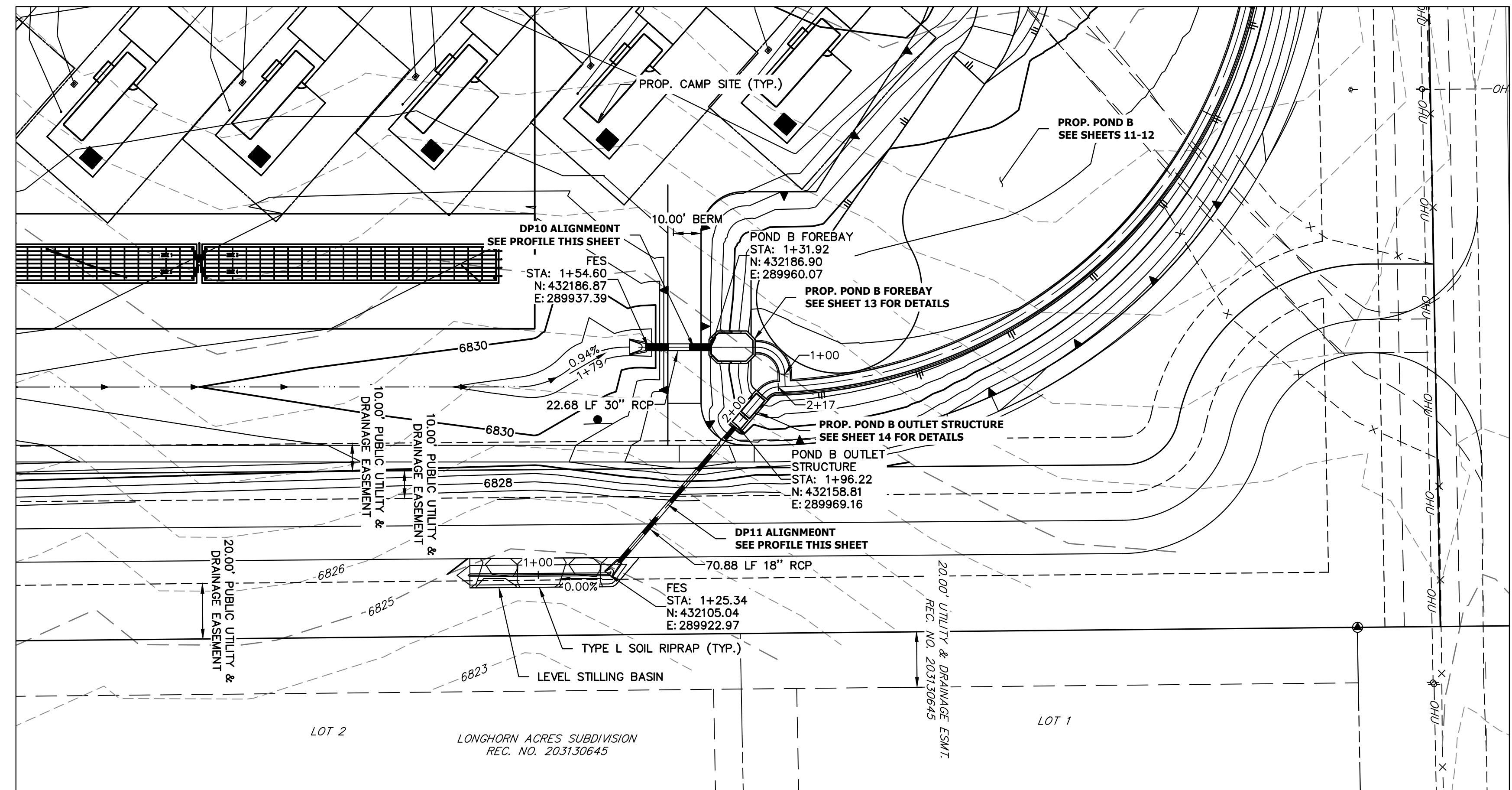
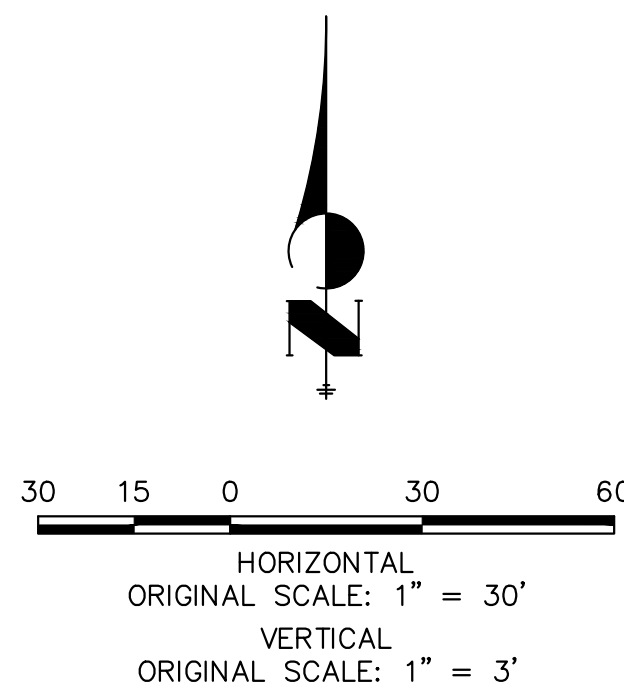
**LAZY Y AND ROCKING J SUBDIVISION**  
**STORM SEWER PLAN & PROFILE**



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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



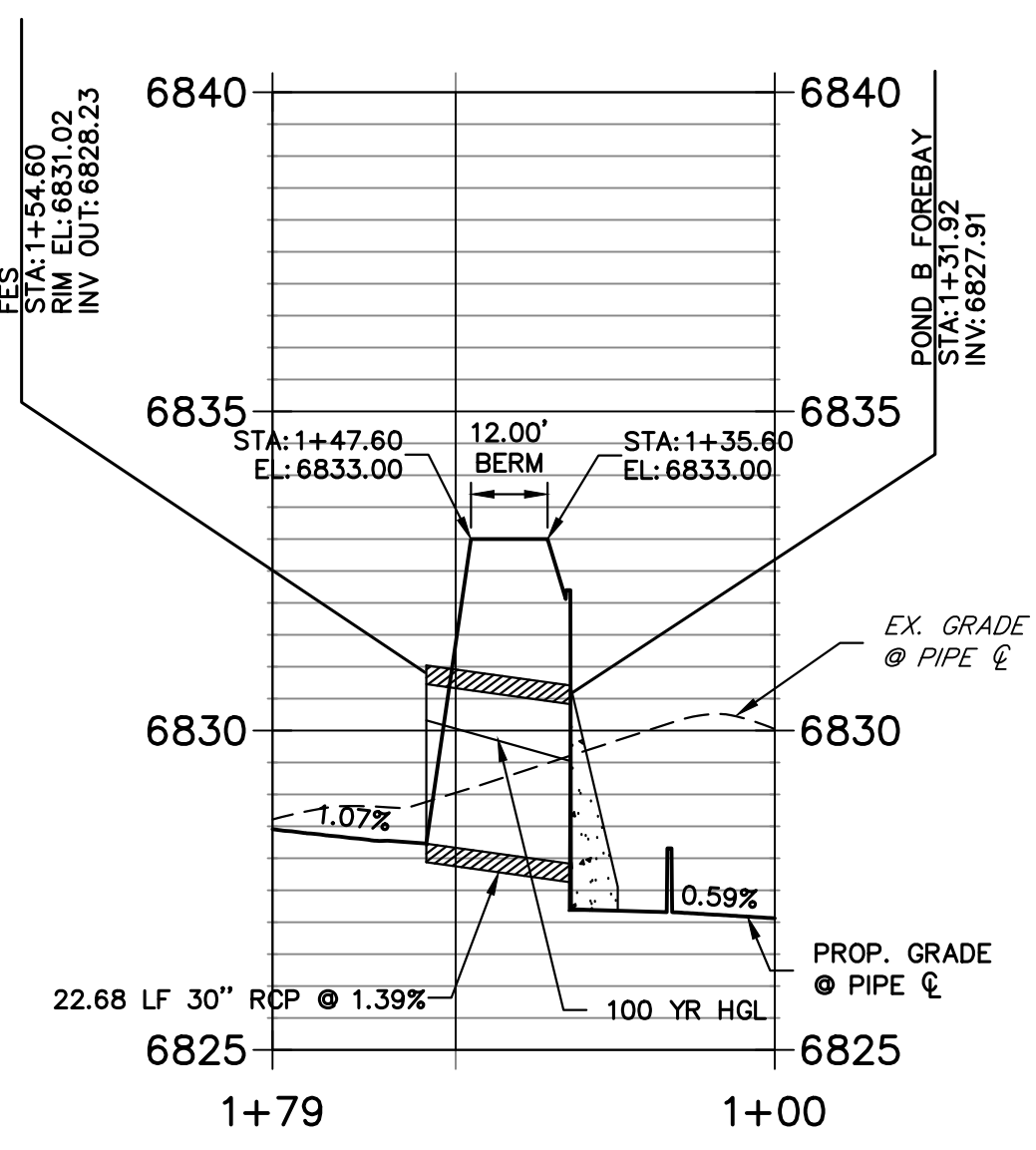
KEYMAP  
SCALE: N.T.S.

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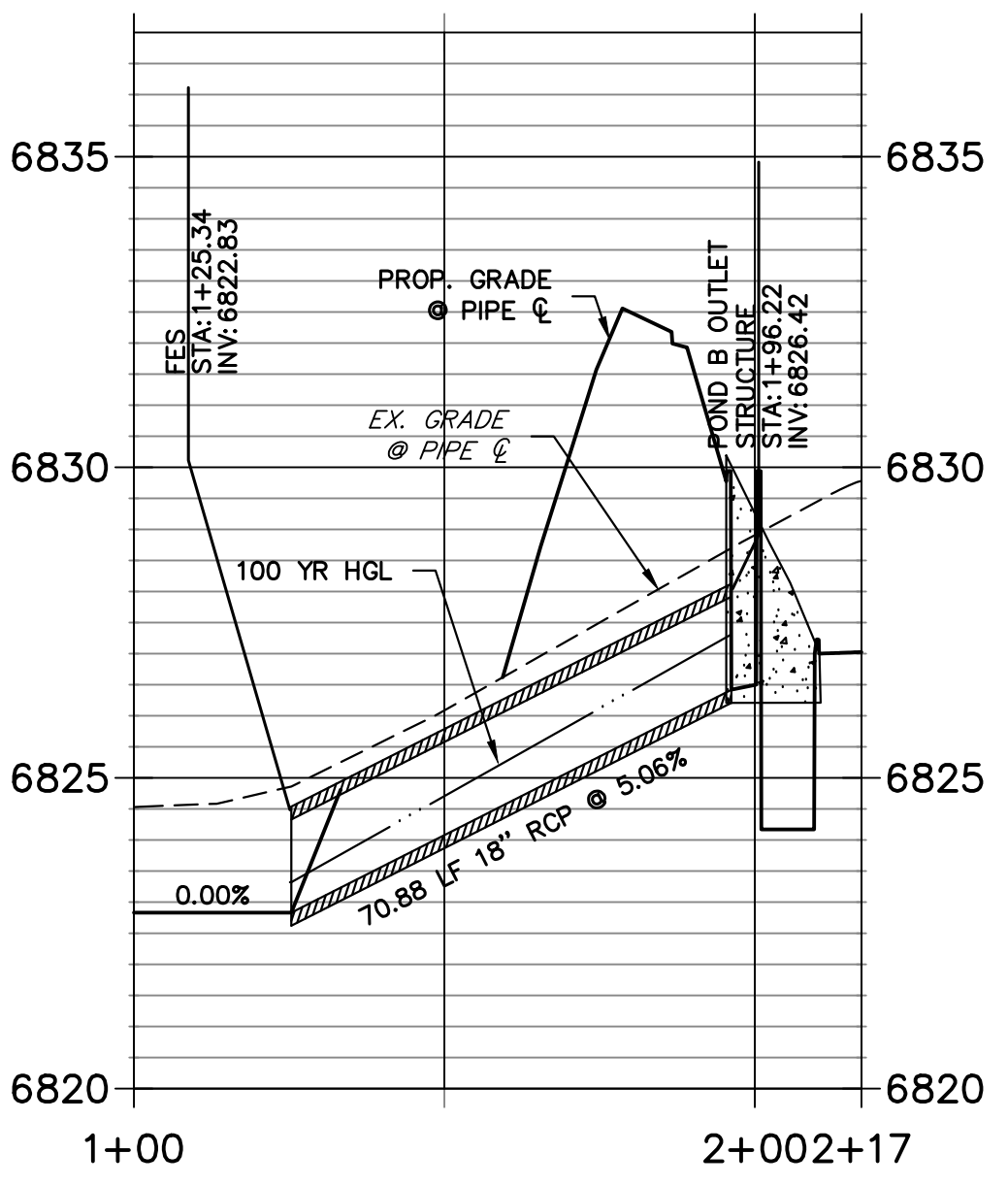
PREPARED FOR  
**LVRJ**  
1172 GREENLAND FOREST DRIVE  
MONUMENT, CO 80106  
SCOTT, SMITH  
(719) 499-7764

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

**DP10 PROFILE**  
STA 1+00.00 TO 1+78.69



**DP11 PROFILE**  
STA 1+00.00 TO 2+17.17



**STORM SEWER NOTES**

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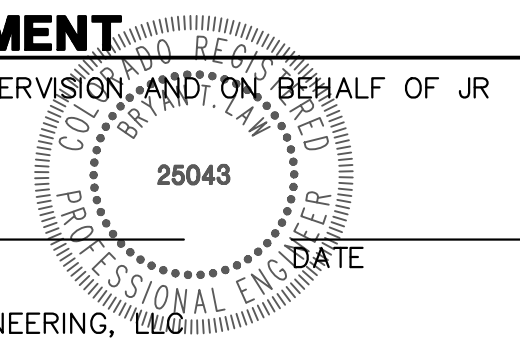
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**ENGINEER'S STATEMENT**

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

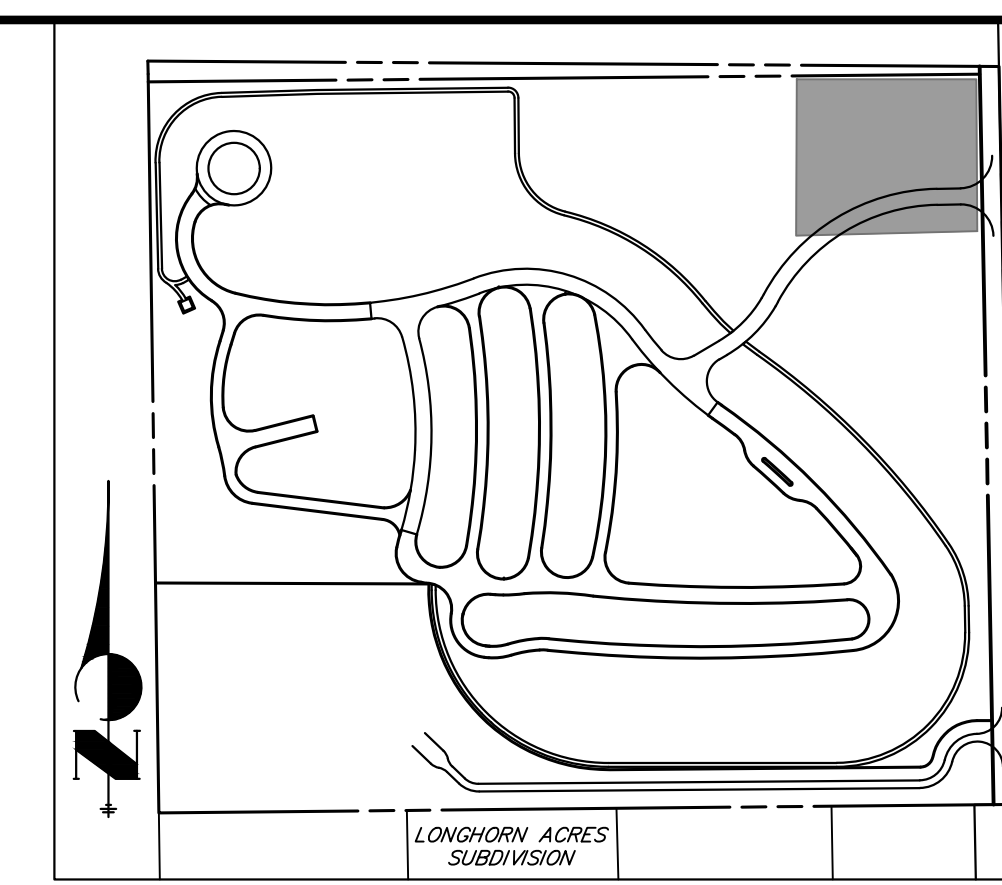
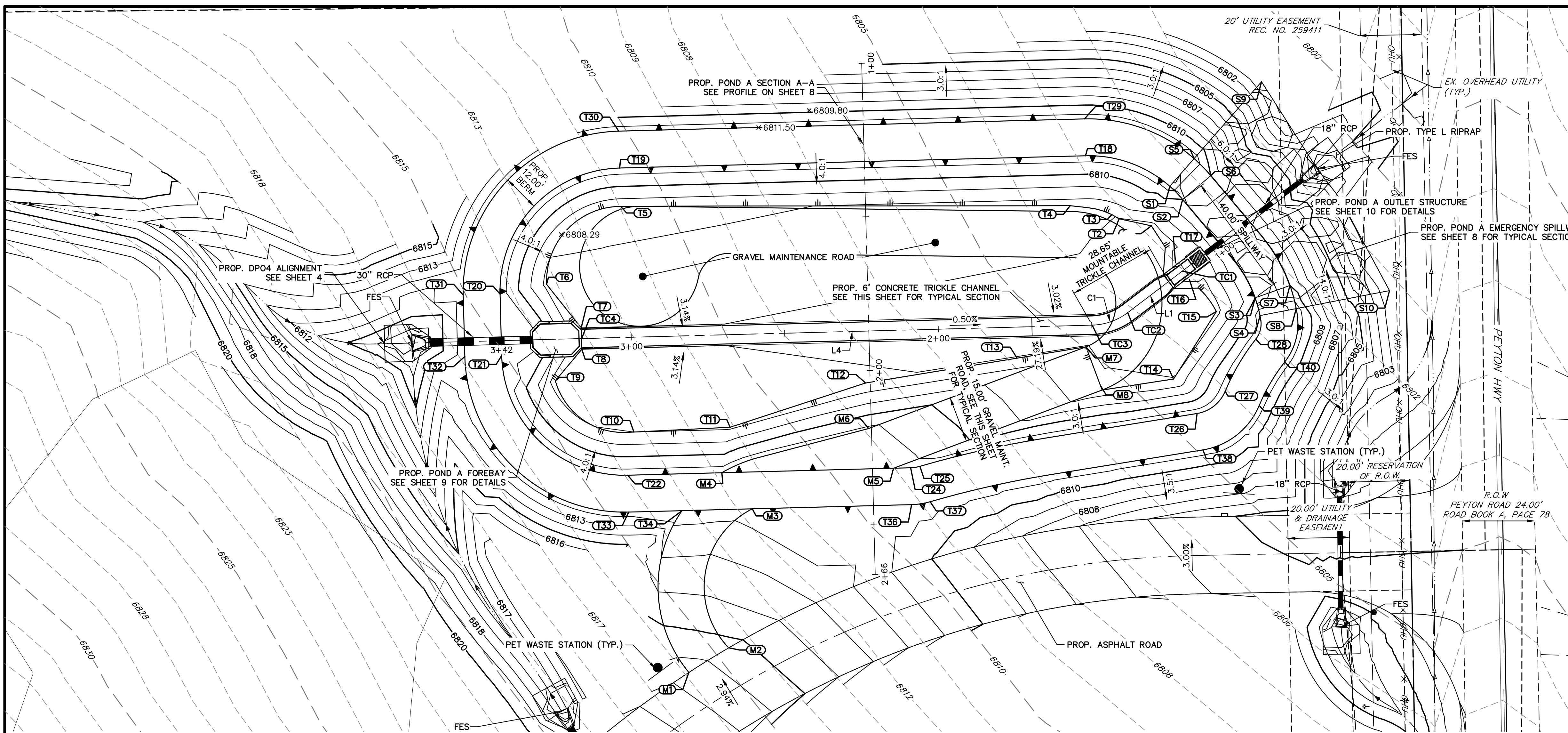
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING, LLC



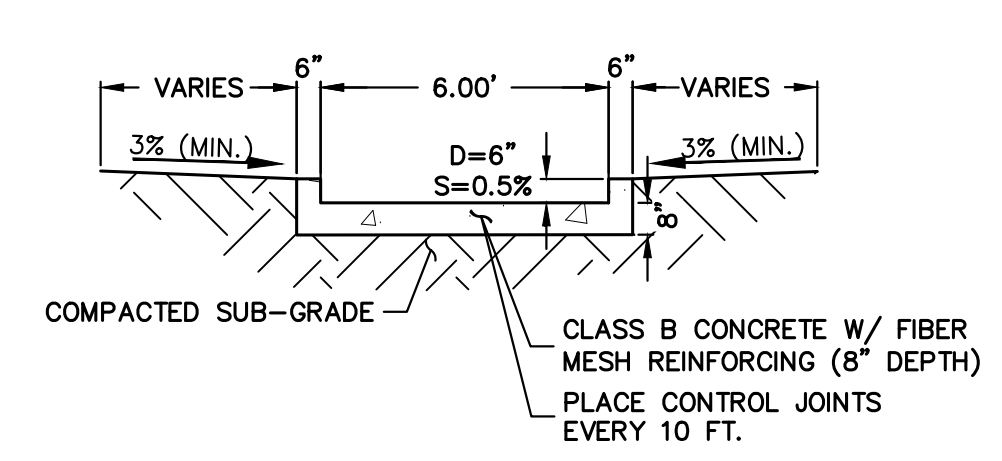
H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	No.	REVISION	BY	DATE

LAZY Y AND ROCKING J  
SUBDIVISION  
STORM SEWER PLAN &  
PROFILE

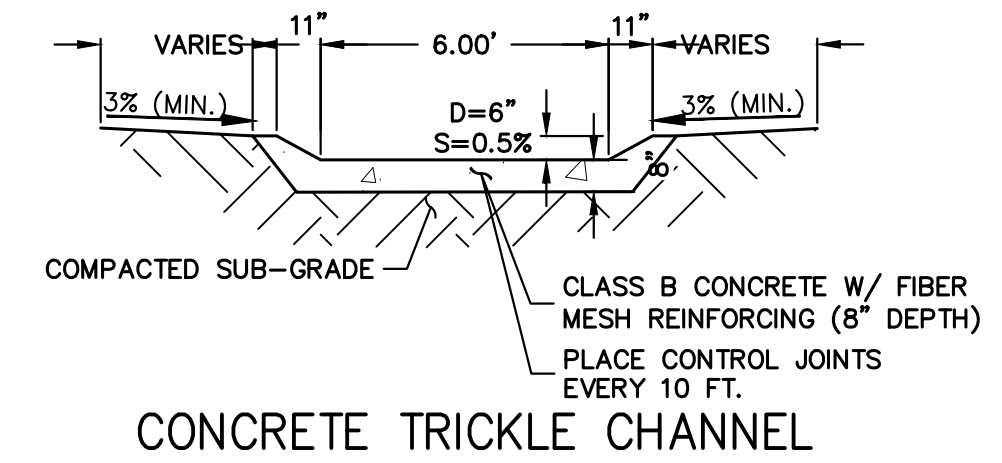
SHEET 6 OF 16  
JOB NO. 25228.00



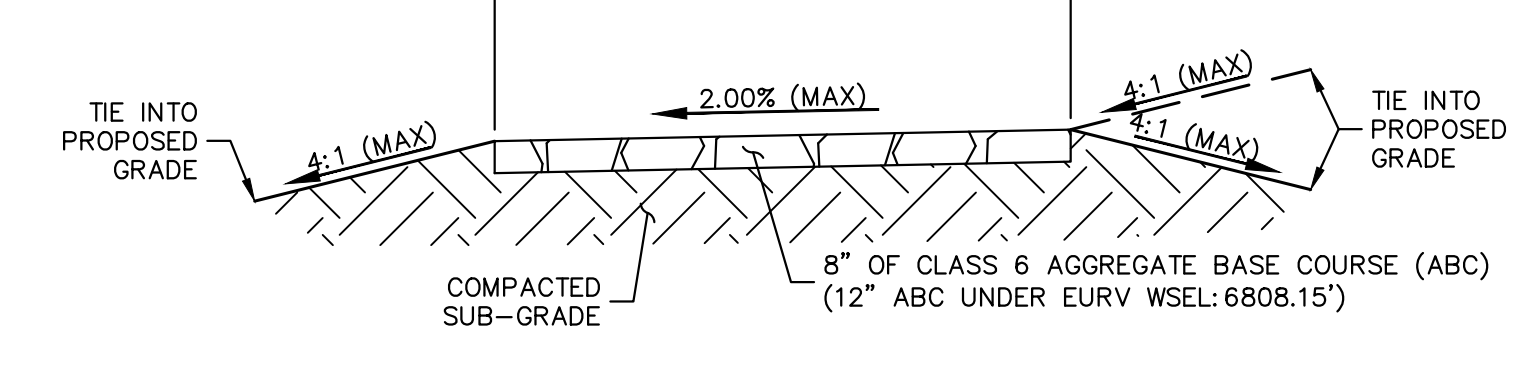
KEYMAP  
SCALE: N.T.S.



CONCRETE TRICKLE CHANNEL  
TYPICAL SECTION  
SCALE: 1"=4'



CONCRETE TRICKLE CHANNEL  
W/ MOUNTABLE CURB  
SCALE: 1"=4'



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

POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
M1	MAINTENANCE PATH	N: 432994.82 E: 289970.07	6816.54
M2	MAINTENANCE PATH	N: 433002.82 E: 289983.05	6815.40
M3	MAINTENANCE PATH	N: 433048.04 E: 289990.71	6811.50
M4	MAINTENANCE PATH	N: 433059.79 E: 289980.80	6811.50
M5	MAINTENANCE PATH	N: 433061.26 E: 290036.69	6811.50
M6	MAINTENANCE PATH	N: 433074.17 E: 290028.58	6811.19
M7	MAINTENANCE PATH	N: 433100.75 E: 290099.35	6807.08
M8	MAINTENANCE PATH	N: 433088.11 E: 290104.09	6807.35
S1	SPILLWAY TOP	N: 433153.01 E: 290126.63	6811.50
S2	SPILLWAY CREST	N: 433148.73 E: 290130.83	6810.00
S3	SPILLWAY CREST	N: 433116.72 E: 290154.44	6810.00
S4	SPILLWAY TOP	N: 433110.94 E: 290156.02	6811.50
S5	SPILLWAY/BERM	N: 433162.02 E: 290134.55	6811.50
S6	SPILLWAY CREST/BERM	N: 433156.46 E: 290140.01	6810.00
S7	SPILLWAY CREST/BERM	N: 433120.72 E: 290165.76	6810.00
S8	SPILLWAY/BERM	N: 433113.20 E: 290167.80	6811.50

POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
S9	SPILLWAY MATCH EX.	N: 433187.02 E: 290156.50	6800.41
S10	SPILLWAY MATCH EX.	N: 433119.05 E: 290198.18	6801.19
T1	TOE	N: 433140.14 E: 290120.64	6806.67
T2	TOE	N: 433142.56 E: 290110.21	6807.00
T3	TOE	N: 433143.78 E: 290107.80	6807.04
T4	TOE	N: 433146.69 E: 290094.21	6807.47
T5	TOE	N: 433146.47 E: 289947.86	6808.38
T6	TOE	N: 433121.11 E: 289923.73	6807.74
T7	TOE	N: 433106.95 E: 289935.02	6807.23
T8	TOE	N: 433099.95 E: 289935.21	6807.23
T9	TOE	N: 433089.72 E: 289926.58	6807.59
T10	TOE	N: 433073.04 E: 289952.16	6808.00
T11	TOE	N: 433074.58 E: 289983.50	6807.82
T12	TOE	N: 433088.99 E: 290027.59	6807.17
T13	TOE	N: 433097.07 E: 290076.91	6807.11
T14	TOE	N: 433090.28 E: 290127.88	6807.02

POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
T15	TOE	N: 433112.25 E: 290141.80	6806.65
T16	TOE	N: 433122.73 E: 290133.00	6807.21
T17	TOE	N: 433128.10 E: 290128.49	6807.21
T18	TOP	N: 433162.94 E: 290099.19	6811.50
T19	TOP	N: 433158.95 E: 289947.53	6811.50
T20	TOP	N: 433117.91 E: 289908.59	6811.50
T21	TOP	N: 433097.92 E: 289909.12	6811.50
T22	TOP	N: 433058.98 E: 289950.16	6811.50
T24	TOP	N: 433061.40 E: 290042.26	6811.50
T25	TOP	N: 433061.88 E: 290045.29	6811.50
T26	TOP	N: 433079.07 E: 290135.52	6811.50
T27	TOP	N: 433086.29 E: 290144.67	6811.50
T28	TOP	N: 433103.29 E: 290154.65	6811.50
T29	TOP / BERM	N: 433174.93 E: 290098.88	6811.50
T30	TOP / BERM	N: 433170.94 E: 289947.21	6811.50
T31	TOP / BERM	N: 433117.60 E: 289896.60	6811.50

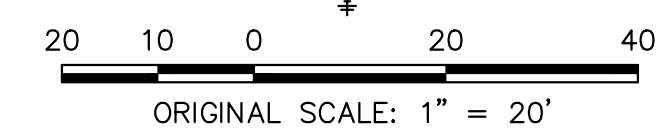
POND GRADING PLAN			
STRUCTURE NAME	DESCRIPTION	NORTHING/EASTING	ELEVATION
T32	TOP / BERM	N: 433097.60 E: 289897.12	6811.50
T33	TOP / BERM	N: 433046.99 E: 289950.47	6811.50
T34	TOP / BERM	N: 433047.44 E: 289967.85	6811.50
T36	TOP / BERM	N: 433049.41 E: 290042.57	6811.50
T37	TOP / BERM	N: 433050.35 E: 290048.63	6811.50
T38	TOP / BERM	N: 433067.22 E: 290137.44	6811.50
T39	TOP / BERM	N: 433081.68 E: 290155.75	6811.50
T40	TOP / BERM	N: 433095.86 E: 290164.08	6811.50
TC1	TC CL FLOWLINE	N: 433125.41 E: 290130.74	6802.90
TC2	TC CL FLOWLINE	N: 433111.89 E: 290112.94	6805.84
TC3	TC CL FLOWLINE	N: 433107.82 E: 290101.37	6805.90
TC4	TC CL FLOWLINE	N: 433103.45 E: 289935.16	6806.73

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N52°46'09"E	22.36'
L4	N88°29'38"E	166.31'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	35°43'29"	20.00'	12.47'

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**POND NOTES**  
1. ALL PROPOSED IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.  
2. SEE SHEETS 3-6 FOR PROPOSED STORM SEWER DESIGN.



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.  
**LYR**  
1172 GREENLAND FOREST DRIVE  
MONUMENT, CO 80106  
SCOTT SMITH  
(719) 499-7764

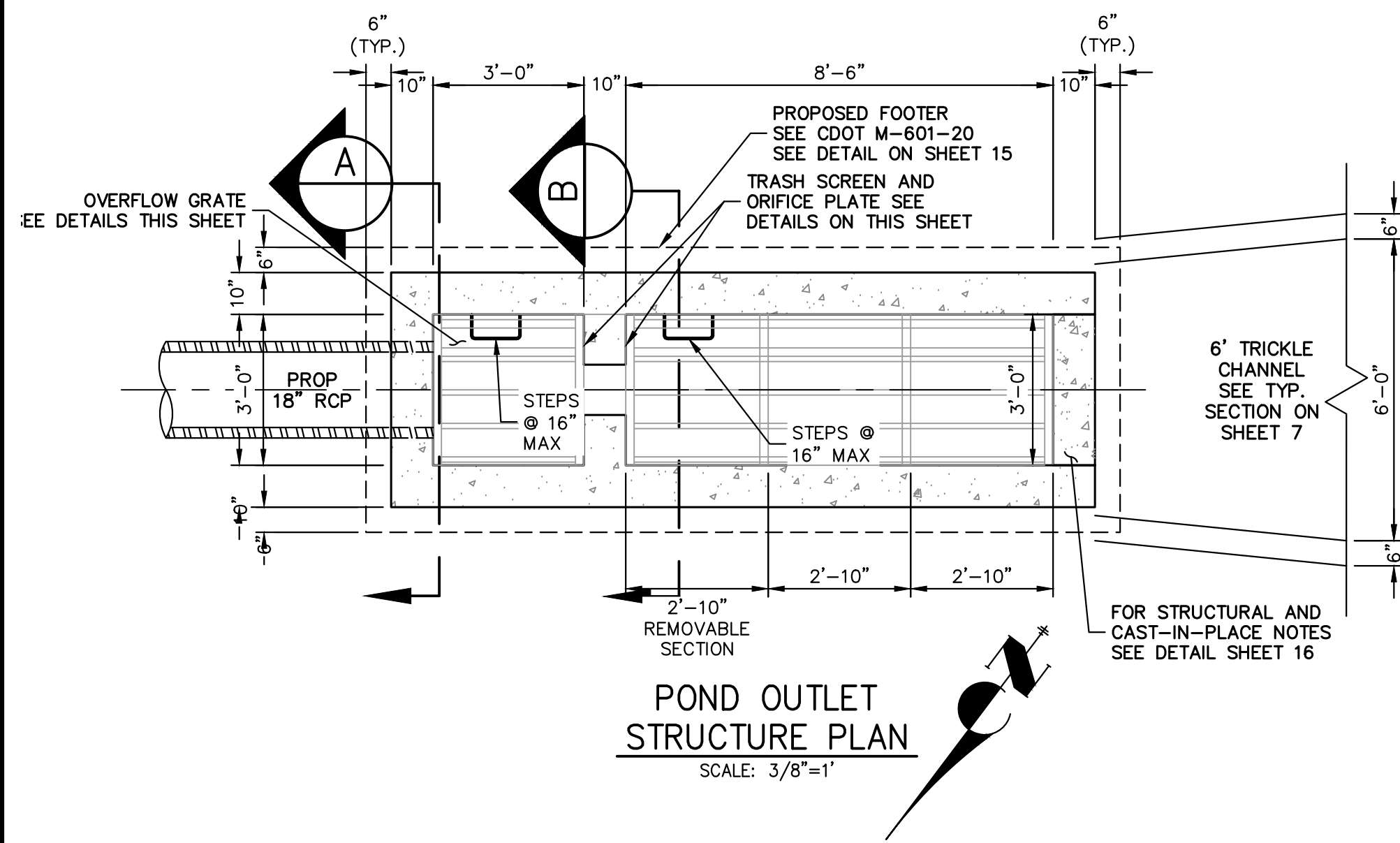
**J.R. ENGINEERING**  
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Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

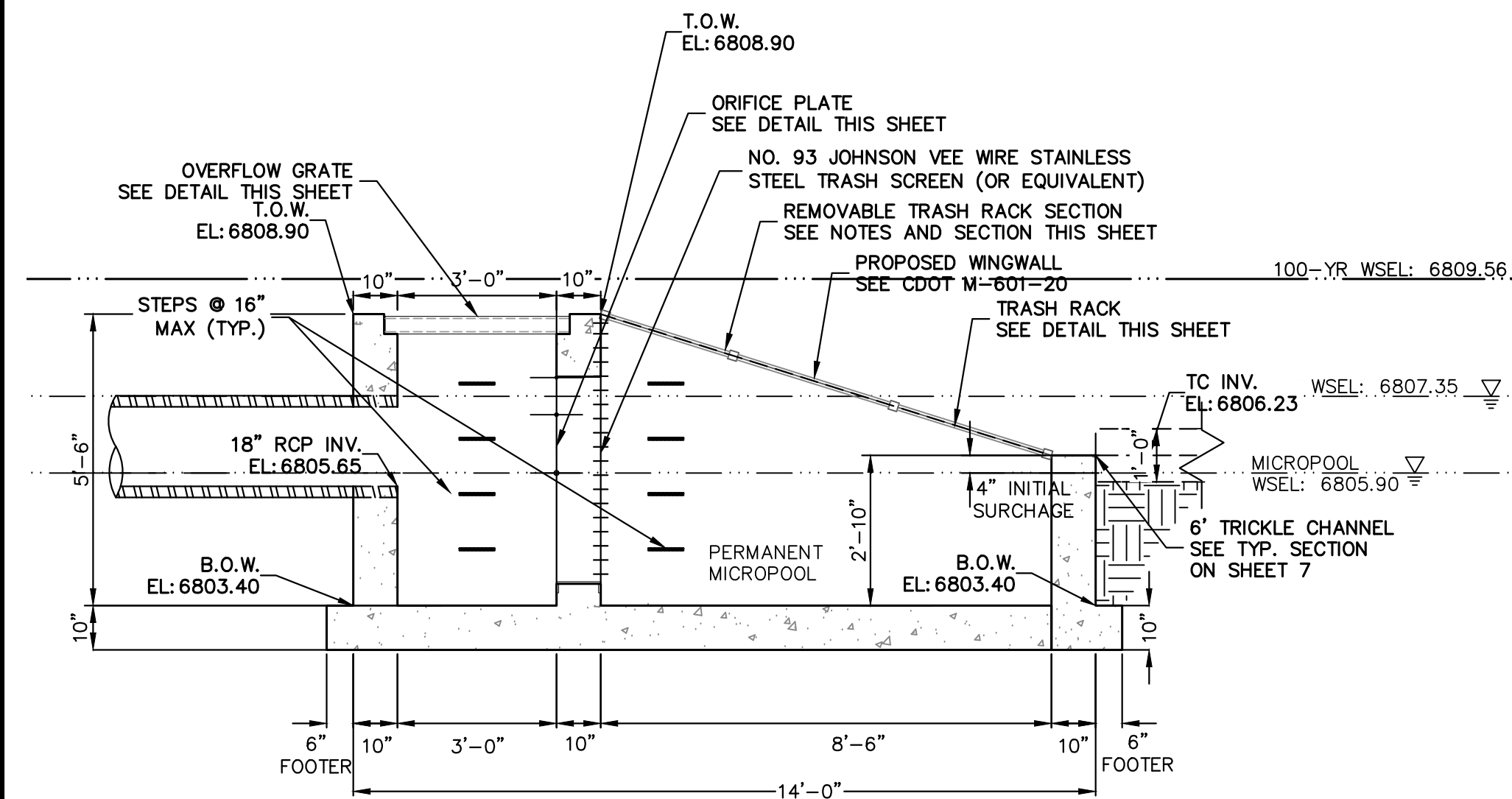
LAZY Y AND ROCKING J SUBDIVISION  
POND A PLANS  
SHEET 7 OF 16  
JOB NO. 25228.00



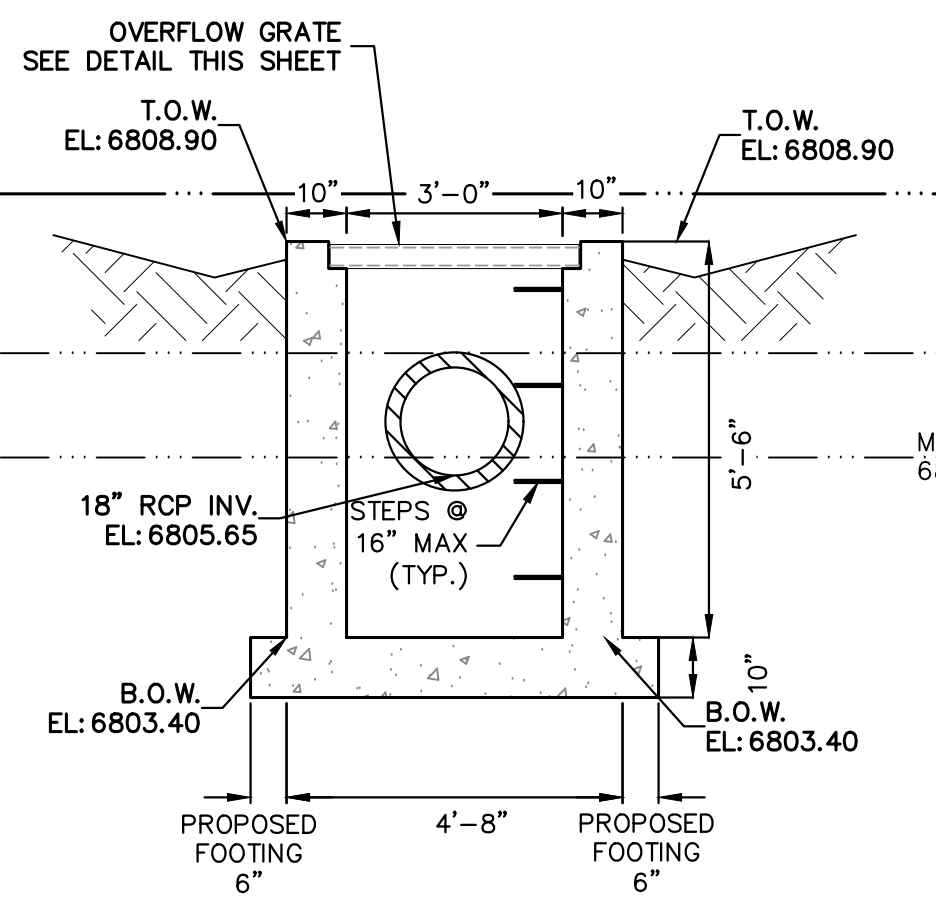




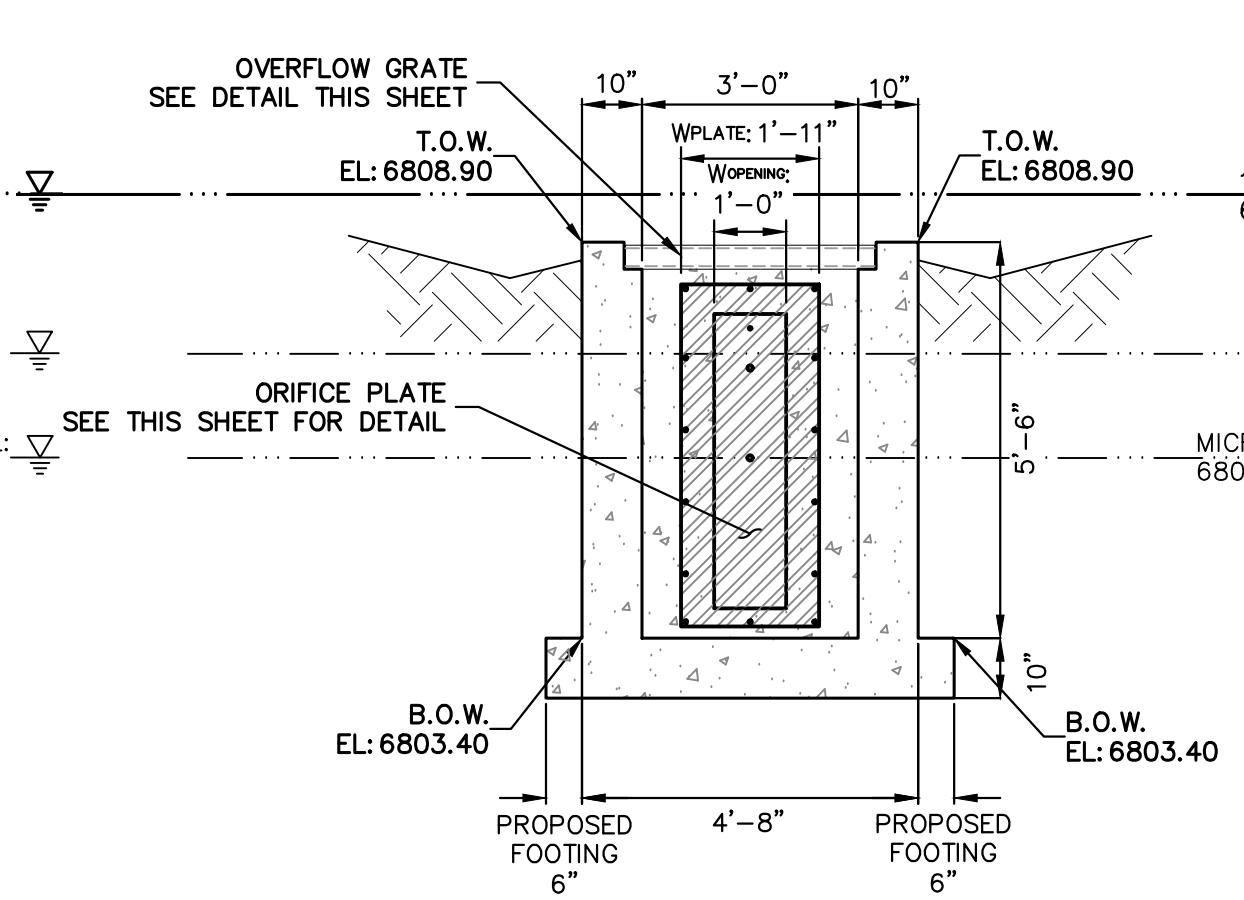
**POND OUTLET STRUCTURE PLAN**  
SCALE: 3/8"=1'



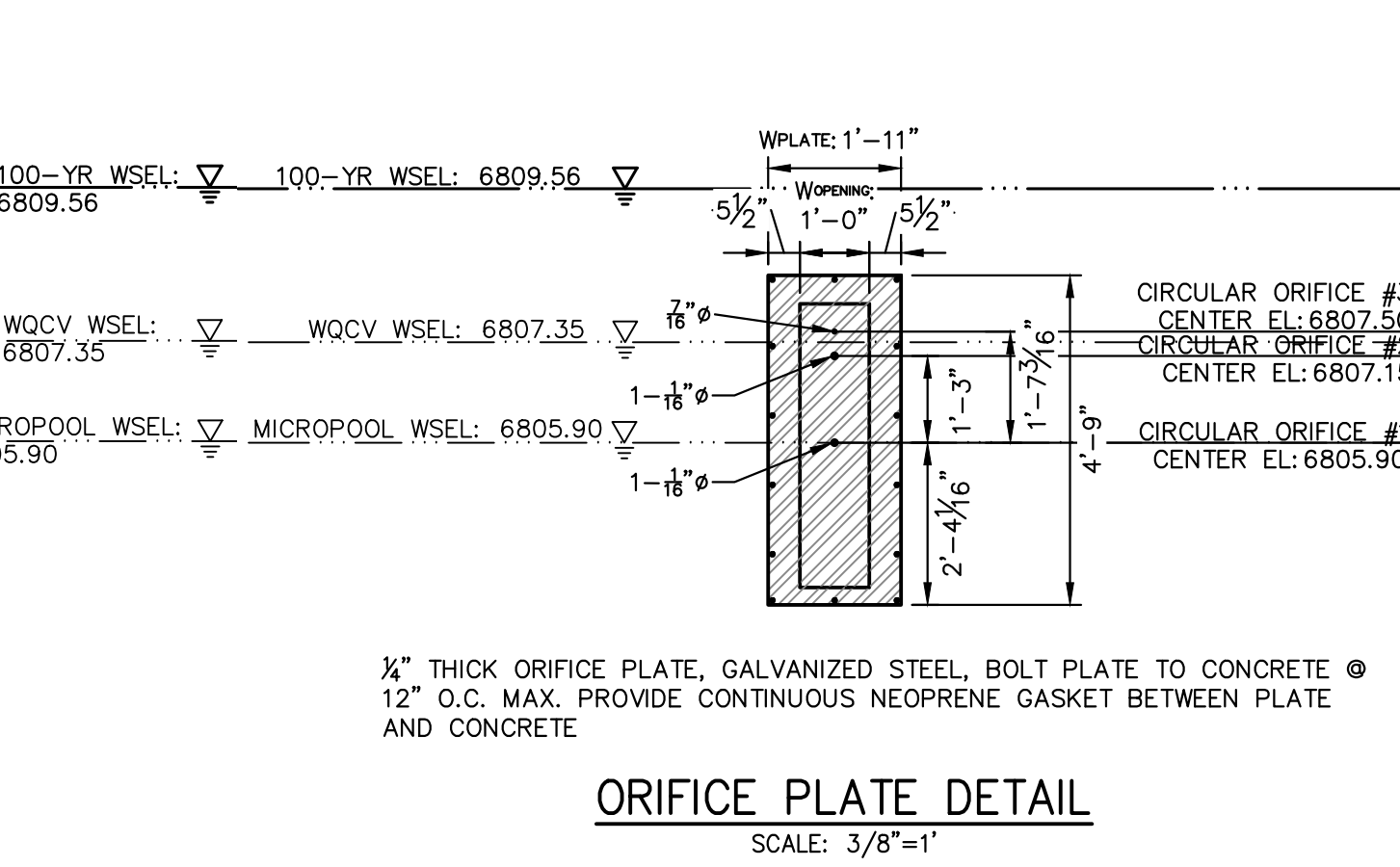
**POND OUTLET STRUCTURE PROFILE**  
SCALE: 3/8"=1'



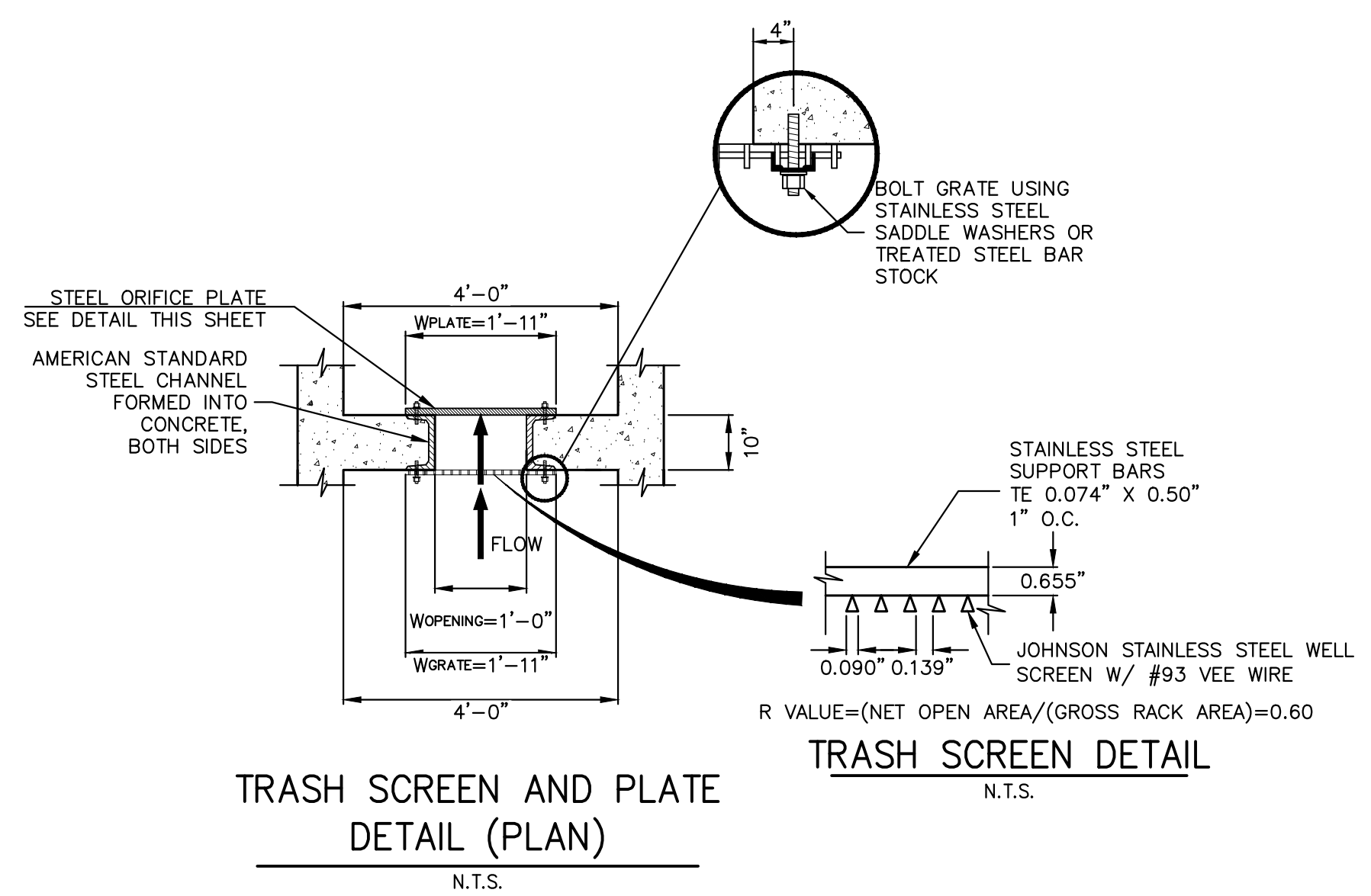
**A-A SECTION**  
SCALE: 3/8"=1'



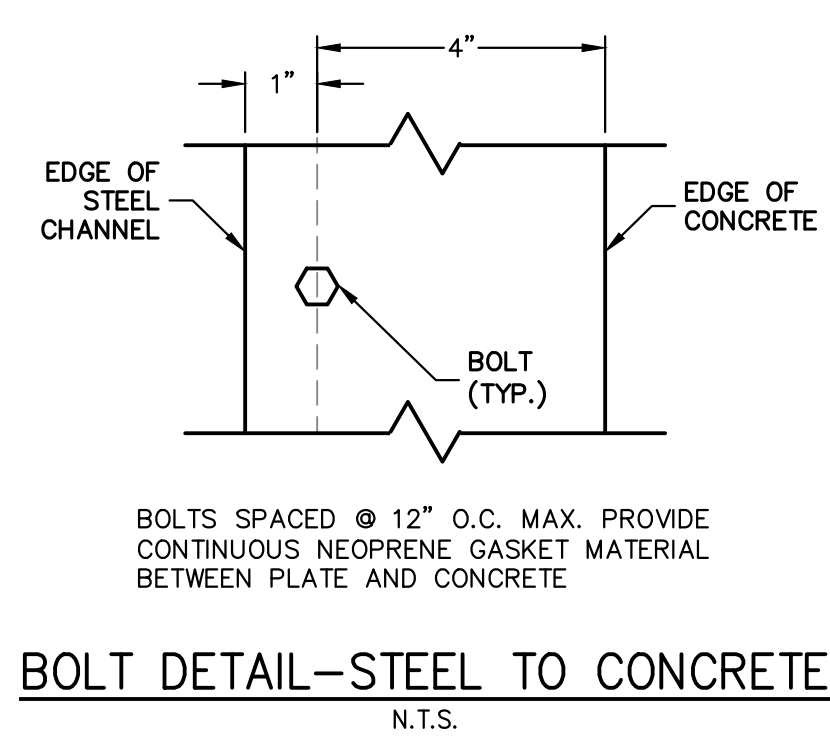
**B-B SECTION**  
SCALE: 3/8"=1'



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



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



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



**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

- 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, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
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MONUMENT, CO 80106  
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Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	DATE	BY

H-SCALE: 3/8"=1'  
V-SCALE: 3/8"=1'  
DATE: 01/29/26  
DESIGNED BY: GAG  
DRAWN BY: TAU  
CHECKED BY: 

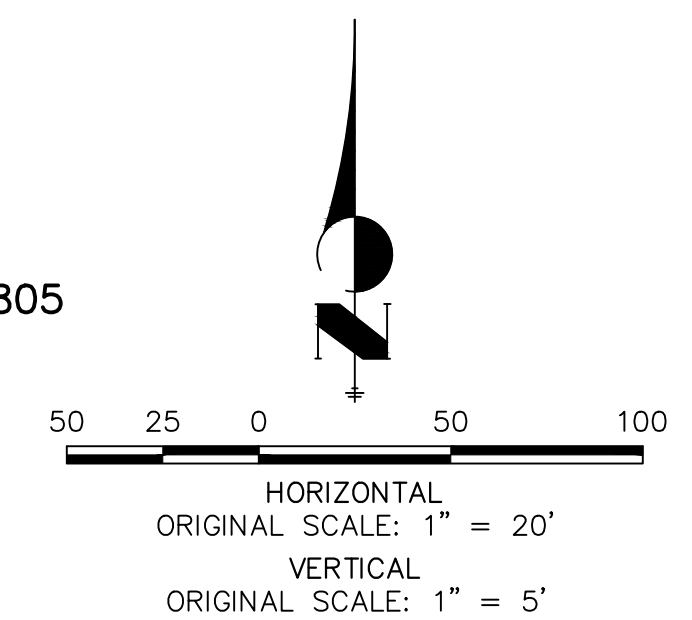
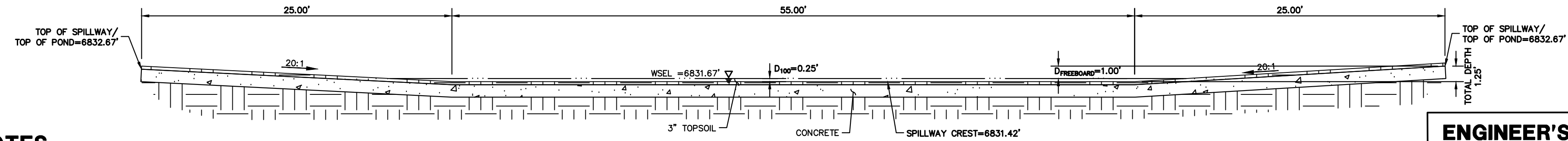
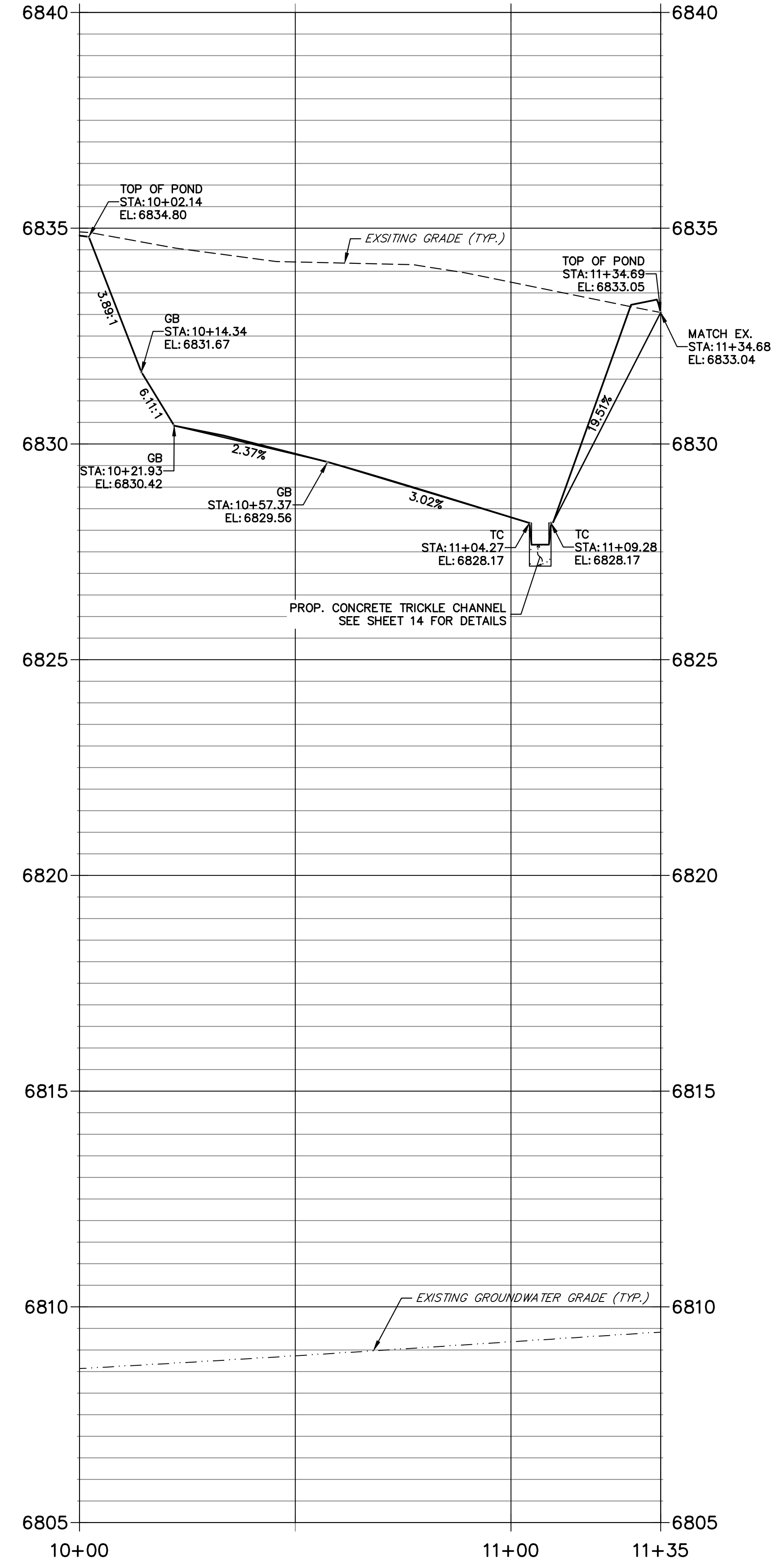
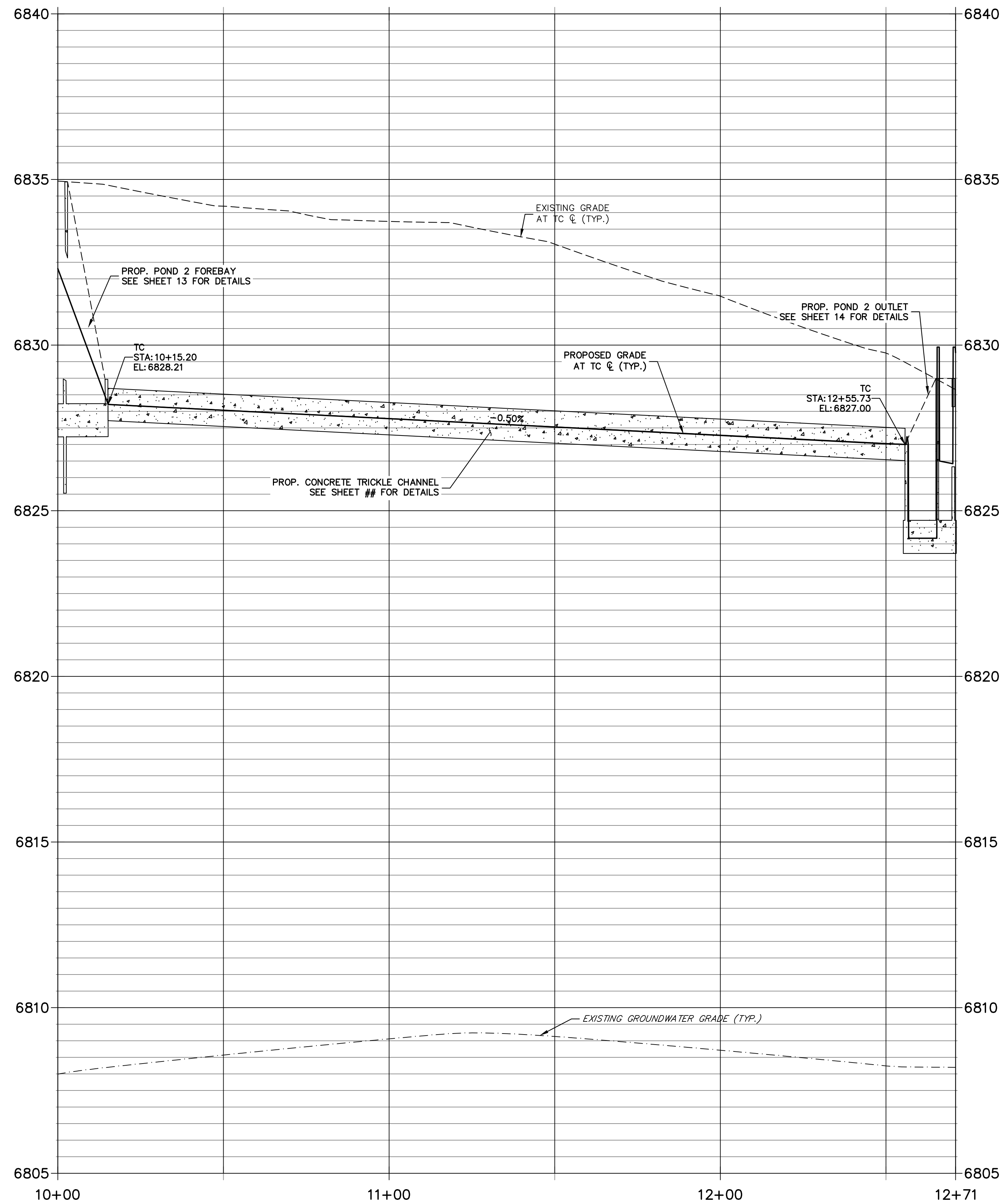
LAZY Y AND ROCKING J  
SUBDIVISION  
POND A OUTLET

SHEET 10 OF 16  
JOB NO. 25228.00



**POND B TRICKLE CHANNEL PROFILE  
STA 10+00.00 TO 12+71.00**

**POND B SECTION A-A PROFILE  
STA 10+00.00 TO 11+34.69**



**POND NOTES**

1. ALL PROPOSED IMPROVEMENTS ARE PRIVATE UNLESS OTHERWISE NOTED.
2. SEE SHEETS 3-6 FOR PROPOSED STORM SEWER DESIGN.

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.

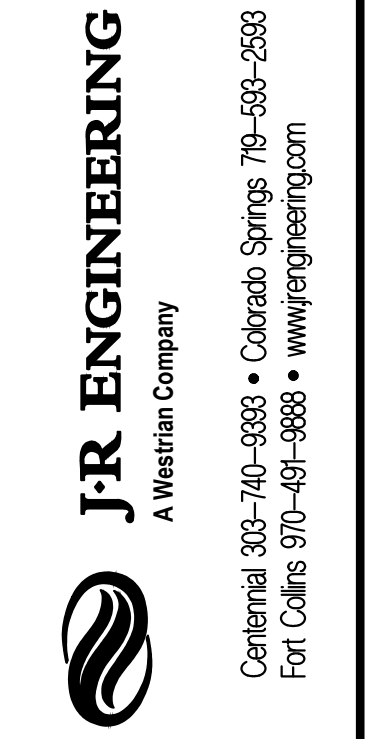


**ENGINEER'S STATEMENT**

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

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

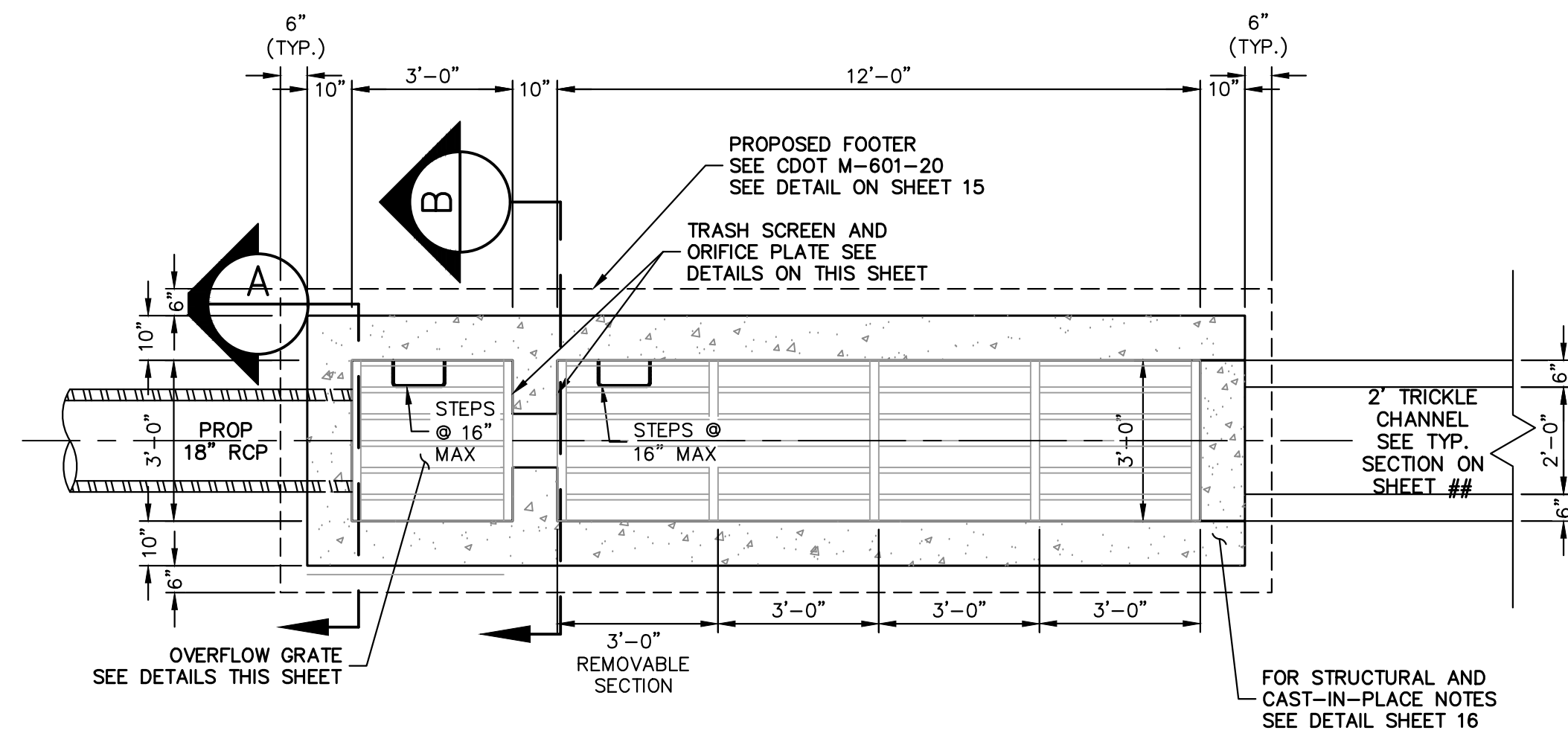
PREPARED FOR  
 LVR  
 1172 GREENLAND FOREST DRIVE  
 MONUMENT, CO 80106  
 SCOTT SMITH  
 (719) 499-7764



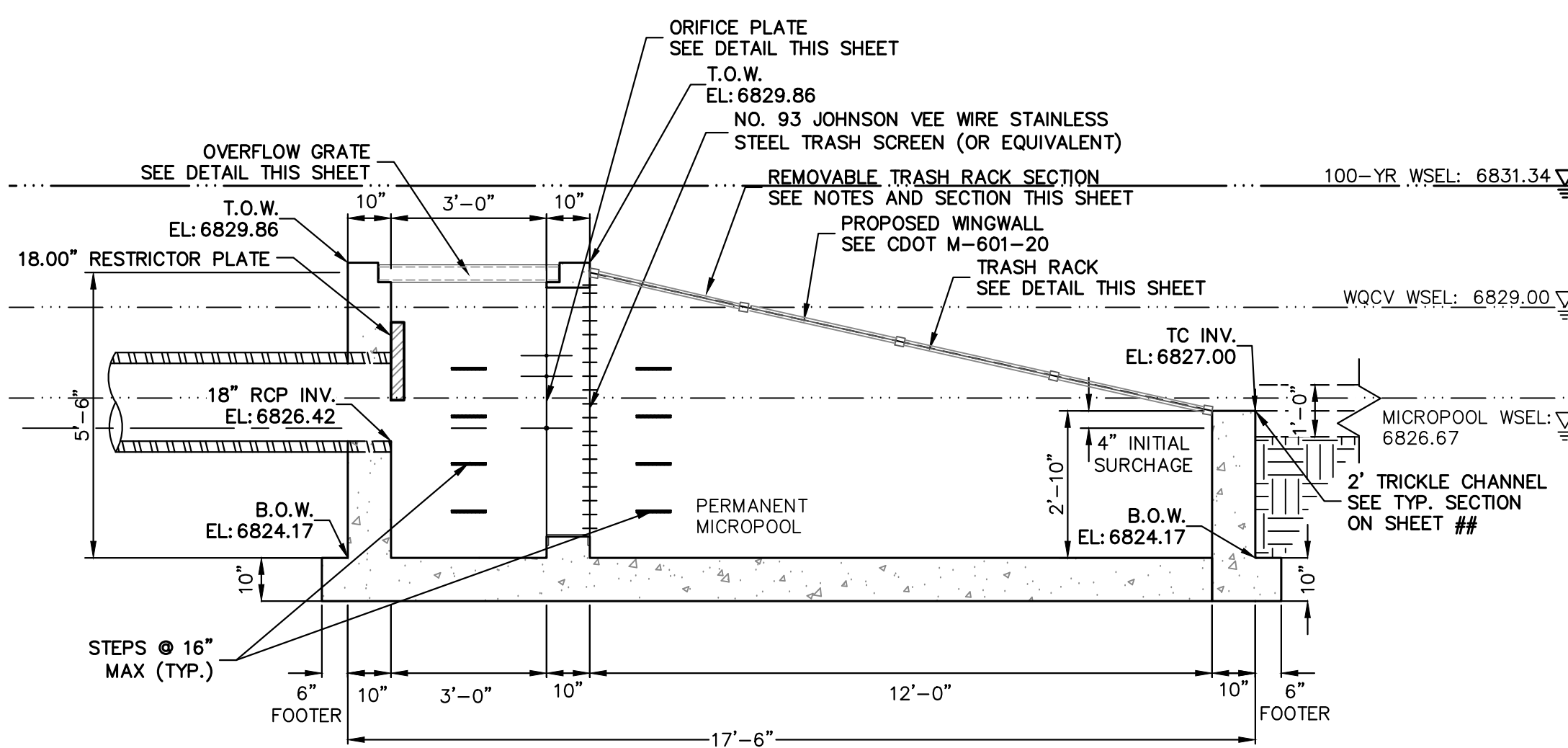
BY	DATE	No.	REVISION

LAZY Y AND ROCKING J SUBDIVISION  
 POND B PLANS  
 SHEET 12 OF 16  
 JOB NO. 25228.00

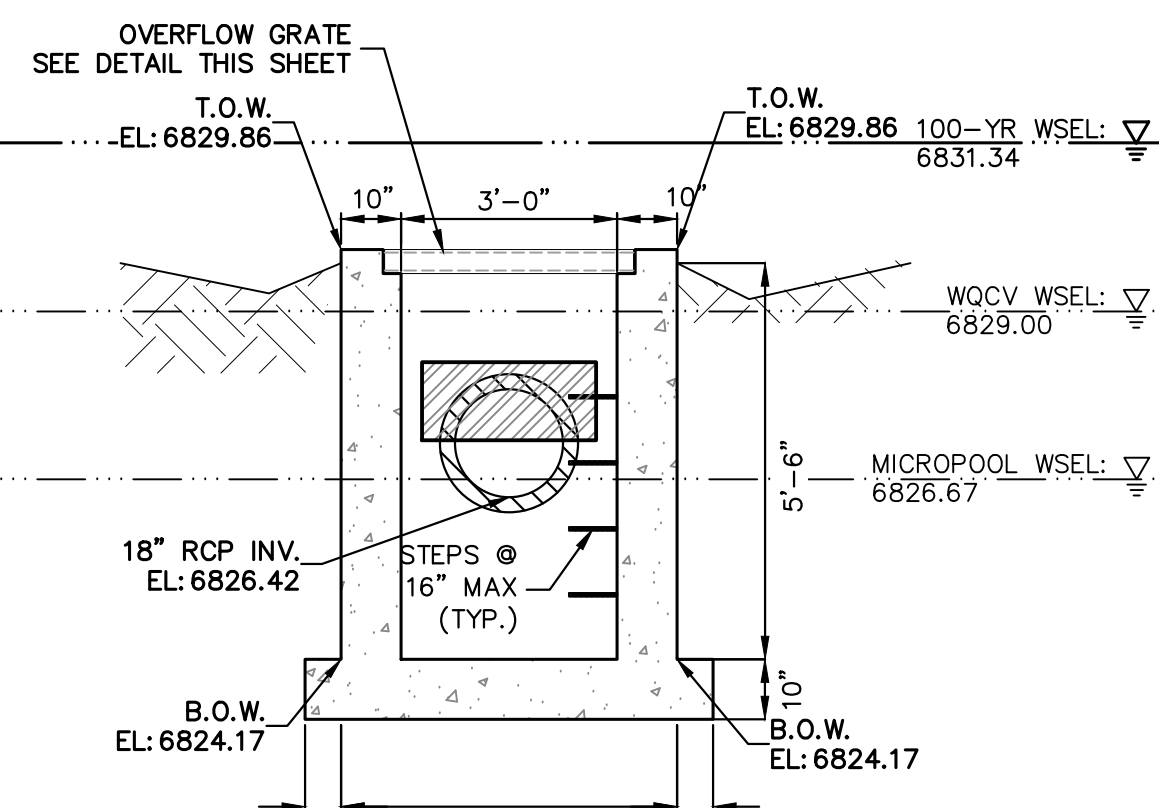




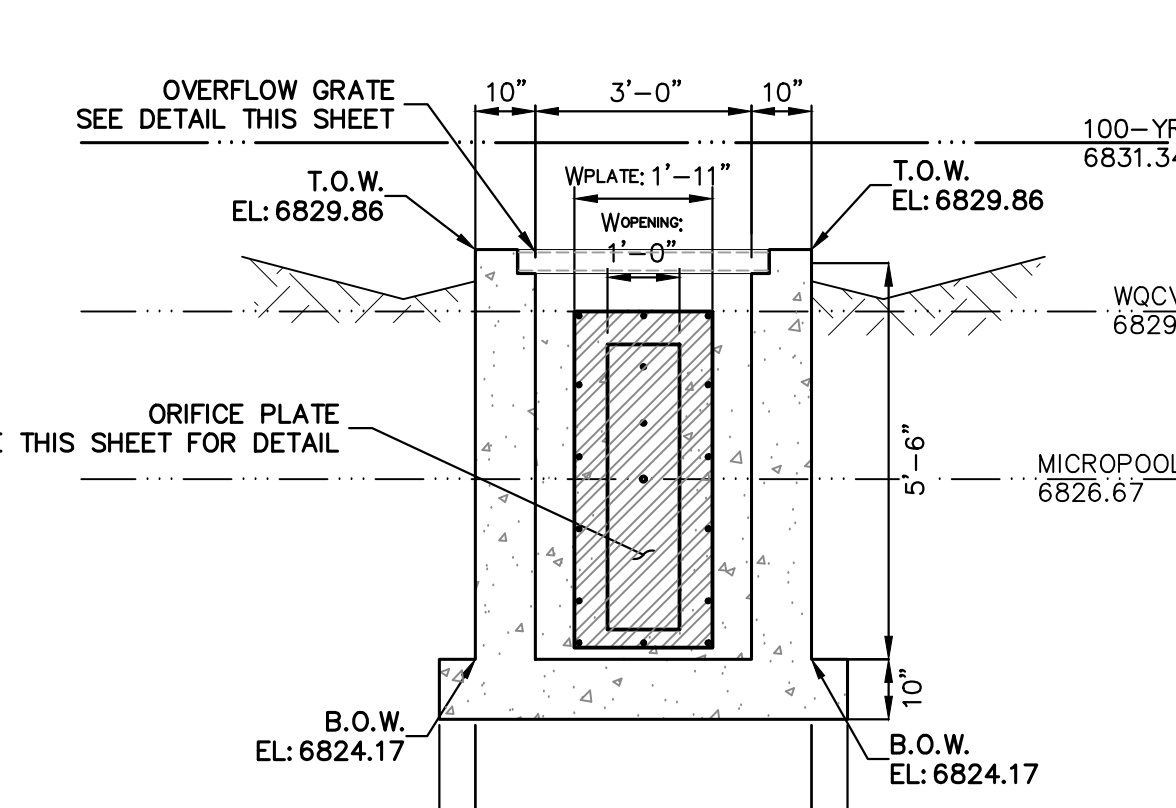
**POND OUTLET STRUCTURE PLAN**  
SCALE: 3/8"=1'



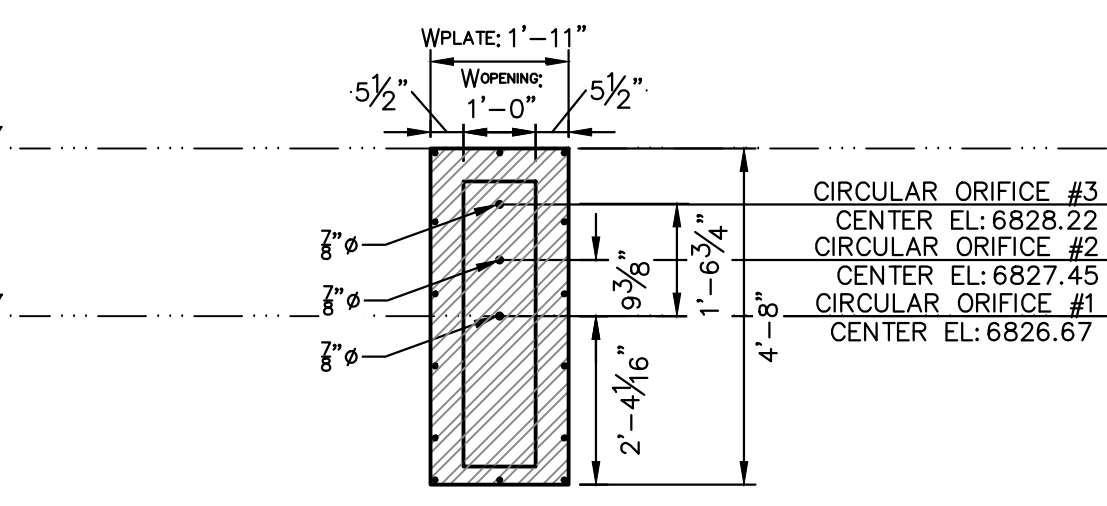
**POND OUTLET STRUCTURE PROFILE**  
SCALE: 3/8"=1'



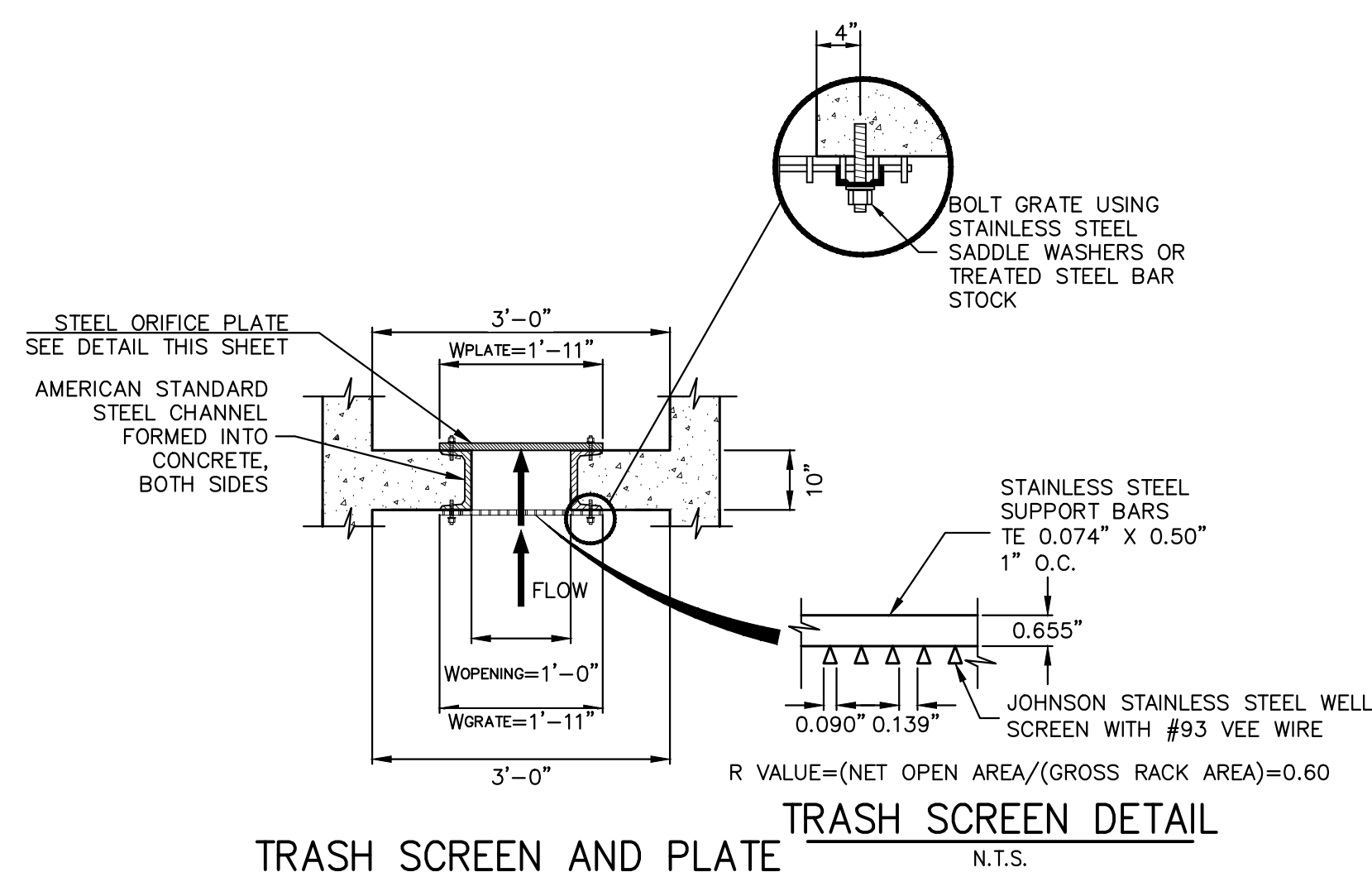
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SCALE: 3/8"=1'



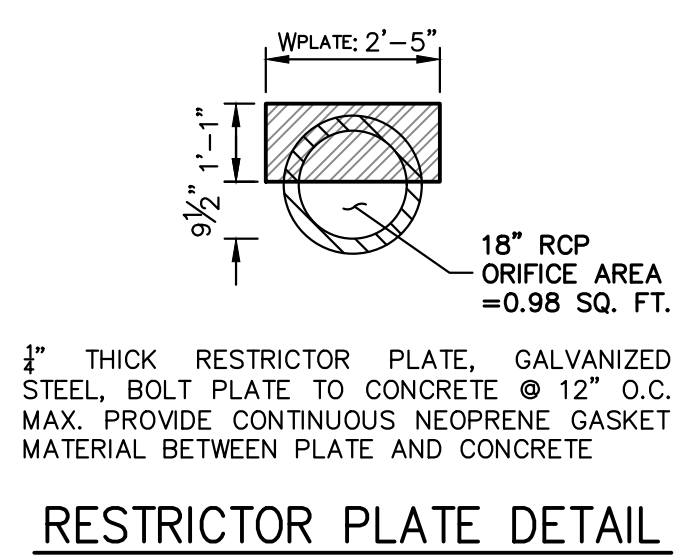
**B-B SECTION**  
SCALE: 3/8"=1'



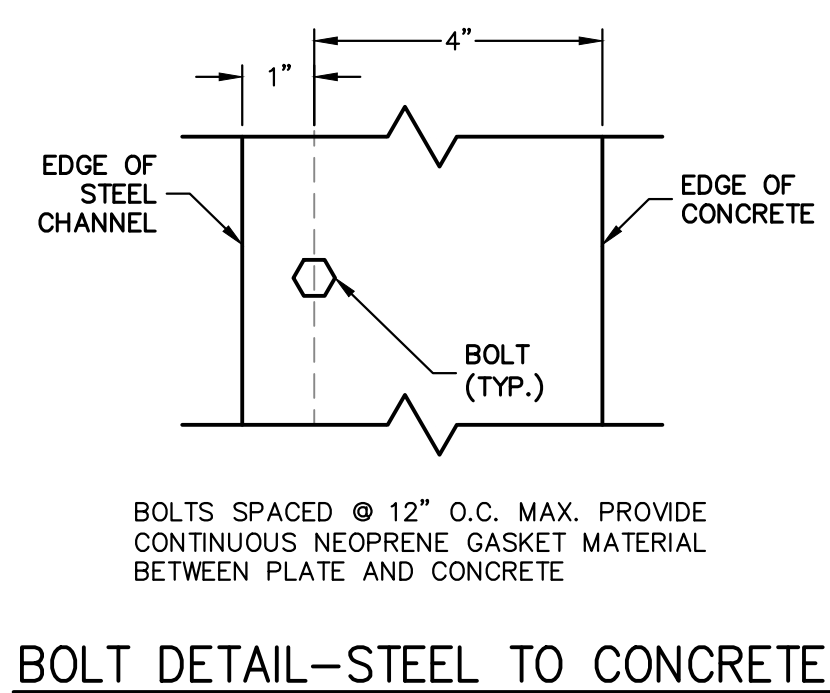
**ORIFICE PLATE DETAIL**  
SCALE: 3/8"=1'



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



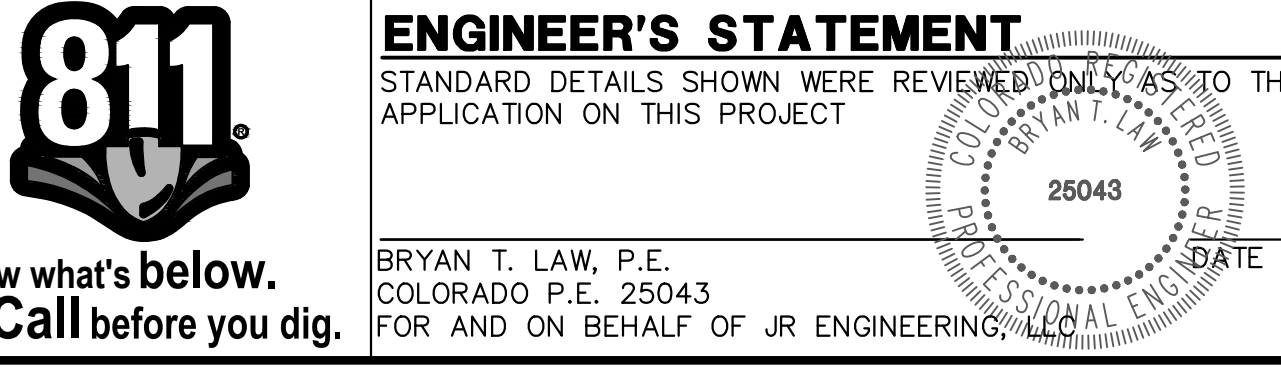
**RESTRICTOR PLATE DETAIL**  
SCALE: 3/8"=1'



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



**ENGINEER'S STATEMENT**  
STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT  
BRYAN T. LAW, P.E.  
COLORADO P.E. 25043  
FOR AND ON BEHALF OF JR ENGINEERING  
DATE



Know what's below.  
Call before you dig.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.  
PREPARED FOR  
LYR  
1172 GREENLAND FOREST DRIVE  
MONUMENT, CO 80106  
SCOTT SMITH  
(719) 499-7764

**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	3/8"=1'
V-SCALE	3/8"=1'
DATE	01/29/26
DESIGNED BY	GAG
DRAWN BY	TAU
CHECKED BY	

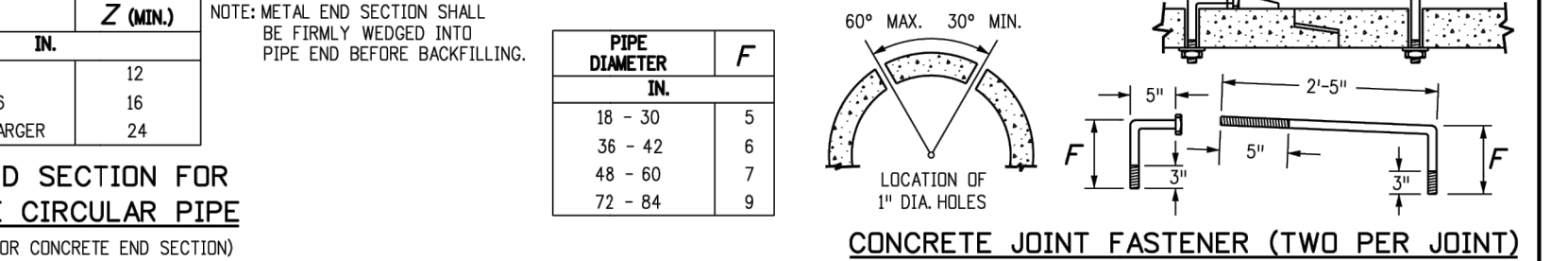
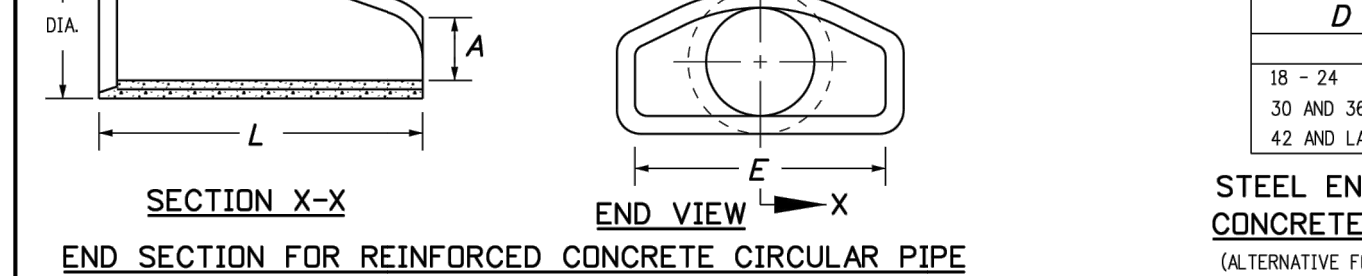
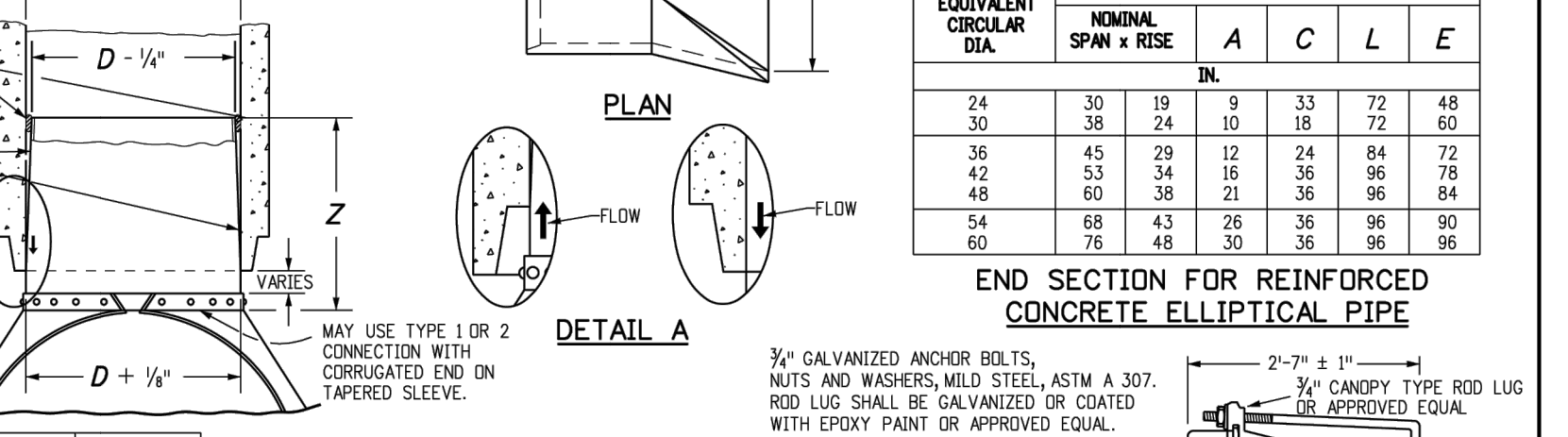
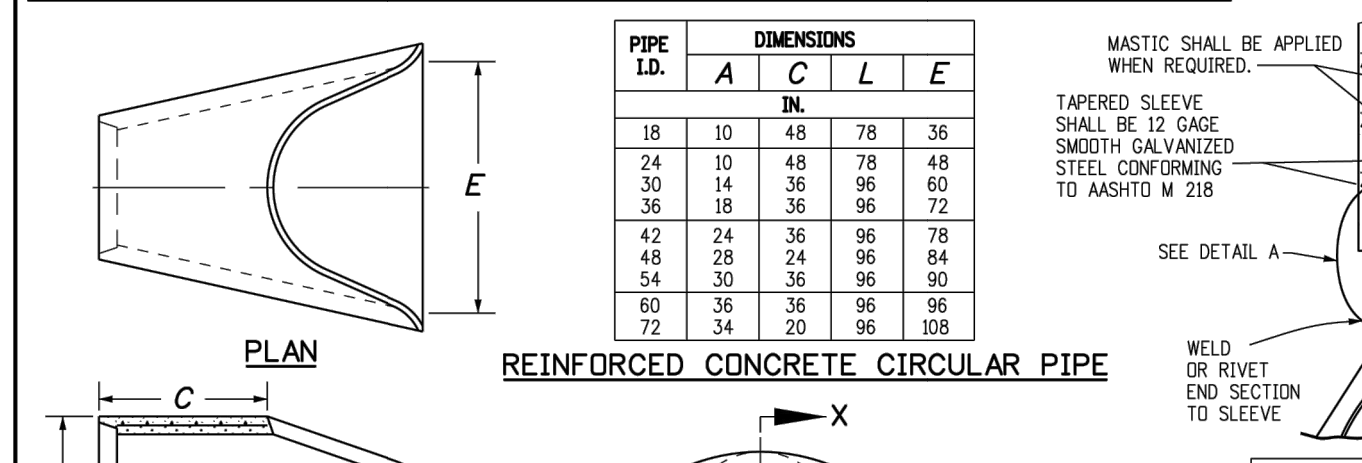
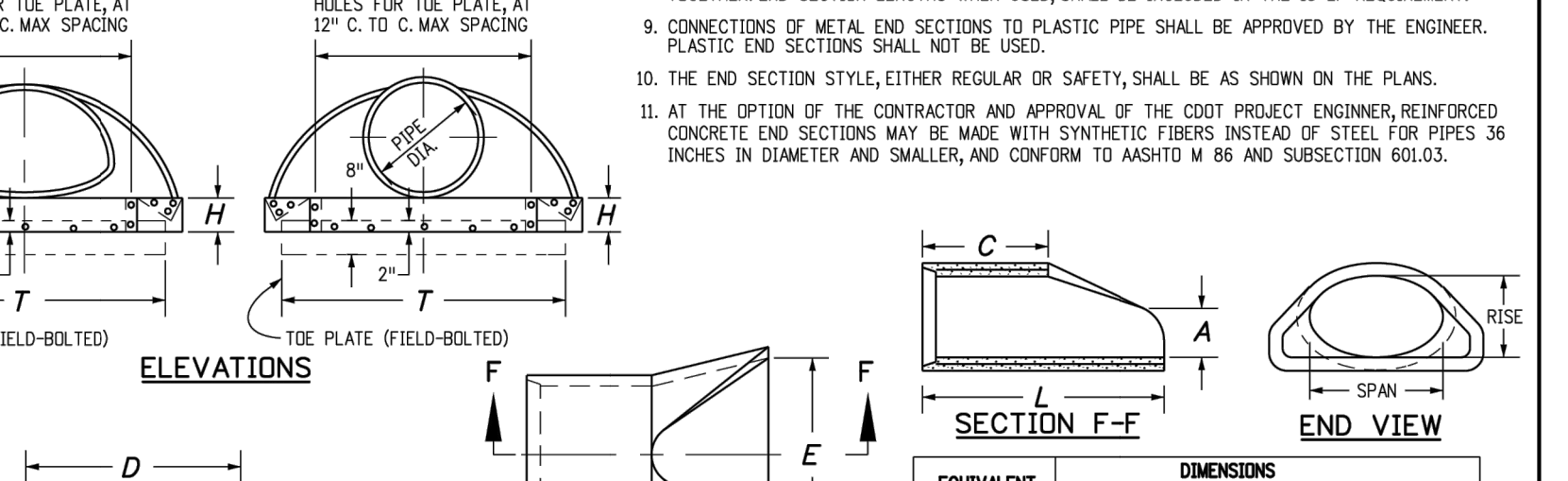
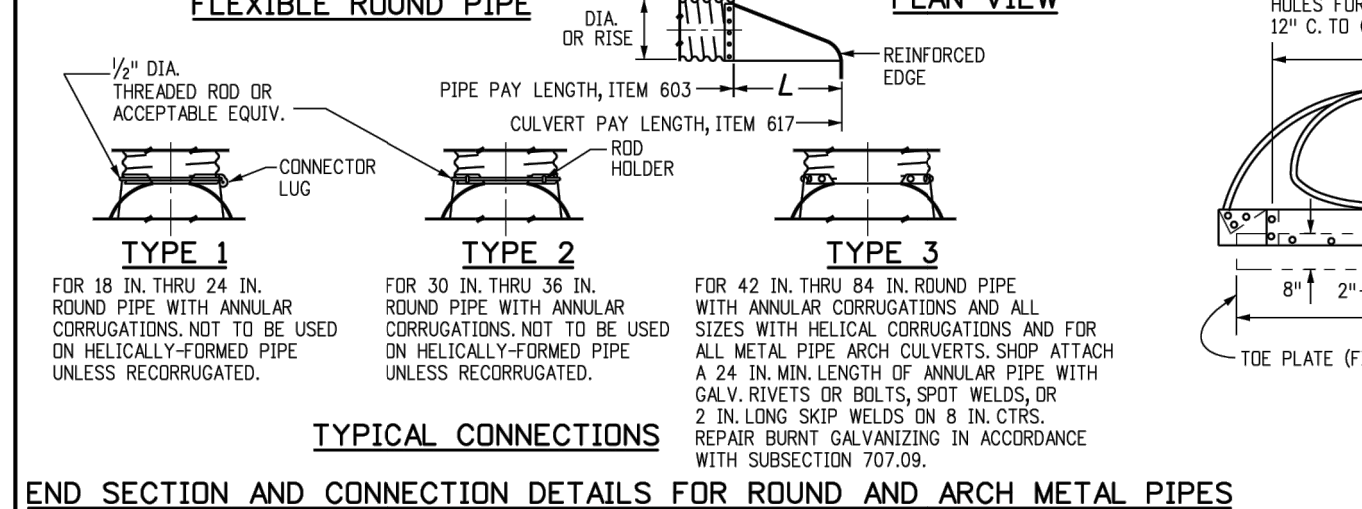
LAZY Y AND ROCKING J  
SUBDIVISION  
POND B OUTLET  
SHEET 14 OF 16  
JOB NO. 25228.00

PIPE DIA.	THICKNESS	DIMENSIONS					
		A	B	H	L	W	T
12	0.064	6	6	6	21	24	34
18	0.064	8	10	6	31	36	46
24	0.064	10	13	6	41	48	58
30	0.079	12	16	8	51	60	70
36	0.079	14	19	9	60	72	84
42	0.109	16	22	11	69	84	106
48	0.109	18	27	12	78	90	112
54	0.109	18	30	12	84	102	124
60	0.109	18	33	12	87	114	136
66	0.109	18	36	12	87	120	142
72	0.109	18	39	12	87	126	154
78	0.109	18	42	12	87	132	162
84	0.109	18	45	12	87	138	168

PIPE ARCH	THICKNESS	DIMENSIONS					
		A	B	H	L	W	T
21 x 15	0.064	7	10	6	23	28	48
24 x 18	0.064	8	12	6	28	36	52
28 x 20	0.064	9	14	6	32	42	58
32 x 24	0.064	10	16	6	38	50	70
35 x 29	0.079	12	18	6	46	70	85
40 x 33	0.109	13	21	9	53	85	103
47 x 38	0.109	18	26	12	63	90	108
54 x 43	0.109	18	30	12	70	102	120
71 x 47	0.109	18	33	12	77	114	132

**GENERAL NOTES**

- DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURERS' CONFIGURATIONS.
- CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
- DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
- THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH ON THE PLANS.
- END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.
- GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH 3/4" IN GALVANIZED NUTS AND WASHERS.
- GALVANIZED STEEL SHALL CONFORM TO ASTM A 118, M 218 OR M 232.
- CONCRETE PIPE JOINT FASTENERS WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED SHALL BE IN ACCORDANCE WITH THE REQUIREMENT.
- CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
- THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.
- AT THE OPTION OF THE CONTRACTOR AND APPROVAL OF THE CDDT PROJECT ENGINEER, REINFORCED CONCRETE END SECTIONS MAY BE MADE WITH SYNTHETIC FIBERS INSTEAD OF STEEL FOR PIPES 36 INCHES IN DIAMETER AND SMALLER, AND CONFORM TO ASTM M 96 AND SUBSECTION 602.03.



**Computer File Information**

Creation Date: 07/31/19  
 Designer: JBK  
 Last Modification Date: 07/31/19  
 Detailer: LTA  
 CAD Ver: MicroStation V8

**Sheet Revisions**

No.	Revision	Comments
(CDDT)		
(CDDT)		
(CDDT)		

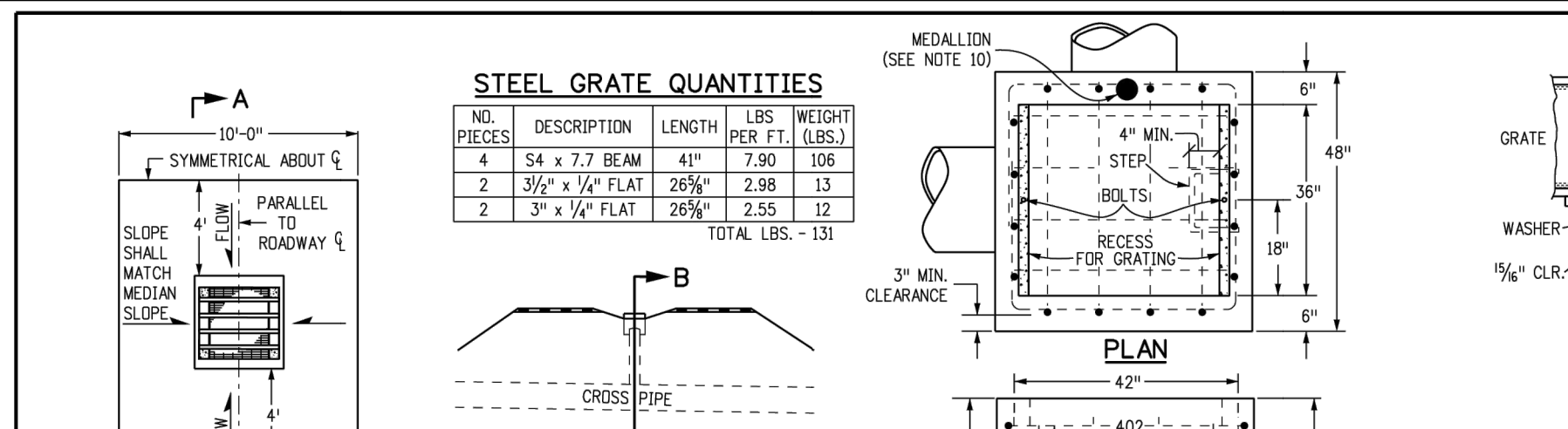
**Colorado Department of Transportation**

2829 West Howard Place  
 CDDT HQ, 3rd Floor  
 Denver, CO 80204  
 Phone: 303-757-9021 FAX: 303-757-9868

**CONCRETE AND METAL END SECTIONS**

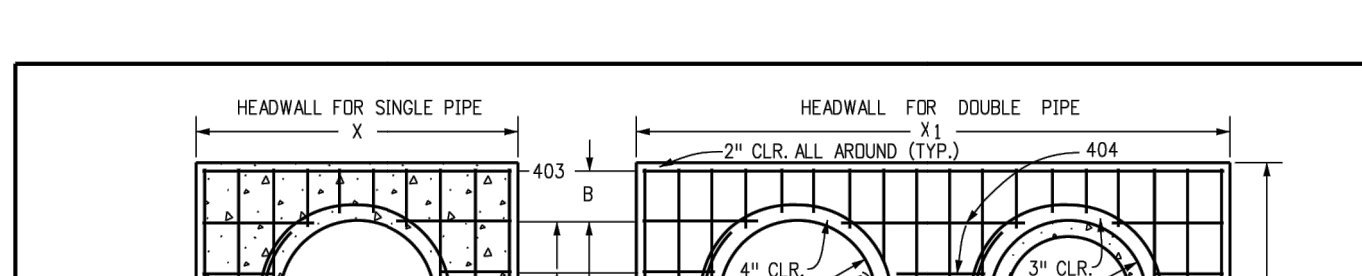
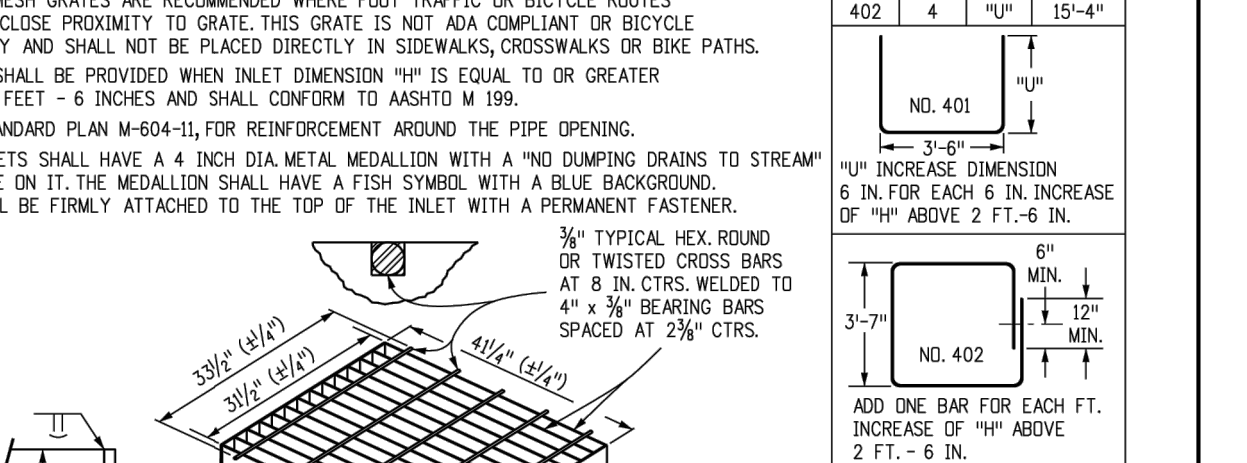
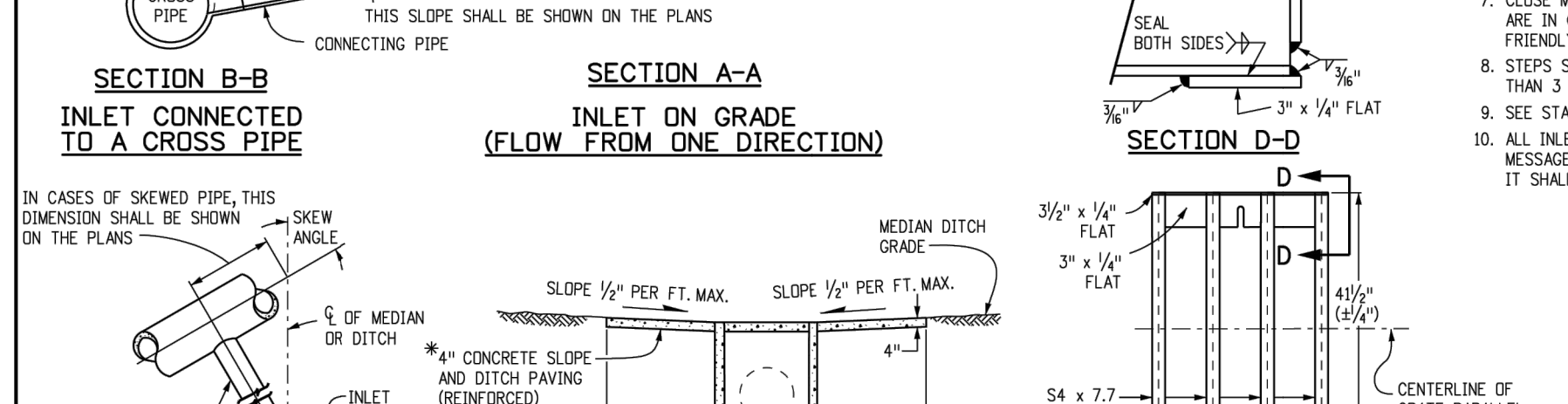
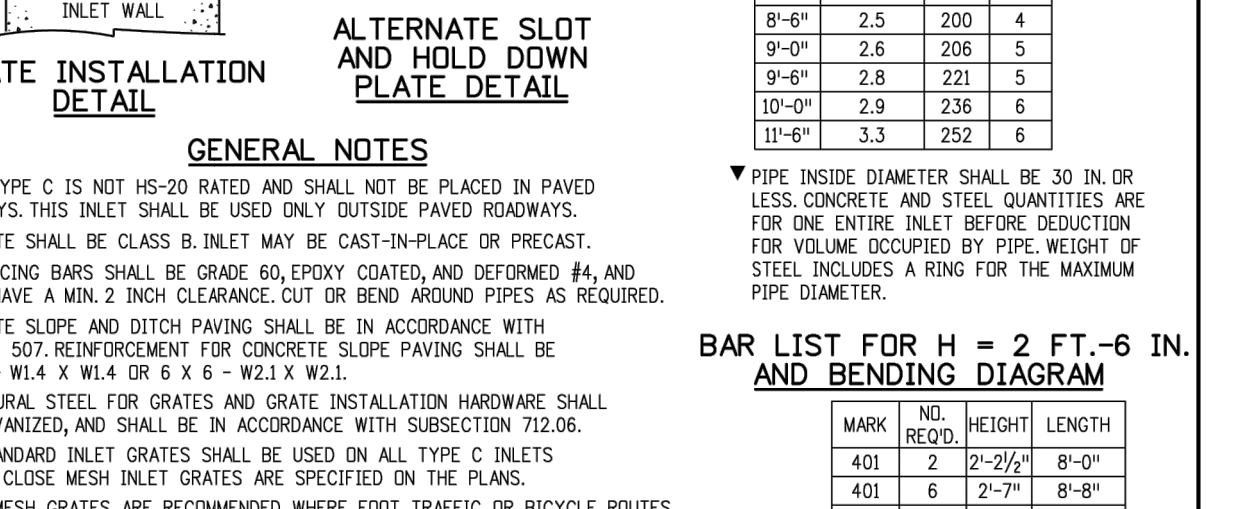
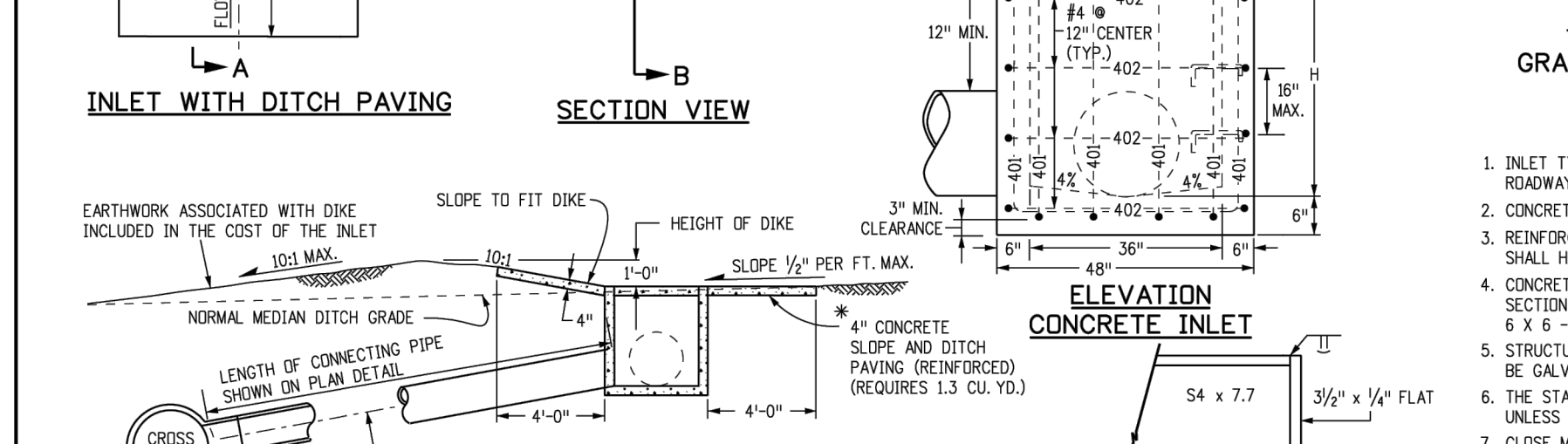
STANDARD PLAN NO. M-603-10  
 Standard Sheet No. 1 of 1

Project Development Branch JBK  
 Issued by the Project Development Branch: July 31, 2019



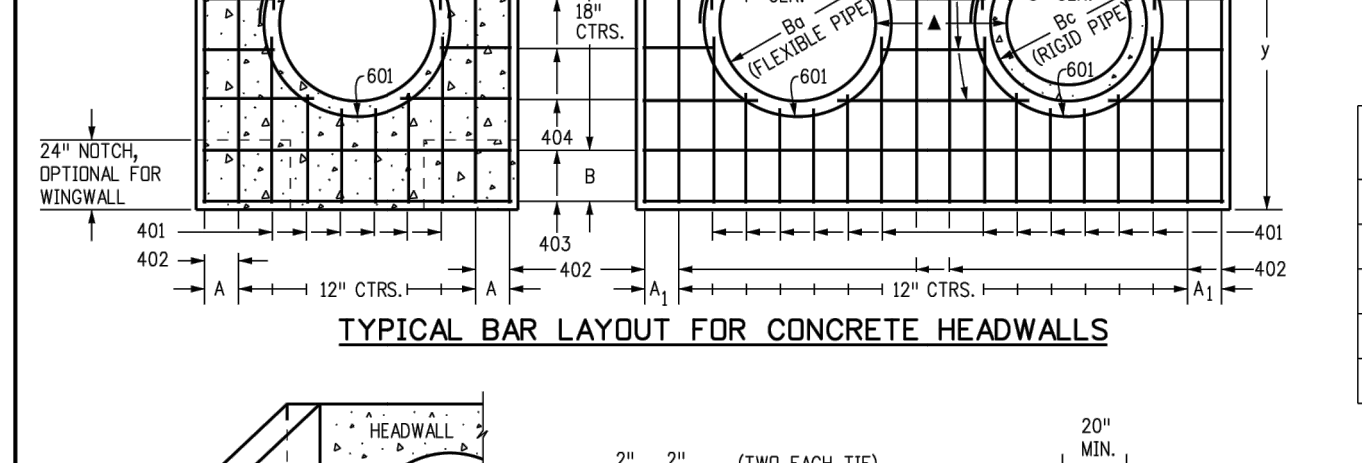
**QUANTITIES FOR ONE INLET**

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. STEPS REQ'D.
2'-0"	1.0	76	0
3'-0"	1.1	81	1
3'-6"	1.2	87	0
4'-0"	1.3	102	1
4'-6"	1.5	117	2
5'-0"	1.6	123	2
5'-6"	1.7	138	2
6'-0"	1.9	143	3
6'-6"	2.0	159	3
7'-0"	2.1	164	3
7'-6"	2.2	180	4
8'-0"	2.4	185	4
8'-6"	2.5	200	4
9'-0"	2.6	206	5
9'-6"	2.8	221	5
10'-0"	2.9	236	6
11'-0"	3.3	252	6



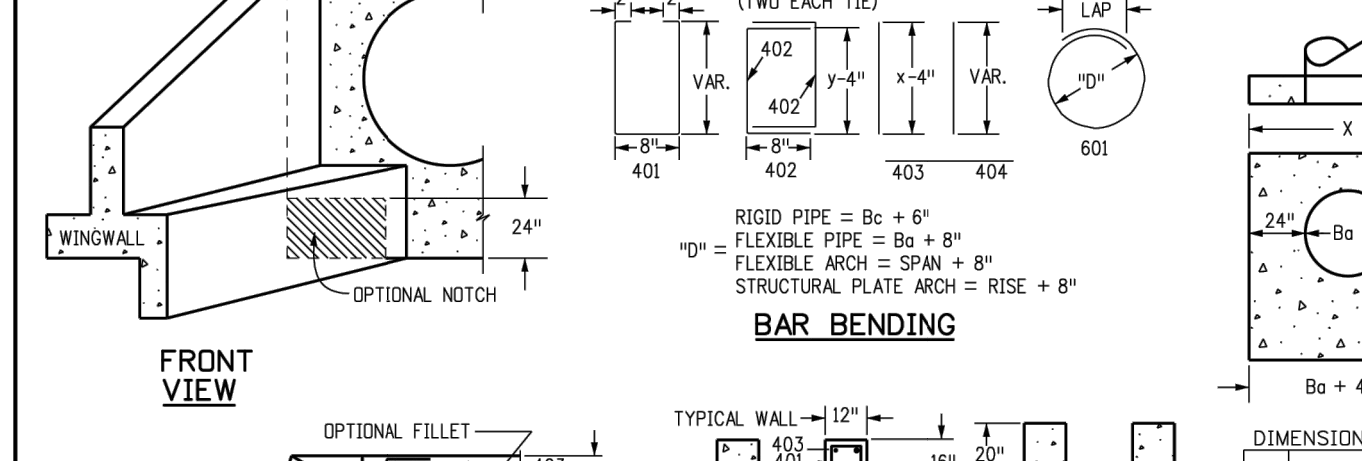
**GENERAL NOTES**

- 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.



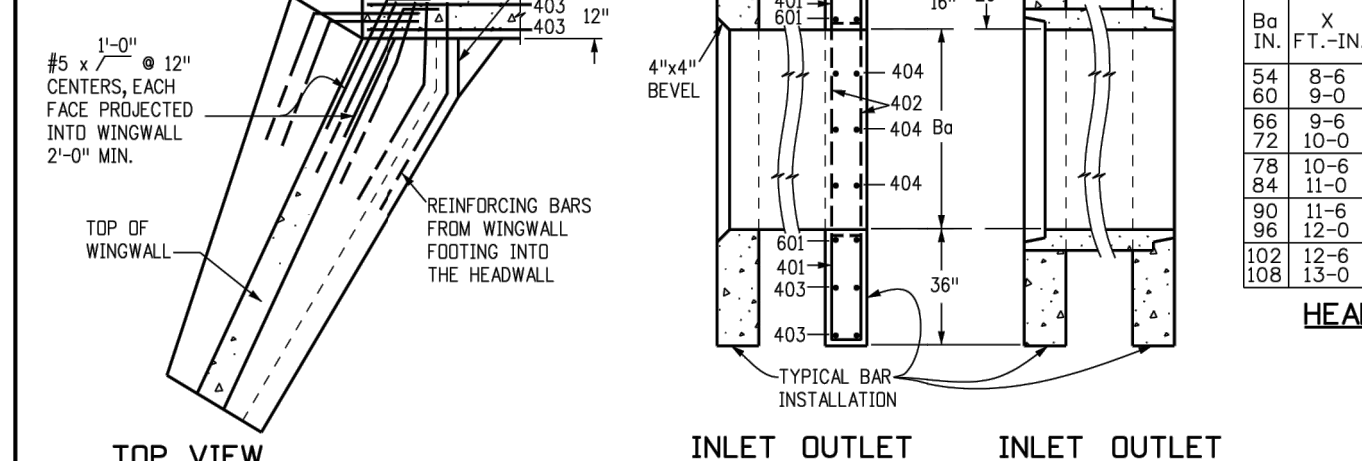
**HEADWALL FOR RIGID ROUND PIPE**

EQUIV. CONCRETE (CU. YD.)	SPAN (IN.)	RISE (IN.)	DIMENSIONS (IN.)						CONCRETE (CU. YD.)		STEEL (LBS.)	
			X	A	X1	A1	Y	B	SQ. FT.	DBL.	SQ. FT.	DBL.
54	65	8-9	8 1/2	15-6	7	10-2	17	20	2.12	3.55	209	364
60	72	9-6	7	17-0	10	9-8	11	21	2.35	3.89	236	414
66	79	10-3	11 1/2	18-6	7	10-2	14	22	2.60	4.44	249	453
72	86	11-0	10	20-0	10	11-2	17	23	2.85	4.91	270	506
78	93	11-9	8 1/2	21-3	11	11-2	11	24	3.11	5.29	308	527
84	100	12-6	7	22-6	7	11-8	14	25	3.38	5.68	333	572
90	107	13-3	11 1/2	23-9	8 1/2	12-2	17	26	3.64	6.08	355	593
96	114	14-0	10	25-0	10	12-8	11	27	3.94	6.48	379	649
102	121	14-9	8 1/2	26-3	11 1/2	13-2	14	28	4.24	6.89	400	664
108	128	15-6	7	27-6	7	13-8	17	29	4.54	7.30	424	707



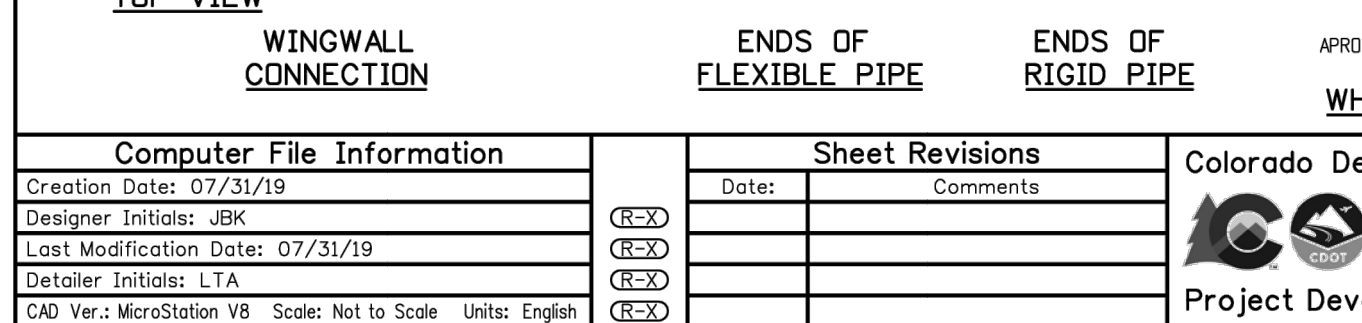
**HEADWALL FOR FLEXIBLE PIPE ARCH**

EQUIV. CONCRETE (CU. YD.)	SPAN (IN.)	RISE (IN.)	DIMENSIONS (IN.)						CONCRETE (CU. YD.)		STEEL (LBS.)	
			X	A	X1	A1	Y	B	SQ. FT.	DBL.	SQ. FT.	DBL.
72	81	58	10-9	8 1/2	20-6	7	9-3	17 1/2	2.72	5.10	250	467
78	87	63	11-3	11 1/2	21-6	7	9-7	18 1/2	2.85	5.34	275	531
84	95	67	11-9	8 1/2	22-0	9	9-11	19 1/2	3.08	5.79	290	547
90	103	71	12-7	7 1/2	24-2	11	10-3	21	3.30	6.21	321	591
96	112	75	13-4	12	25-8	10-7	10 1/2	22 1/2	3.52	6.65	314	606
102	117	79	13-9	8 1/2	26-8	9	10-11	19 1/2	3.63	6.86	356	672
108	128	83	14-8	8	28-4	12	11-3	21 1/2	3.96	7.51	378	699



**HEADWALL FOR FLEXIBLE ROUND PIPE**

EQUIV. CONCRETE (CU. YD.)	SPAN (IN.)	RISE (IN.)	DIMENSIONS (IN.)						CONCRETE (CU. YD.)		STEEL (LBS.)	
			X	A	X1	A1	Y	B	SQ. FT.	DBL.	SQ. FT.	DBL.
54	6-8	7	15-3	11 1/2	8-10	15	219	3.81	2.11	358		
60	9-0	10	16-6	9 1/2	9-11	238	4.25	2.17	386			
66	9-6	7	17-9	8 1/2	9-10	258	4.70	2.92	454			
72	10-0	10	19-0	10	10-4	15	278	5.17	2.55	472		
78	10-6	7	20-0	10	11-0	18	296	5.56	2.76	489		
84	11-0	10	21-0	10	12-0	319	5.95	2.87	553			
90	11-6	7	22-0	10	11-10	15	340	6.36	3.17	517		
96	12-0	10	23-0	10	12-4	362	6.78	3.51	537			
102	12-6	7	24-0	10	12-10	12	384	7.21	3.84	663		
108	13-0	10	25-0	10	13-4	406	7.64	4.18	663			



**HEADWALL FOR STRUCTURAL PLATE ARCH**

EQUIV. CONCRETE (CU. YD.)	SPAN (IN.)	RISE (IN.)	DIMENSIONS (IN.)						CONCRETE (CU. YD.)		STEEL (LBS.)	
			X	A	X1	A1	Y	B	SQ. FT.	DBL.	SQ. FT.	DBL.
66	6-1	4-7	10-1	10 1/2	19-2	11	8-11	15 1/2	2.52	4.70	232	424
75	7-0	5-1	11-0	10	21-0	10	9-5	9-2	2.80	5.25	282	509
84	7-11	5-7	11-11	9 1/2	22-10	9	9-11	12 1/2	3.08	5.79	291	540
93	8-10	6-1	12-10	9	24-8	8	10-5	15 1/2	3.36	6.33	309	622
102	9-9	6-7	13-9	8 1/2	26-6	7	10-11	9 1/2	3.63	6.86	379	673
111	10-11	7-1	14-11	9 1/2	28-10	9	11-5	12 1/2	4.05	7.67	377	711
120	11-10	7-1	15-10	9	30-8	8	11-11	15 1/2	4.56	8.28	389	731
132	12-10	8-4	16-10	9	32-8	8	12-8	11	4.75	9.03	441	839
141	14-1	8-9	18-1	10 1/2	35-2	11	13-1	13 1/2	5.17	9.86	448	931
150	15-10	9-3	19-4	12	37-8	8	13-7	16 1/2	5.69	10.88	495	953
159	15-10	9-10	19-10	9	38-8	8	14-2	11	5.89	11.25	534	1019

**Computer File Information**

Creation Date: 07/31/19  
 Designer: JBK  
 Last Modification Date: 07/31/19  
 Detailer: LTA  
 CAD Ver: MicroStation V8

**Sheet Revisions**

No.	Revision	Comments
(CDDT)		
(CDDT)		
(CDDT)		

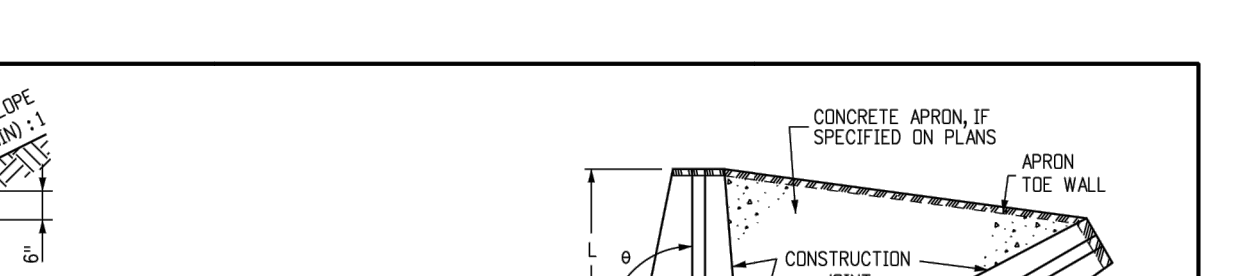
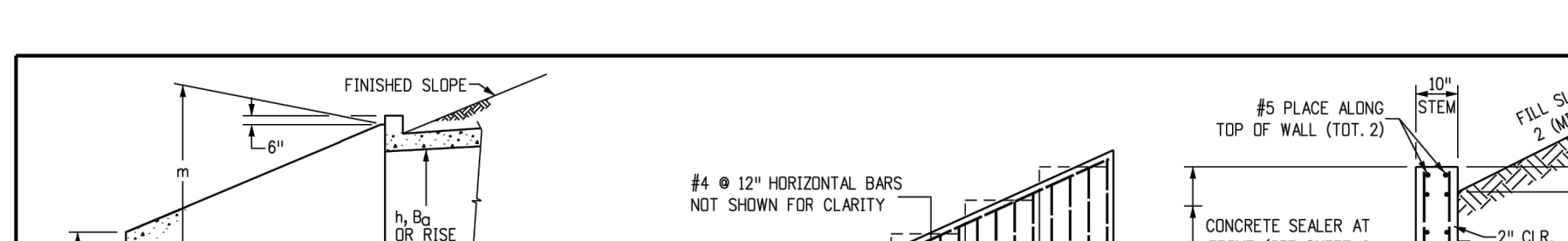
**Colorado Department of Transportation**

2829 West Howard Place  
 CDDT HQ, 3rd Floor  
 Denver, CO 80204  
 Phone: 303-757-9021 FAX: 303-757-9868

**HEADWALL FOR PIPES**

STANDARD PLAN NO. M-601-10  
 Standard Sheet No. 1 of 1

Project Development Branch JBK  
 Issued by the Project Development Branch: July 31, 2019



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)		≤ (1.75 x m)		≤ (2.0 x m)		≤ (2.25 x m)		≤ (2.5 x m)		≤ (3.0 x m)		≤ (3.5 x m)	
		*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.	*REINF. LB./L.F.
4	#4	53.60	55.86	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10	57.10

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19	Designer: JBK	Date:	Comments:
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CD: Ver: MicroStation V8	Scale: Not to Scale	(C) (3)	
	Units: English	(C) (4)	

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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  
Issued by the Project Development Branch July 31, 2019  
Project Sheet Number:

### 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 CDOT 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, 0.8fc'.

REINFORCED CONCRETE: CLASS D CONCRETE: fc' = 4,500 psi  
REINFORCING STEEL: fy = 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 PLACED 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.

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

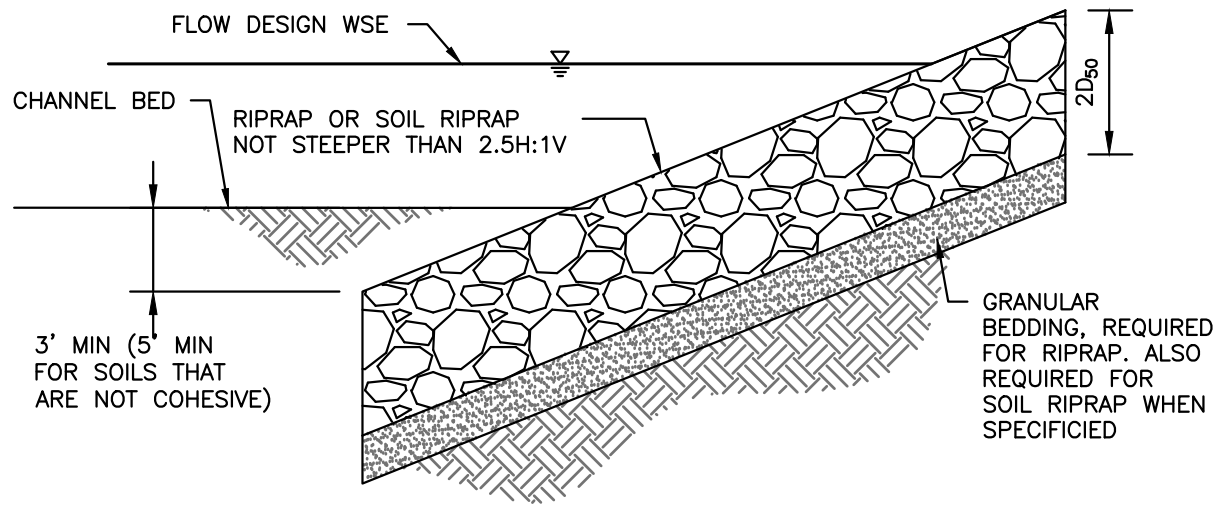
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

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

### 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, Fc.
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3".
- 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 CDOT M-601-10.
- WINGWALLS SHALL BE CONSTRUCTED PER CDOT M-601-20.



### SOIL RIPRAP NOTES:

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

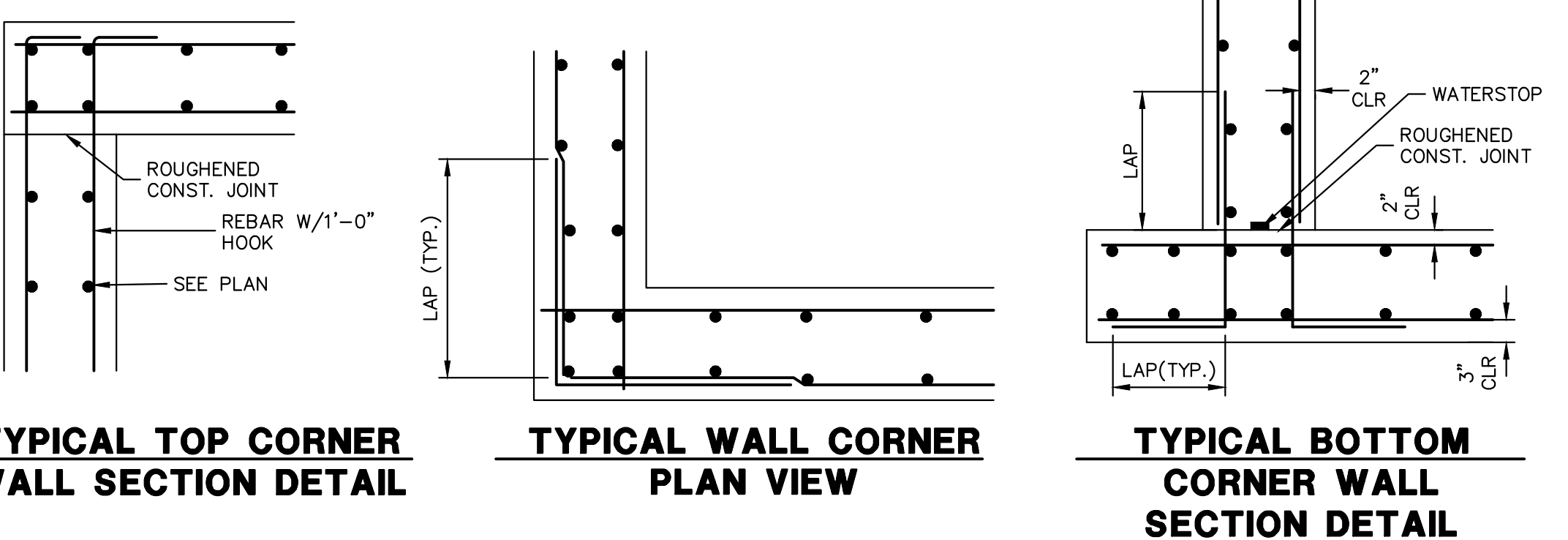
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D50* (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	

\*D50 = MEAN ROCK SIZE

U.S. STANDARD SIEVE SIZE	GRADATION FOR GRANULAR BEDDING	
	PERCENT PASSING BY WEIGHT	
	TYPE I CDOT SECT. 703.01	TYPE II CDOT SECT. 703.09 CLASS A
3 INCHES	-	90 - 100
1 1/2 INCHES	-	-
3/4 INCHES	-	20 - 90
3/8 INCHES	100	-
#4	95 - 100	0 - 20
#16	45 - 80	-
#50	10 - 30	-
#100	2 - 10	-
#200	0 - 2	0 - 3

RIPRAP DESIGNATION	THICKNESS REQUIREMENTS FOR GRANULAR BEDDING		
	MINIMUM BEDDING THICKNESS (INCHES)		
	FINE-GRAINED SOILS 1		COARSE-GRAINED SOILS 2
	TYPE I (LOWER LAYER)	TYPE II (UPPER LAYER)	TYPE II
VL (D50 = 6 IN)	4	4	6
L (D50 = 9 IN)	4	4	6
M (D50 = 12 IN)	4	4	6
H (D50 = 18 IN)	4	6	8
VH (D50 = 24 IN)	4	6	8

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



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

PREPARED FOR:  
LYRJ  
1172 GREENLAND FOREST DRIVE  
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SCOTT SMITH

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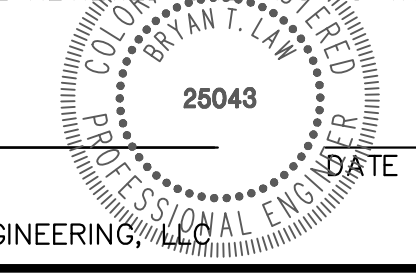
BY	DATE	No.	REVISION	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
LAZY Y AND ROCKING J SUBDIVISION									
POND STANDARD DETAILS									
SHEET 16	OF 16								
JOB NO.	25228.00								



Know what's below. Call before you dig.

### ENGINEER'S STATEMENT

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



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