

FLYING HORSE NORTH

COUNTY OF EL PASO, STATE OF COLORADO

IRRIGATION RESERVOIR EMBANKMENT

SECTION 31, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF 6TH PRINCIPAL MERIDIAN
WATER DIVISION 1, WATER DISTRICT 8

CONTACT INFORMATION:

PROPERTY OWNER/DEVELOPER: PRI #2 LLC
6285 CORPORATE DRIVE, SUITE 200
COLORADO SPRINGS, CO 80919
MR. DREW BALSICK, (719) 592-9333

CIVIL ENGINEER: CLASSIC CONSULTING ENGINEERS & SURVEYORS
619 N. CASCADE, SUITE 200
COLORADO SPRINGS, CO 80903
MR. MARC A. WHORTON, P.E. (719) 785-2802

GEOTECHNICAL ENGINEER: ENTECH ENGINEERING LLC
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
MR. JOE GOODE, P.E. (719) 531-5599

DAM SAFETY ENGINEER: COLORADO DIVISION OF WATER RESOURCES
4255 SINTON ROAD
COLORADO SPRINGS, CO 80907
MR. JOHN HUNYADI, P.E. (719) 227-5294

COUNTY ENGINEERING: EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, COLORADO 80903
MR. GILBERT LAFORCE, (719) 520-7945

OWNER/DEVELOPER'S STATEMENT:

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

[Signature]
MR. DREW BALSICK
PRI #2

9-18-18
DATE

DESIGN ENGINEER'S STATEMENT:

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY DIRECTLY CAUSED BY THE NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.



MARC A. WHORTON, COLORADO P.E. #37155
FOR AND ON THE BEHALF OF CLASSIC CONSULTING ENGINEERS & SURVEYORS
9/17/18
DATE

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

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 WITH ECOM SECTION 1.1.2, 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 DIRECTOR'S DISCRETION.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER / ECM ADMINISTRATOR

DATE

STATE ENGINEER APPROVAL:

APPROVED ON THE 17th DAY OF SEPTEMBER 2018

KEVIN G. REIN
STATE ENGINEER



BY: William T. McCormick III
Chief, Colorado Dam Safety, CO PE 29127

THESE PLANS REPRESENT THE AS-CONSTRUCTED CONDITIONS OF THE FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT TO THE BEST OF OUR KNOWLEDGE AND JUDGEMENT, BASED IN PART ON INFORMATION FURNISHED BY OTHERS, AS OF THE _____ DAY OF _____ 2018.

FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC
MARC A. WHORTON, P.E. #37155

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

GENERAL CONSTRUCTION NOTES:

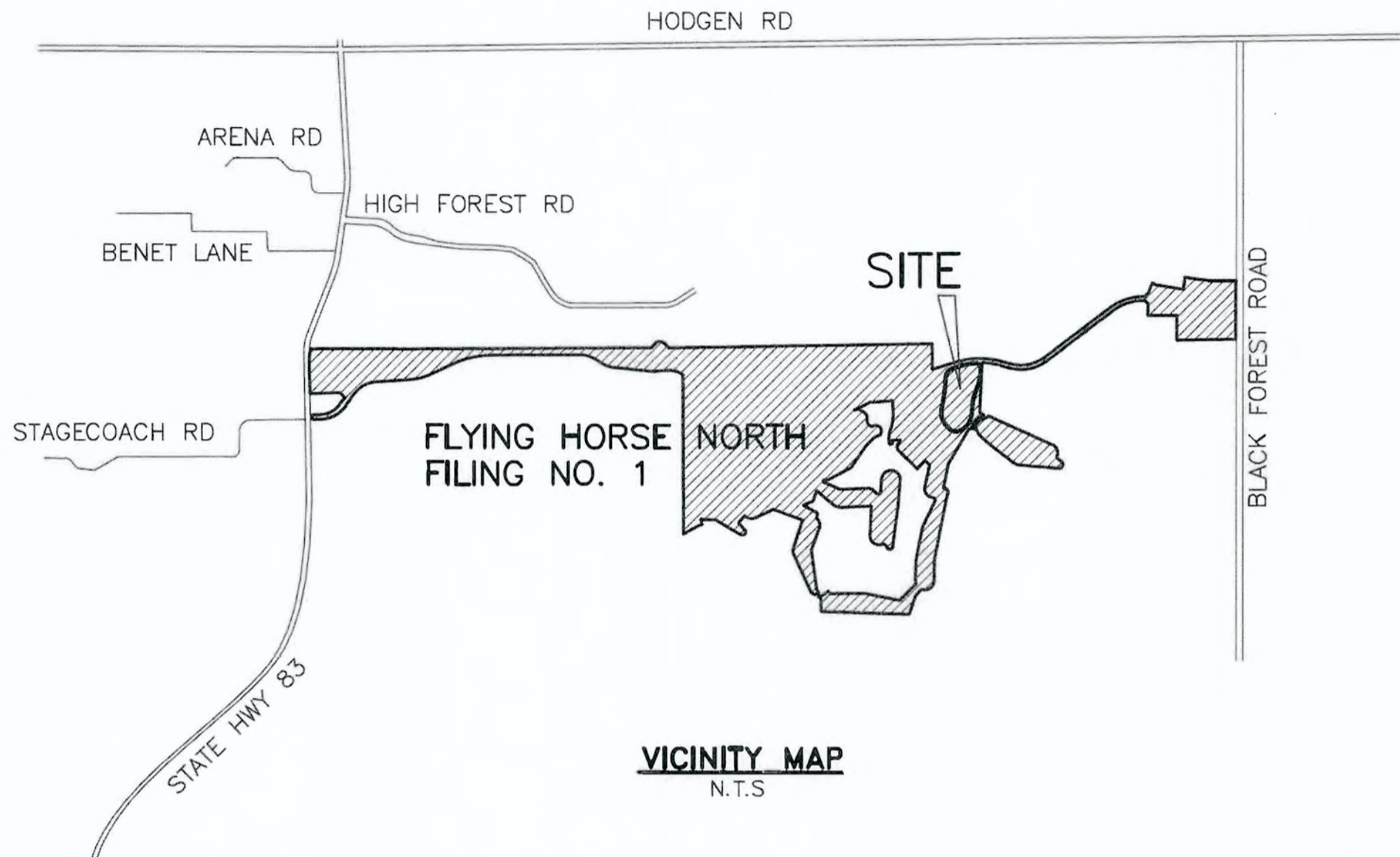
- THE LOCATION OF EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND MAY NOT INCLUDE ALL UTILITIES. THE EXCAVATION CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
- BEFORE COMMENCING ANY EXCAVATION, CALL 1-800-922-1987 FOR EXISTING UTILITY LOCATIONS.
- 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.
- ALL BACKFILL, SUB-BASE AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED TO THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION.
- ALL STATIONING IS CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE CENTERLINE UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS AS SOON AS POSSIBLE AND EROSION CONTROL SHALL BE INSTALLED AND MAINTAINED IN A FUNCTIONAL MANNER AT ALL TIMES. DEVELOPER RESPONSIBLE FOR MAINTAINING DISTURBED AREAS UNTIL REVEGETATION IS COMPLETE.
- ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC EOM APPENDIX K - 1.2C.
- ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- BUILDING CONTRACTORS WILL BE RESPONSIBLE FOR CONSTRUCTING POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
- 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 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 DEVELOPMENT SERVICES DEPARTMENT PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS WITHIN 21 DAYS OF SUBSTANTIAL GRADING COMPLETION. EROSION CONTROL SHALL BE INSTALLED AND MAINTAINED IN A FUNCTIONAL MANNER AT ALL TIMES. DEVELOPER IS RESPONSIBLE FOR MAINTAINING DISTURBED AREAS UNTIL REVEGETATION IS COMPLETE.
- TYPE M RIP-RAP WITH 4" OF TYPE II GRANULAR BEDDING AND MIRAFI 180N OR EQUAL MAY BE SUBSTITUTED WHERE TYPE L RIP-RAP WITH MIRAFI FW 700 OR EQUAL IS SPECIFIED.
- ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH ANY AND ALL APPLICABLE EL PASO COUNTY STANDARDS.

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

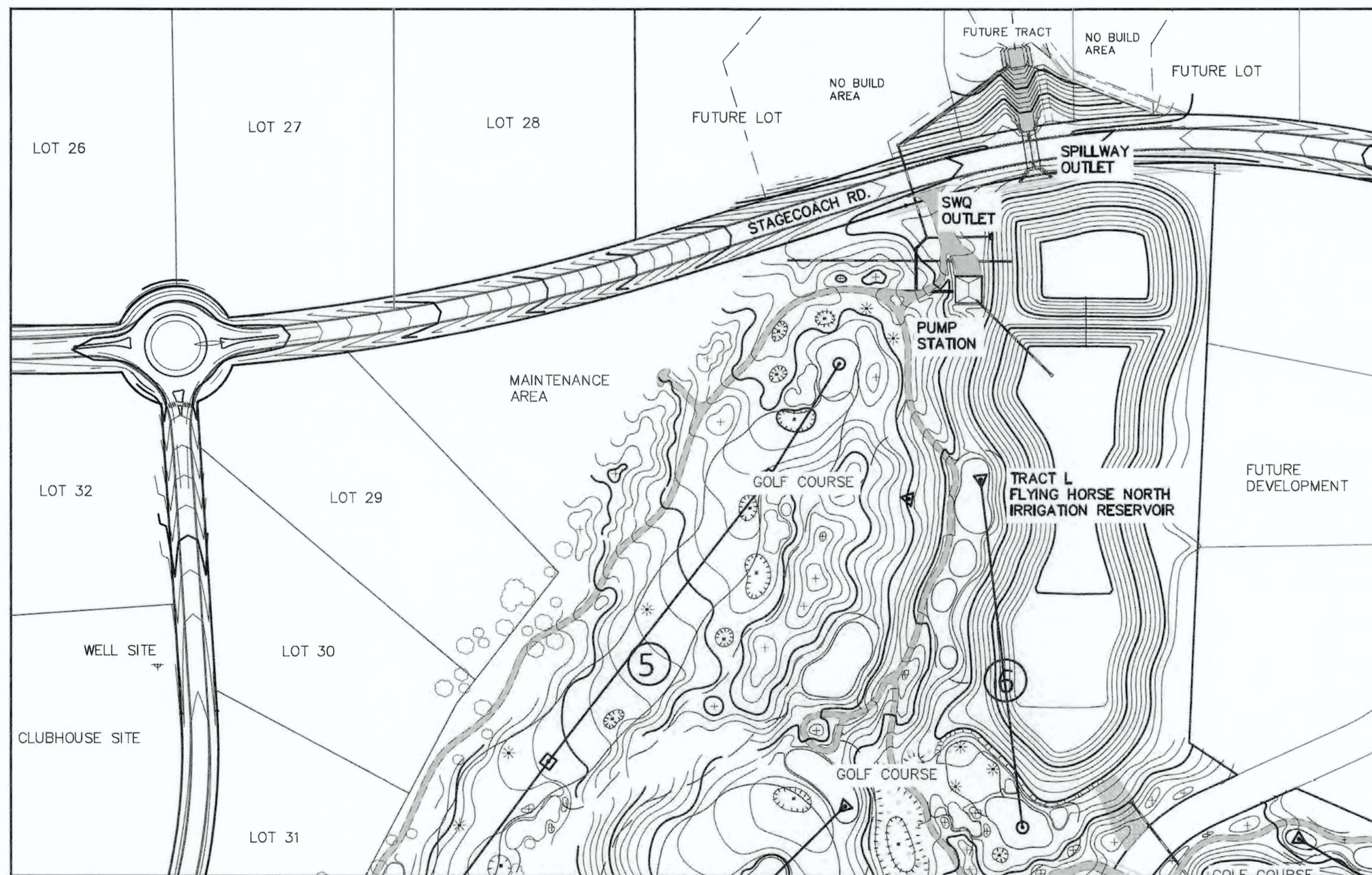
- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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 SOILS 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 FOR ROAD 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 VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 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 AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY DSD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECOM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DSD 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 AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, 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.

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-B REGARDING USE OF THE P2 TUBULAR STEEL POST SUBBASE 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 DEVELOPMENT SERVICES (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 PUBLIC SERVICES DEPARTMENT (PSD) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.



VICINITY MAP
N.T.S.



KEY MAP
N.T.S.

SHEET INDEX

SHEET 1 OF 14	TITLE SHEET
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SHEET 3 OF 14	PUMP STATION PLAN / DETAILS
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SHEET 5 OF 14	EMBANKMENT SPILLWAY PLAN
SHEET 6 OF 14	EMBANKMENT SPILLWAY DETAILS
SHEET 7 OF 14	SPILLWAY ROCK CHUTE DESIGN
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SHEET 9 OF 14	SWQ OUTFALL BOX DETAILS
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SHEET 13 OF 14	EMBANKMENT SPILLWAY STRUCTURE DETAILS
SHEET 14 OF 14	DETAIL SHEET

DESIGN ENGINEER SIGNATURE:

REVIEW: PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, P.E. #37155
DATE: 9/17/18

48 HOURS BEFORE YOU DIG,
CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION CENTER OF COLORADO
IT'S THE LAW

THE LOCATIONS OF EXISTING 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 UNDERGROUND UTILITIES.

NO.	REVISION	DATE
1	REVISED PER STATE COMMENTS	4-3-18
2	REVISED PER COUNTY COMMENTS	7-31-18

619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719) 785-0790
(719) 785-0799(Fax)

FLYING HORSE NORTH
IRRIGATION RESERVOIR EMBANKMENT

TITLE SHEET
DAM ID - 080459

DESIGNED BY	MAW	SCALE	DATE	1-4-18
DRAWN BY	MAW	(H) 1" = N/A	SHEET	1 OF 14
CHECKED BY	(V) 1" = N/A	JOB NO.	1096.11	



PUMP STATION SPECIFICATIONS:
 NAME: FLYING HORSE RANCH
 STATION MODEL:
 VTV-1-75x3(75)/5ST-480-3-2250(3000)-110

STATION TOTAL PERFORMANCE:
 2250GPM @ 110PSI
 3000GPM @ 110PSI (FUTURE)

PUMP HORSEPOWER:
 SUSTAIN PUMP: 5HP
 PUMP NO. 1-3: 75HP
 PUMP NO. 4: 75HP (FUTURE PUMP/MOTOR)

WET WELL DIMS: Ø96"
WET WELL DEPTH: 25'-0"

MAIN LINE CONNECTION: 16" FLANGED
NOMINAL PIPE SIZE: NA

DROP PIPE COVER: 48"
INTAKE FLUME PIPE SIZE: 30"
INTAKE FLUME MATERIAL:.....SDR35 PVC
OD32"

CHECK VALVE SIZE:
 SUSTAIN: BUILT IN
 PUMP NO. 1-2: 6"

ISOLATION VALVE SIZES:
 SUSTAIN PUMP: 2"
 PUMP NO. 1-2: 5" (EBV)

DISCHARGE ISOLATION VALVE: 10"
 RELIEF VALVE SIZE: 6"

PUMP STATION DISCONNECT: 600 AMP
POWER REQUIREMENTS:
 480V, 60 HZ, 3 PZ, 3Ø6 FLA
 EXHAUST FAN REQ'D FOR BUILDING:
 5400 CFM

PLEASE VERIFY ALL INFO WITH YOUR INITIALS AND DATE

PLEASE INDICATE POWER SUPPLY CONDITION BELOW FOR FCC COMPLIANCE. REFER TO WATERTRONICS DRAWING # FCC-1 FOR ADDITIONAL INFORMATION

A: CONNECTED THROUGH A COMMERCIAL BUILDING
 B: CONNECTED THROUGH A DEDICATED TRANSFORMER
 C: CONNECTED THROUGH A PAD TRANSFORMER SHARED WITH OTHER NON-RESIDENTIAL EQUIPMENT.
 D: CONNECTED TO A POLE TRANSFORMER ON A RESIDENTIAL POWER GRID.
 E: CONNECTED TO A PAD TRANSFORMER SHARED WITH RESIDENTIAL DWELLINGS.

PLEASE USE THE SPACE BELOW FOR ANY ADDITIONAL COMMENTS:
 1. MIN. WATER LEVEL IN THE WET WELL 56" FROM THE BOTTOM
 2. NORMAL WATER LEVEL AT THE WET WELL ??
 3. MAX/HIGH WATER LEVEL IN THE WET WELL ??
 4. TO DRAIN THE BOND COMPLETELY THE BOTTOM OF THE BOND NEED TO BE LOWER THAN THE BOTTOM OF WET WELL 1

APPROVED AS SUBMITTED
 APPROVED AS NOTED
 REVISE AND RESUBMIT

REVIEWED BY: _____
 NAME: _____
 DATE: _____

DIMENSIONS AND SIZES OF EXISTING STRUCTURES, AND/OR COMPONENTS MUST BE VERIFIED TO WATERTRONICS BEFORE STATION CONSTRUCTION BEGINS.

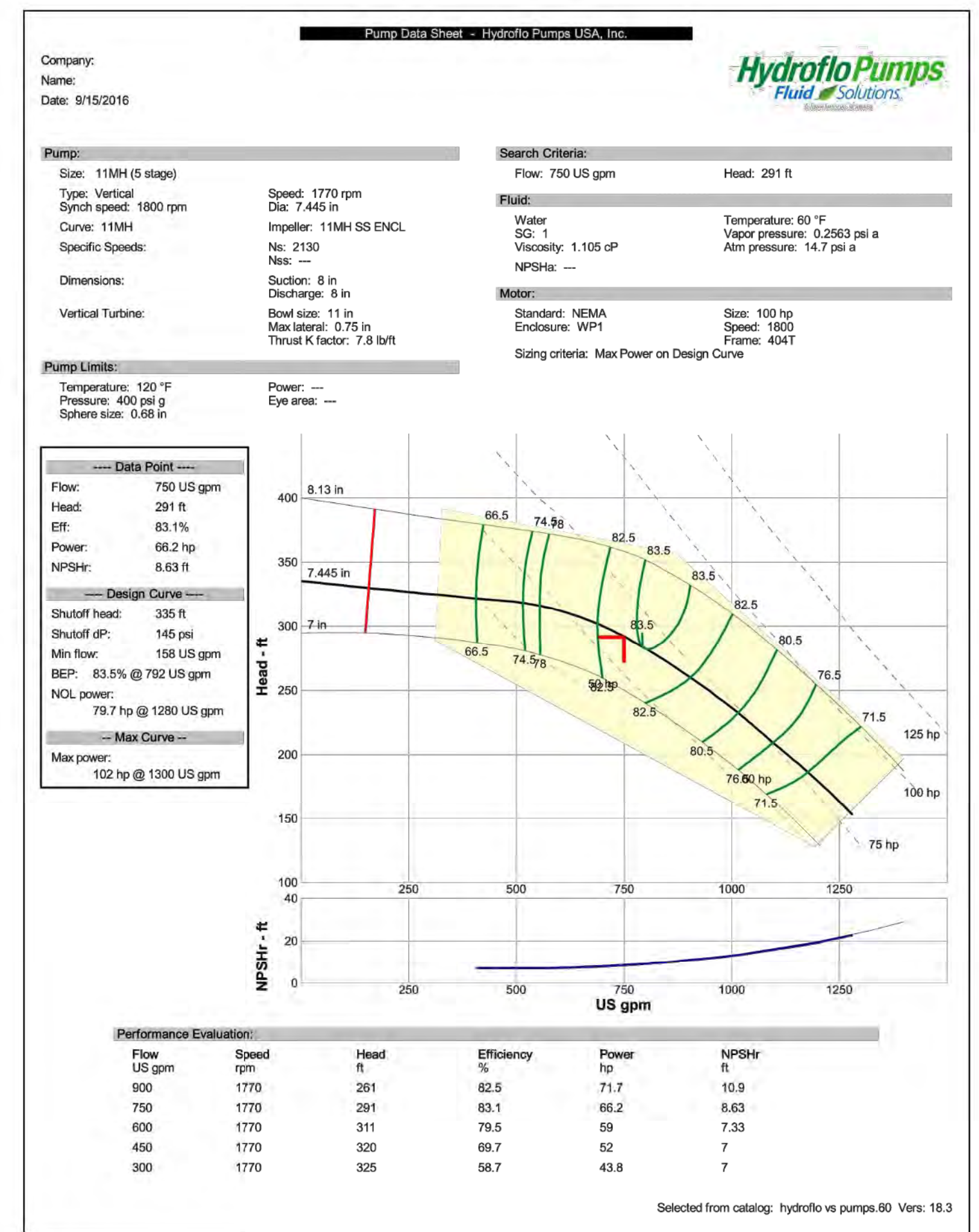
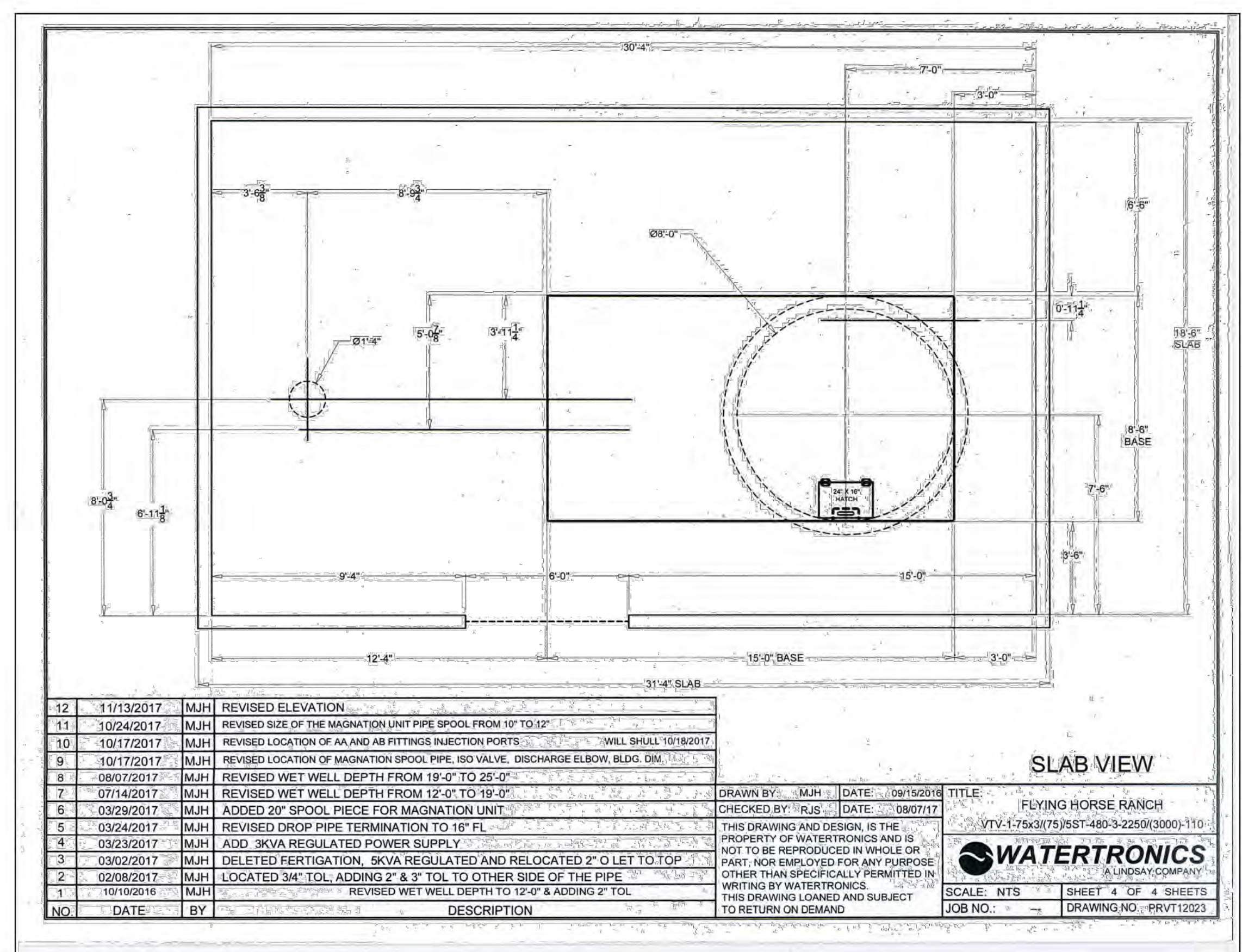
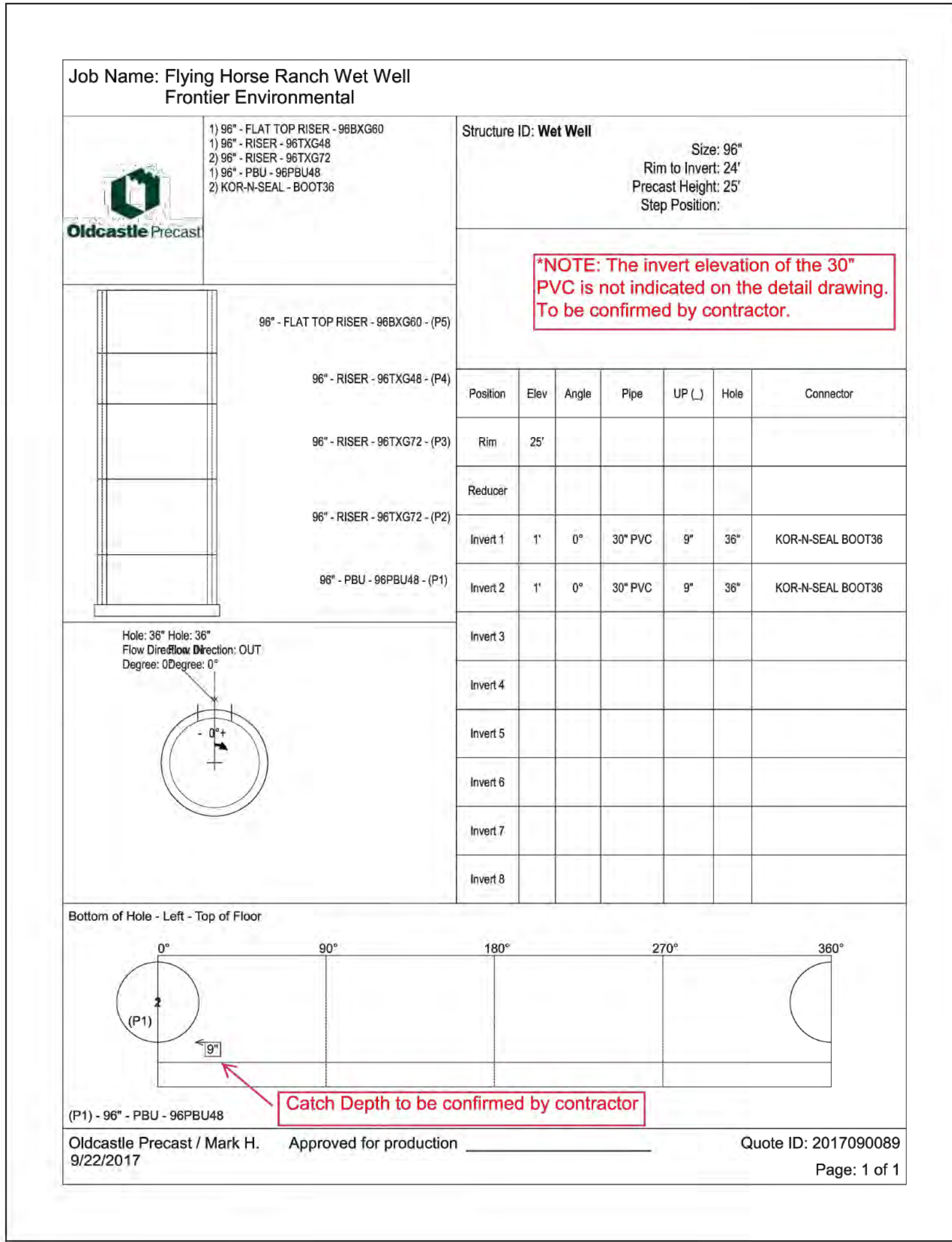
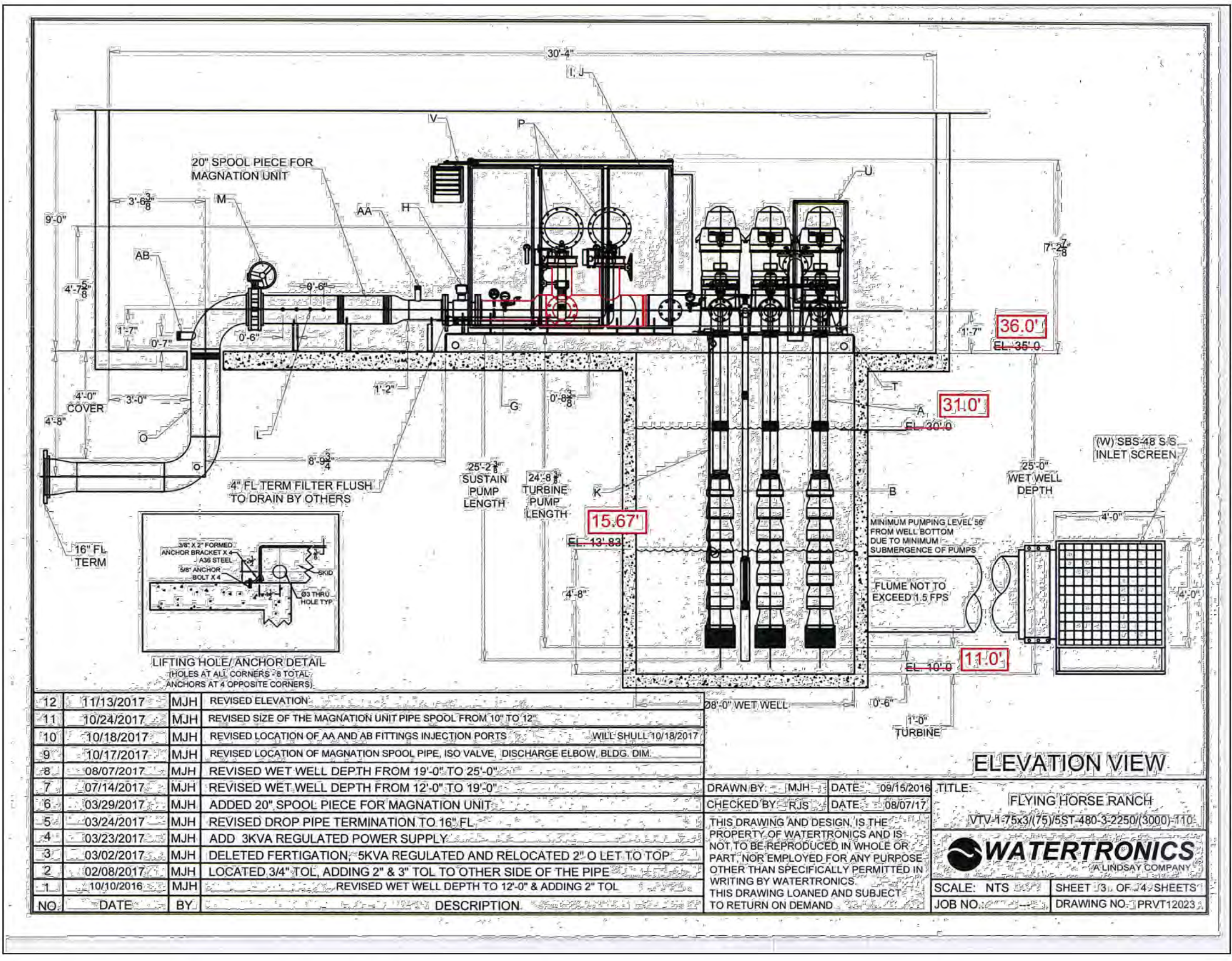
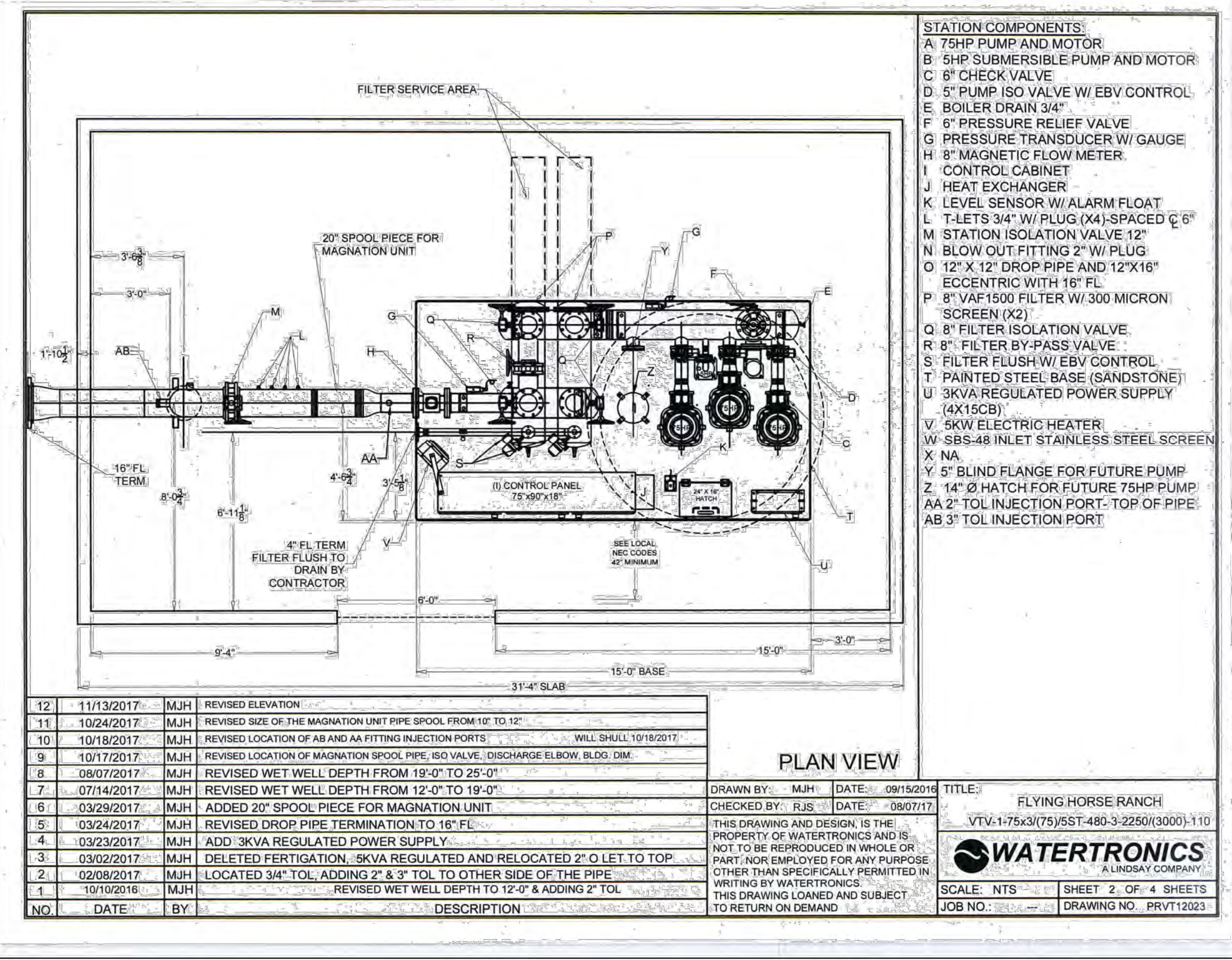
UNLESS SPECIFIED BY THE CUSTOMER, PUMP HOUSE/CONCRETE SLAB DIMENSIONS ARE RECOMMENDED MINIMUMS FOR NEC AND SERVICE CLEARANCE, AND ARE FOR ILLUSTRATION PURPOSES ONLY. PROJECT MANAGER SHALL BE CONSULTED ON FINAL DESIGN.

THE PUMP STATION PROPOSED HEREIN IS DESIGNED TO BE PLACED IN A PUMP HOUSE FOR PROTECTION FROM THE ENVIRONMENT. IF A PUMP HOUSE IS NOT USED, WATERTRONICS MUST BE NOTIFIED AT TIME OF QUOTATION SO SPECIAL PROVISIONS CAN BE MADE.

WATERTRONICS
 A LINDSAY COMPANY

PHONE: 1-262-367-5000
 FAX: 1-262-367-5551

SHEET 1 OF 4 SHEETS
 DRAWING NO. PRVT12023 09/15/2016



48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS

811

UTILITY NOTIFICATION CENTER OF COLORADO
 IT'S THE LAW

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NO. REVISION

1	REVISED PER STATE COMMENTS	DATE	4-2-18
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REVIEW: PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHITTON, P.E. 37155

CLASSIC CONSULTING ENGINEERS & SURVEYORS

619 N. Cascade Avenue, Suite 200
 Colorado Springs, Colorado 80903

(719)785-0790
 (719)785-0799(Fax)

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT
 PUMP STATION PLAN / DETAILS
 DAM ID - 080459

DESIGNED BY MAW SCALE DATE 1-4-18
 DRAWN BY MAW (H) 1"= N/A SHEET 3 OF 14
 CHECKED BY (V) 1"= N/A JOB NO. 1096.11

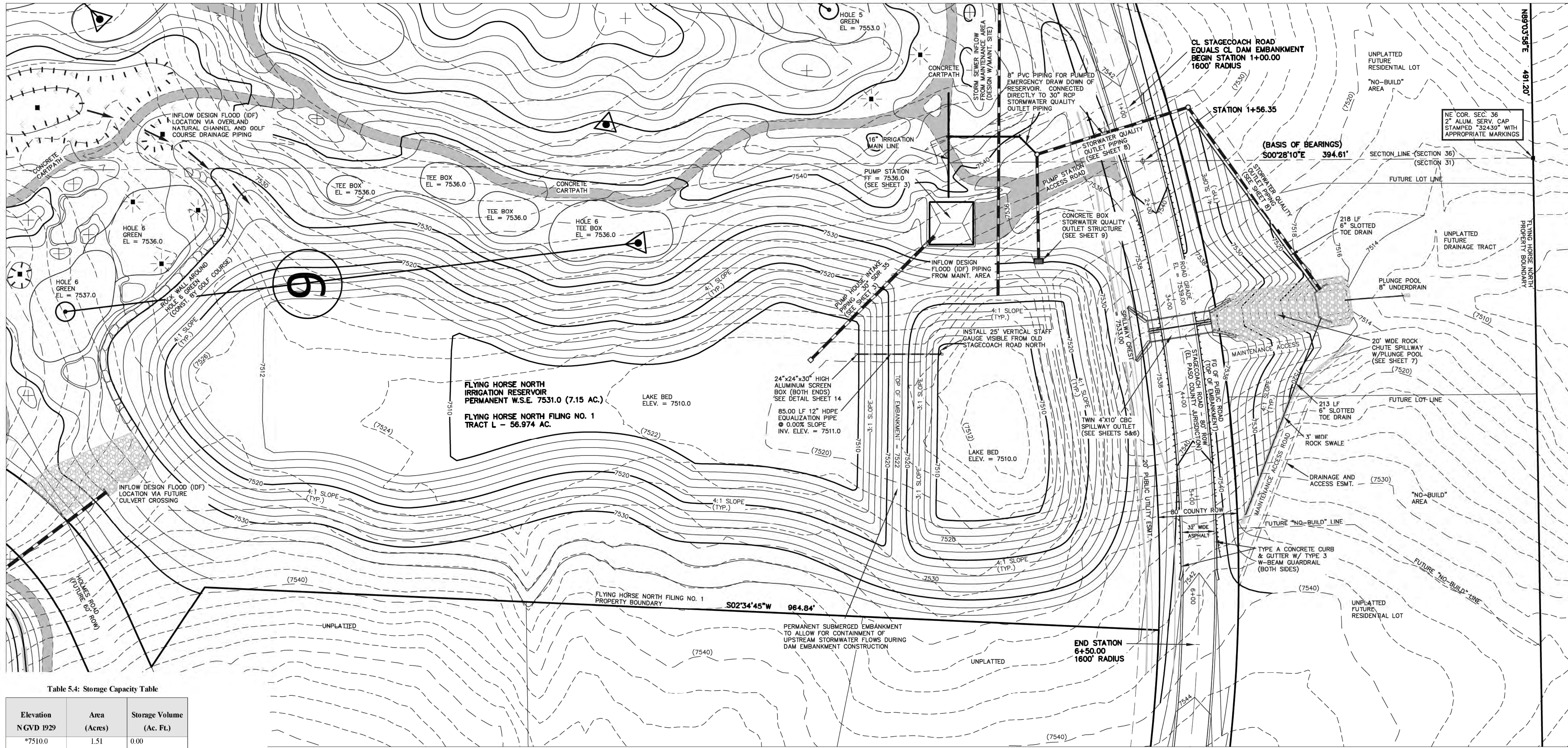


Table 5.4: Storage Capacity Table

Elevation NGVD 1929	Area (Acres)	Storage Volume (Ac. Ft.)
*7510.0	1.51	0.00
*7511.0	1.99	1.74
*7512.0	2.52	3.99
*7513.0	2.85	6.68
*7514.0	3.05	9.63
*7515.0	3.26	12.78
7516.0	3.48	16.15
7517.0	3.70	19.74
7518.0	3.93	23.56
7519.0	4.16	27.60
7520.0	4.40	31.88
7521.0	4.64	36.40
7522.0	4.88	41.16
7523.0	5.14	46.17
7524.0	5.36	51.42
7525.0	5.59	56.89
7526.0	5.84	62.61
7527.0	6.08	68.57
7528.0	6.33	74.77
7529.0	6.57	81.22
7530.0	6.81	87.91
7531.0	7.15	94.89
7532.0	7.52	102.22
7533.0	7.83	109.90
7534.0	8.37	118.00
7535.0	8.77	126.57
7536.0	9.17	135.53

*Indicates dead storage below pumping ability

Table 5.5: Reservoir Discharge Table

Elevation	Discharge (cfs) (SWQ Outlet Box)	Discharge (cfs) (Twin CBC Spillway)	Discharge (cfs) (Total)
7531.0	0.0	0.0	0.0
7532.0	13.89	0.0	13.89
7533.0	27.77	0.0	27.77
7534.0	51.31	49.05	100.36
7535.0	69.52	138.56	208.08
7536.0	74.61	254.72	329.33

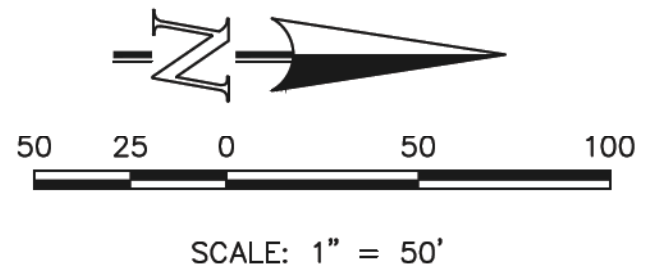
Permanent WSE = 7531.0
 Top of SWQ Outlet box = 7533.0
 Spillway elevation = 7533.0

NOTES:

- TOPOGRAPHIC BASE MAPPING PRODUCED FROM AERIAL PHOTOGRAPHY PROVIDED BY NORTH AMERICAN MAPPING IN 2009. HORIZONTAL CONTROL IS BASED ON LOCAL CALIBRATION TIED TO SECTION CORNER AND VERTICAL CONTROL IS BASED ON NGVD 1929 DATUM.
- PERMANENT WSE = 7531.0
- RESERVOIR LINER INSTALLED UP TO ELEVATION 7534.0

STAFF GAUGE DETAILS:

- 12"x25"x1/2" PVC
- LASER CUT ACRYLIC NUMBERS AND HATCH MARKS LIQUID WELDED TO PVC ON 1 FT. INCREMENTS
- MOUNTED ON ALUMINUM FRAME WITH CROSS BRACKETS ANCHORED INTO SLOPE
- BASE FASTENED TO 12" PIPE
- ELEVATION DISPLAY RANGE: 7512-7535



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NO.	REVISION	DATE
1	REVISED PER STATE COMMENTS	5-14-18
2	REVISED PER COUNTY COMMENTS	7-31-18

REVIEW:
 PREPARED UNDER DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WILKINSON, COLORADO P.E. #37155

DATE: 9/17/18

619 N. Cascade Avenue, Suite 200
 Colorado Springs, Colorado 80903
 (719) 785-0790
 (719) 785-0799 (fax)

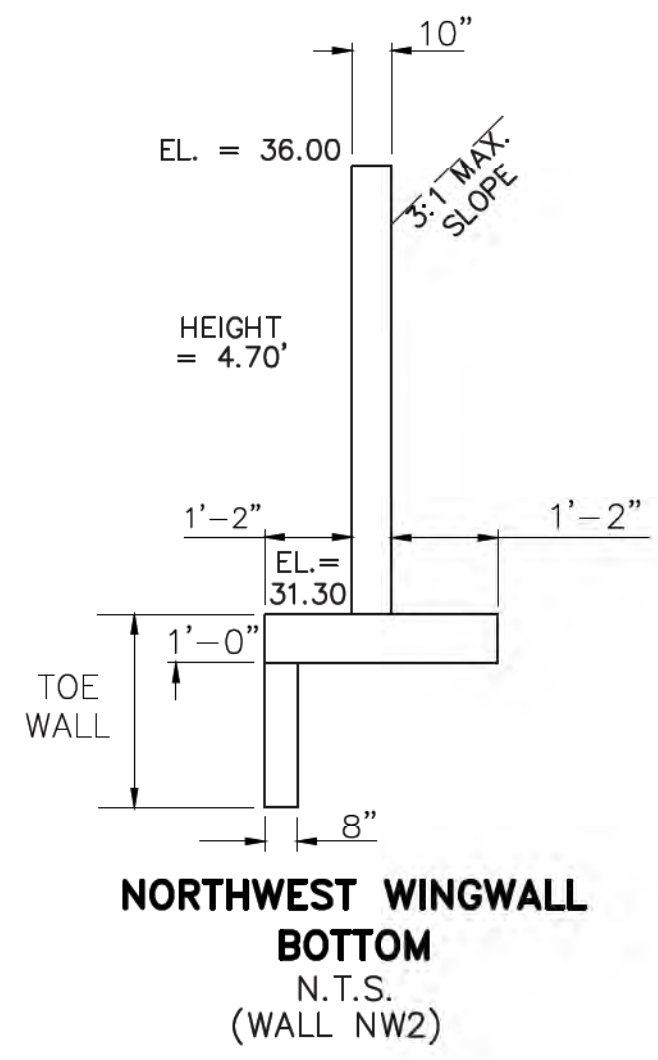
STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

**FLYING HORSE NORTH
 IRRIGATION RESERVOIR EMBANKMENT**

SITE LAYOUT WITH GRADING
 DAM ID - 080459

DESIGNED BY	MAW	SCALE	DATE	1-4-18
DRAWN BY	MAW	(H) 1" = 50'	SHEET	4 OF 14
CHECKED BY	(V) 1" = N/A	JOB NO.	1096.11	

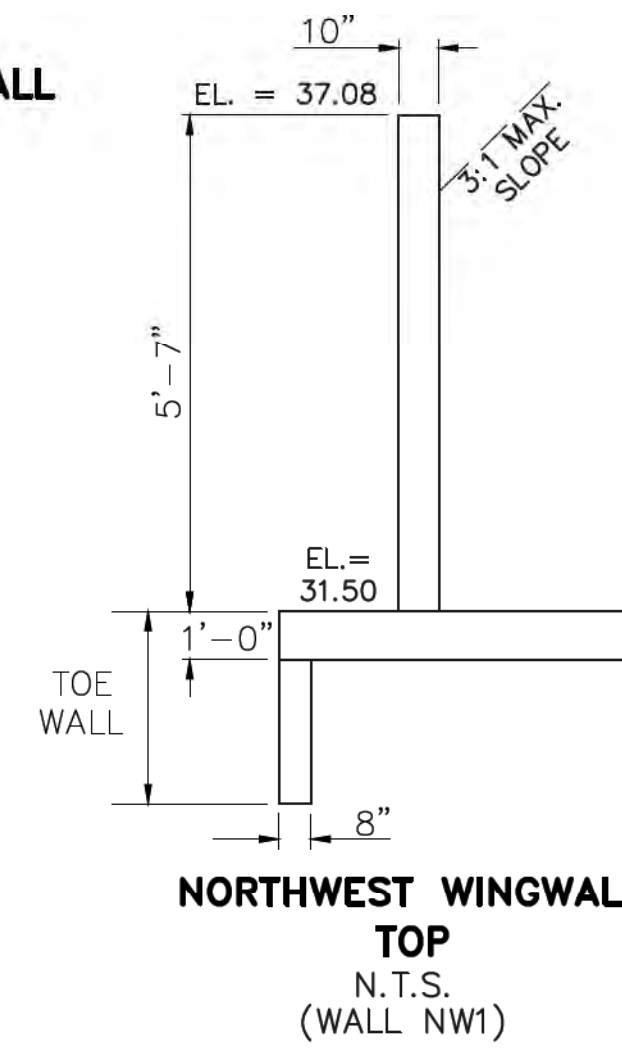
CLASSIC CONSULTING ENGINEERS & SURVEYORS



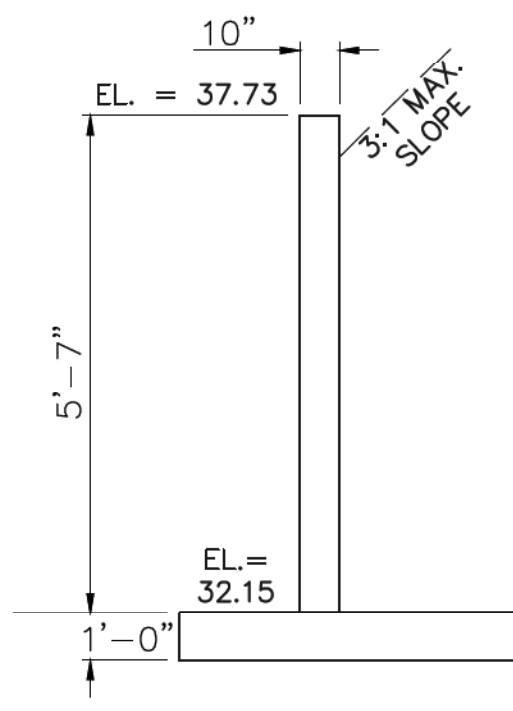
**NORTHWEST WINGWALL
BOTTOM**
N.T.S.
(WALL NW2)

NORTHWEST WINGWALLS
CBC INV. EL = 7531.50
EL AT TOP OF CBC = 7537.58

FOR WINGWALL STRUCTURAL DETAILS
SEE DETAIL E-E SHEET 13



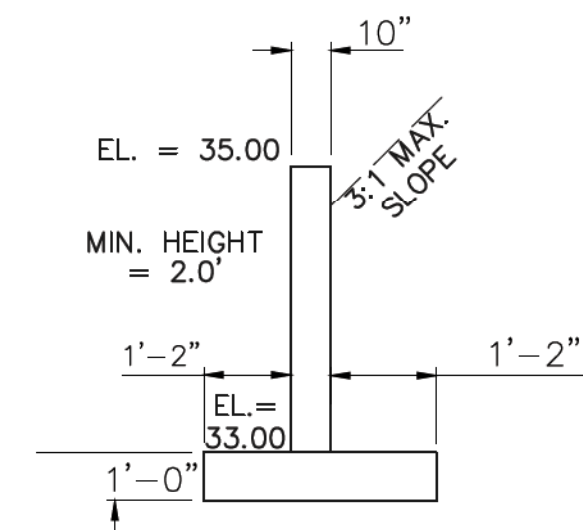
**NORTHWEST WINGWALL
TOP**
N.T.S.
(WALL NW1)



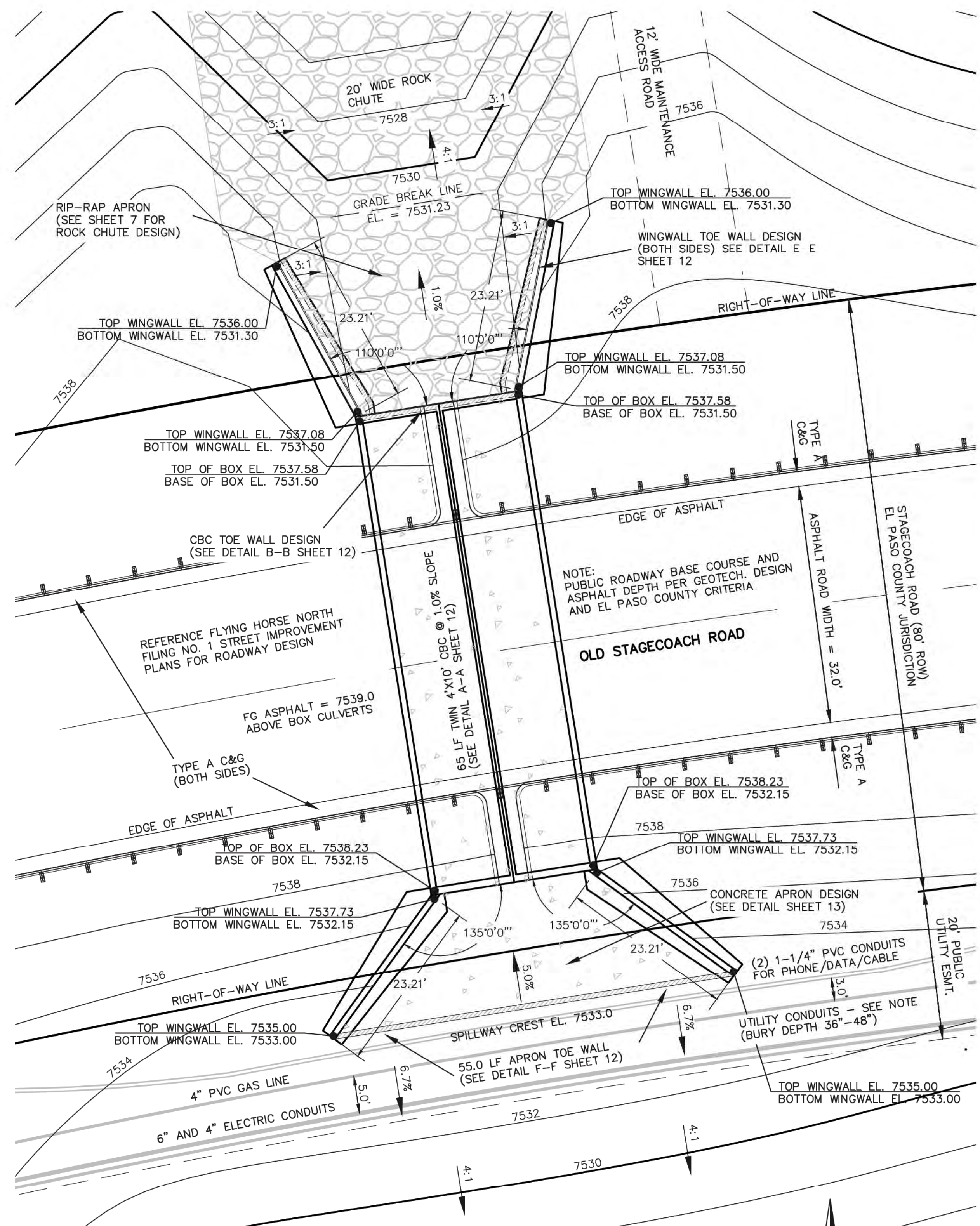
**SOUTHWEST WINGWALL
TOP**
N.T.S.
(WALL SW1)

SOUTHWEST WINGWALLS
CBC INV. EL = 7532.15
EL AT TOP OF CBC = 7538.23

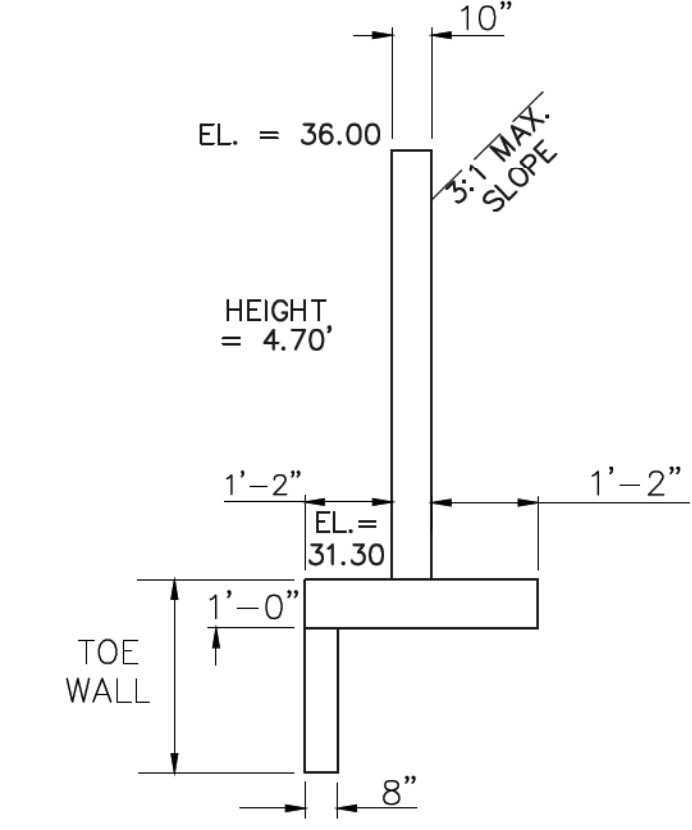
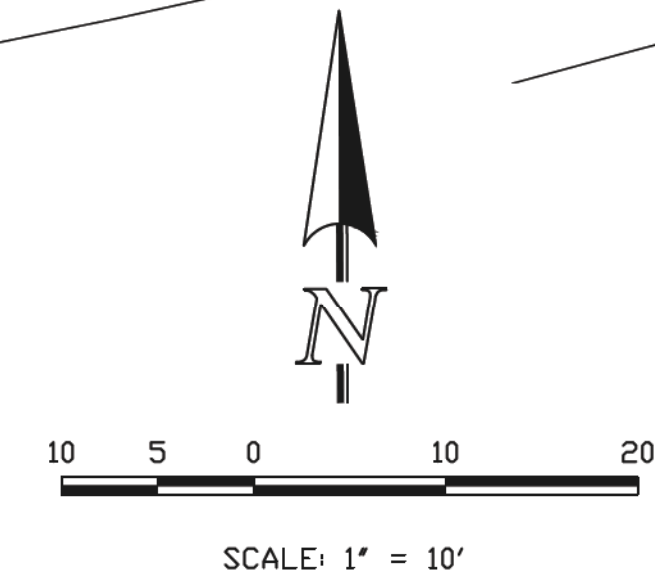
FOR WINGWALL STRUCTURAL DETAILS
SEE DETAIL D-D SHEET 13



**SOUTHWEST WINGWALL
BOTTOM**
N.T.S.
(WALL SW2)



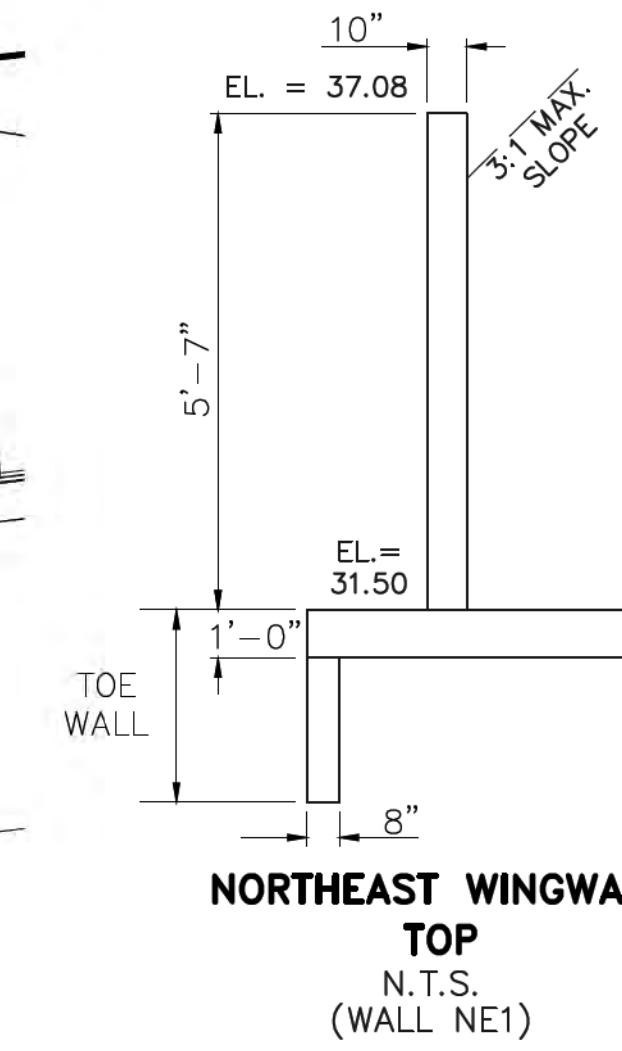
EMBANKMENT SPILLWAY DESIGN



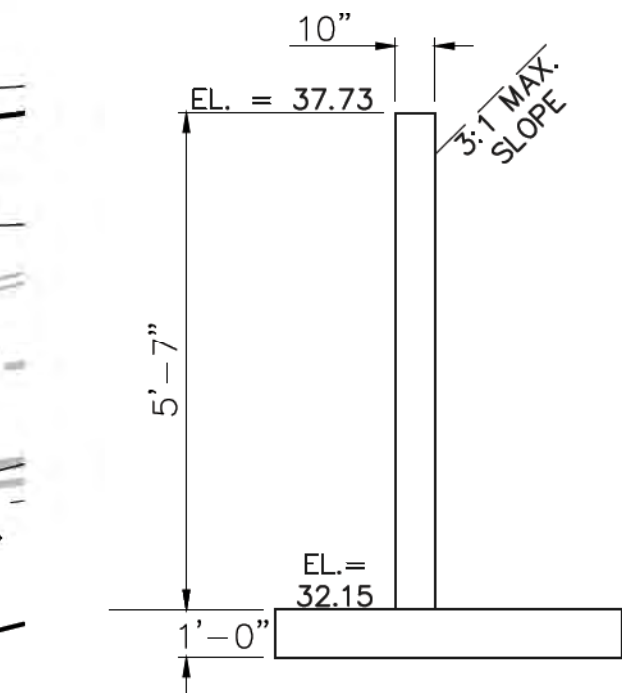
**NORTHEAST WINGWALL
BOTTOM**
N.T.S.
(WALL NE2)

NORTHEAST WINGWALLS
CBC INV. IN EL = 7531.50
EL AT TOP OF CBC = 7537.58

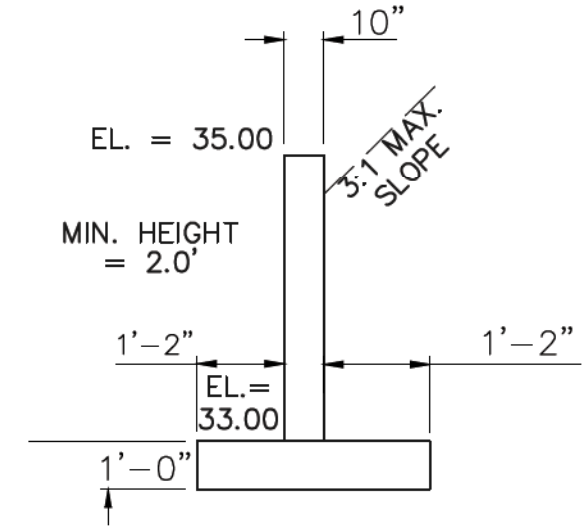
FOR WINGWALL STRUCTURAL DETAILS
SEE DETAIL E-E SHEET 13



**NORTHEAST WINGWALL
TOP**
N.T.S.
(WALL NE1)



**SOUTHEAST WINGWALL
TOP**
N.T.S.
(WALL SE1)



**SOUTHEAST WINGWALL
BOTTOM**
N.T.S.
(WALL SE2)

UTILITY CONDUIT NOTE:
BURIED CONDUITS WITHIN THE 20' PUBLIC UTILITY ESMT.
INCLUDE THE FOLLOWING:

- (1) 6" SCHEDULE 40 PVC FOR 3 PHASE ELECTRIC
- (1) 4" PVC FOR SINGLE PHASE ELECTRIC
- (1) 4" PVC NATURAL GAS LINE
- (2) 1-1/4" PVC CONDUIT FOR PHONE/DATA/CABLE

SOUTHEAST WINGWALLS
CBC INV. IN EL = 7532.15
EL AT TOP OF CBC = 7538.23

FOR WINGWALL STRUCTURAL DETAILS
SEE DETAIL D-D SHEET 13

<p>48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS 811 UTILITY NOTIFICATION OF COLORADO IT'S THE LAW</p> <p>THE LOCATIONS OF EXISTING 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 UNDERGROUND UTILITIES.</p>	NO. REVISION	DATE	REVIEW:
	1 REVISED PER STATE COMMENTS	5-2-18	PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

9/17/18

MARC A. WILSON/COLORADO P.E. #37155

CLASSIC
CONSULTING ENGINEERS & SURVEYORS

619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903

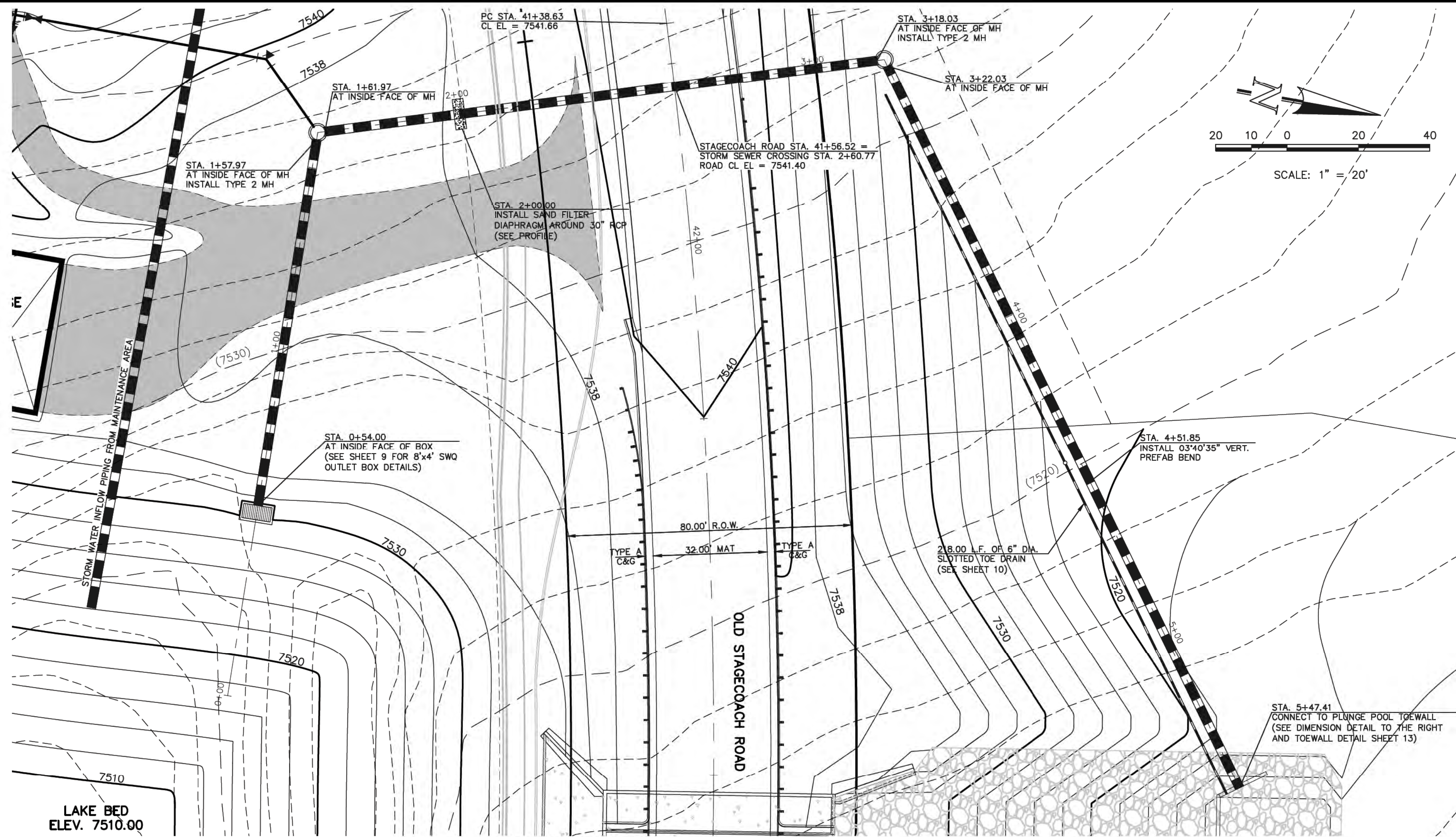
(719)785-0790
(719)785-0799(Fax)

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

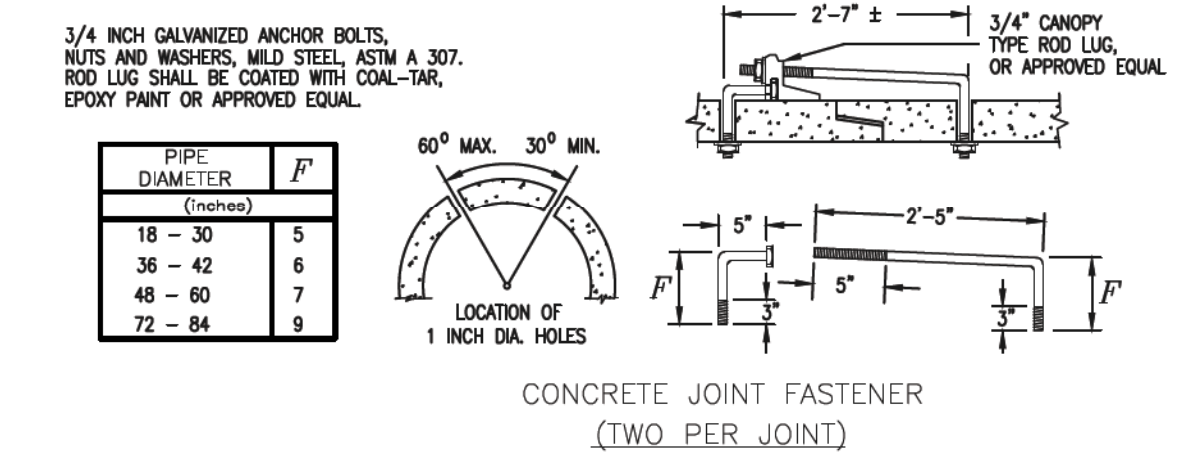
FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT			
EMBANKMENT SPILLWAY DETAILS			
DAM ID - 080459			
DESIGNED BY	MAW	SCALE	DATE 1-4-18
DRAWN BY	MAW	(H) 1" = 20'	SHEET 6 OF 14
CHECKED BY	(V) 1" = N/A	JOB NO.	1096.11



N:\109611\DRAWINGS\CONSTRUCTION\Jurisdictional Plans\6-D FOND - Spillway Details.dwg, 8/21/2018 11:44:39 AM, 1:1

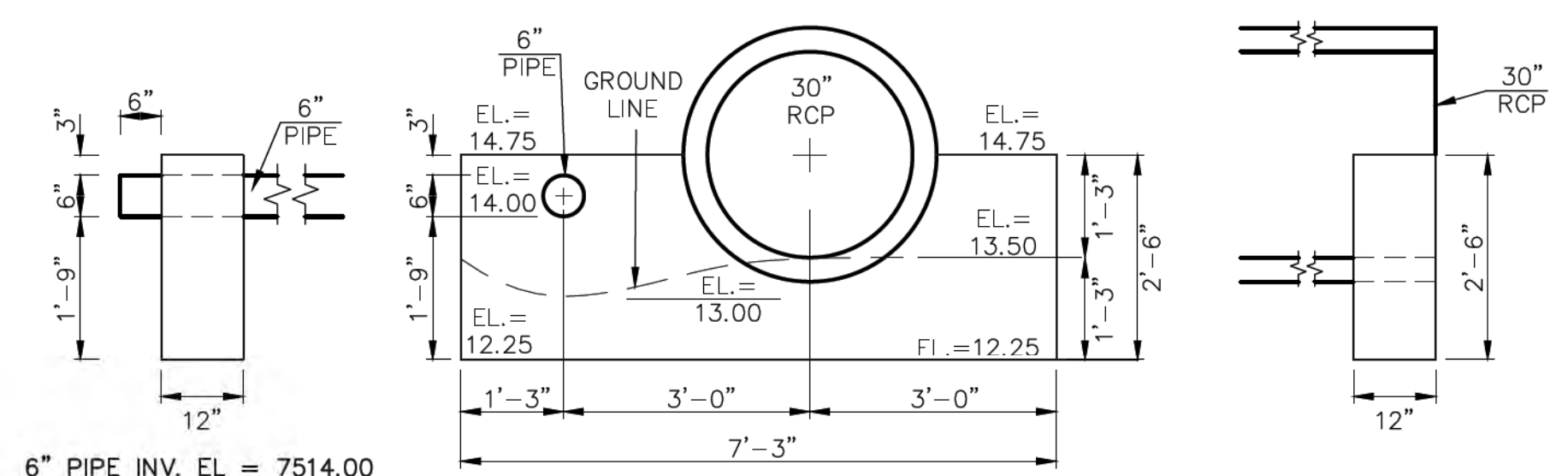


SWQ OUTFALL PLAN



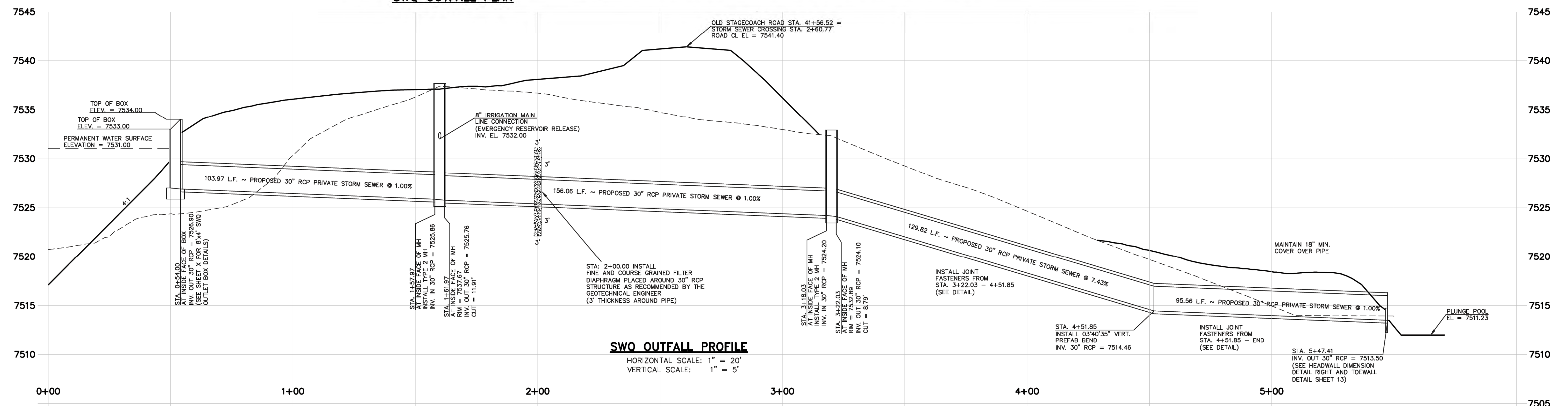
CONCRETE JOINT FASTENER
(TWO PER JOINT)

PIPE DIAMETER (inches)	F
18 - 30	5
36 - 42	6
48 - 60	7
72 - 84	8



WESTERLY OUTLET HEADWALL

6" PIPE INV. OUT EL = 7514.00
 30" RCP INV. OUT EL = 7513.50
 EL AT TOP OF SADDLEWALL = 7514.75
 EL AT BOTTOM SADDLEWALL = 7512.25



SWQ OUTFALL PROFILE

HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 5'

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NO.	REVISION	DATE
1	REVISED PER STATE COMMENTS	5-8-18
2	REVISED PER COUNTY COMMENTS	7-31-18

REVIEW:
 PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155

9/17/18

CLASSIC
 CONSULTING ENGINEERS & SURVEYORS

619 N. Cascade Avenue, Suite 200
 Colorado Springs, Colorado 80903
 (719) 785-0790
 (719) 785-0799 (fax)

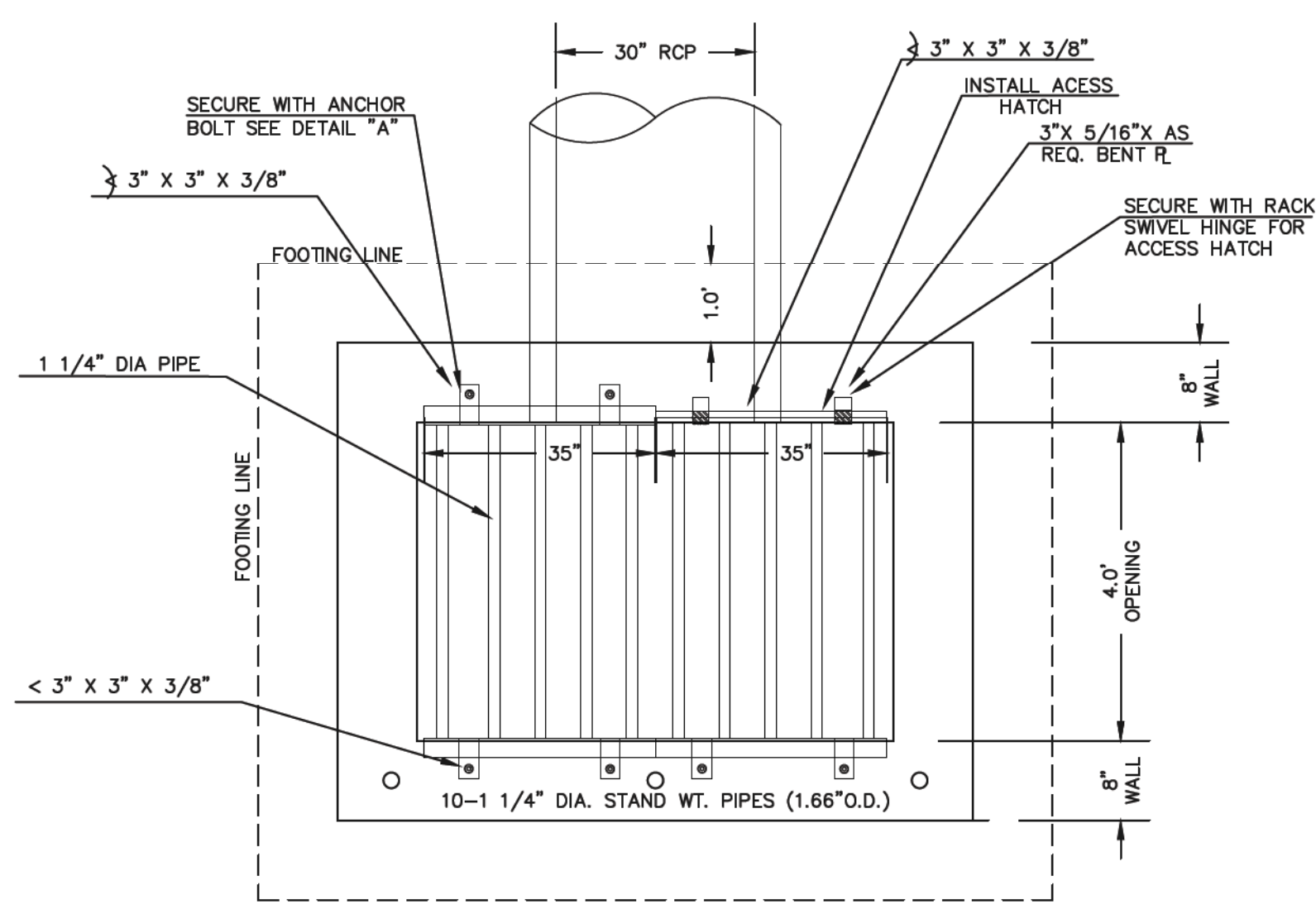
STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT
 SWQ OUTFALL PLAN & PROFILE
 DAM ID - 080459

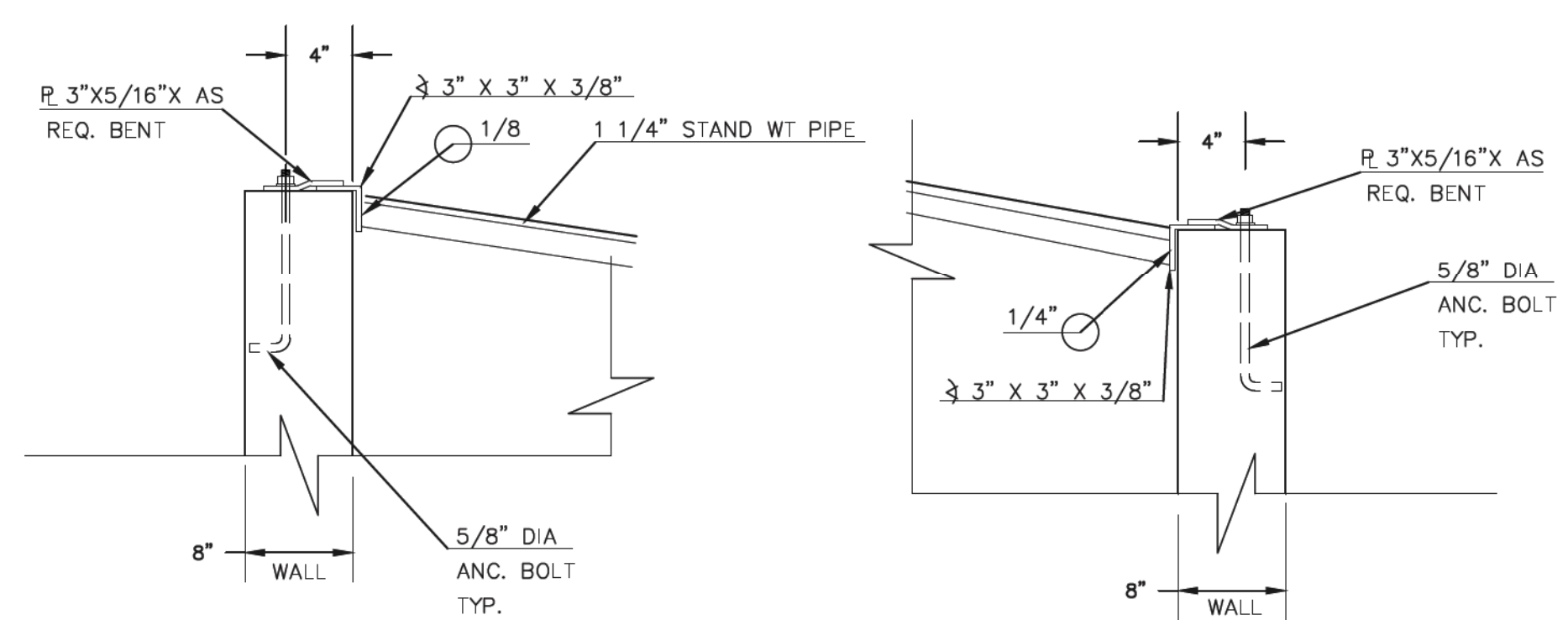
DESIGNED BY	MAW	SCALE	DATE	1-4-18
DRAWN BY	MAW	(H) 1" = 20'	SHEET	8 OF 14
CHECKED BY	(V)	1" = 5'	JOB NO.	1096.11



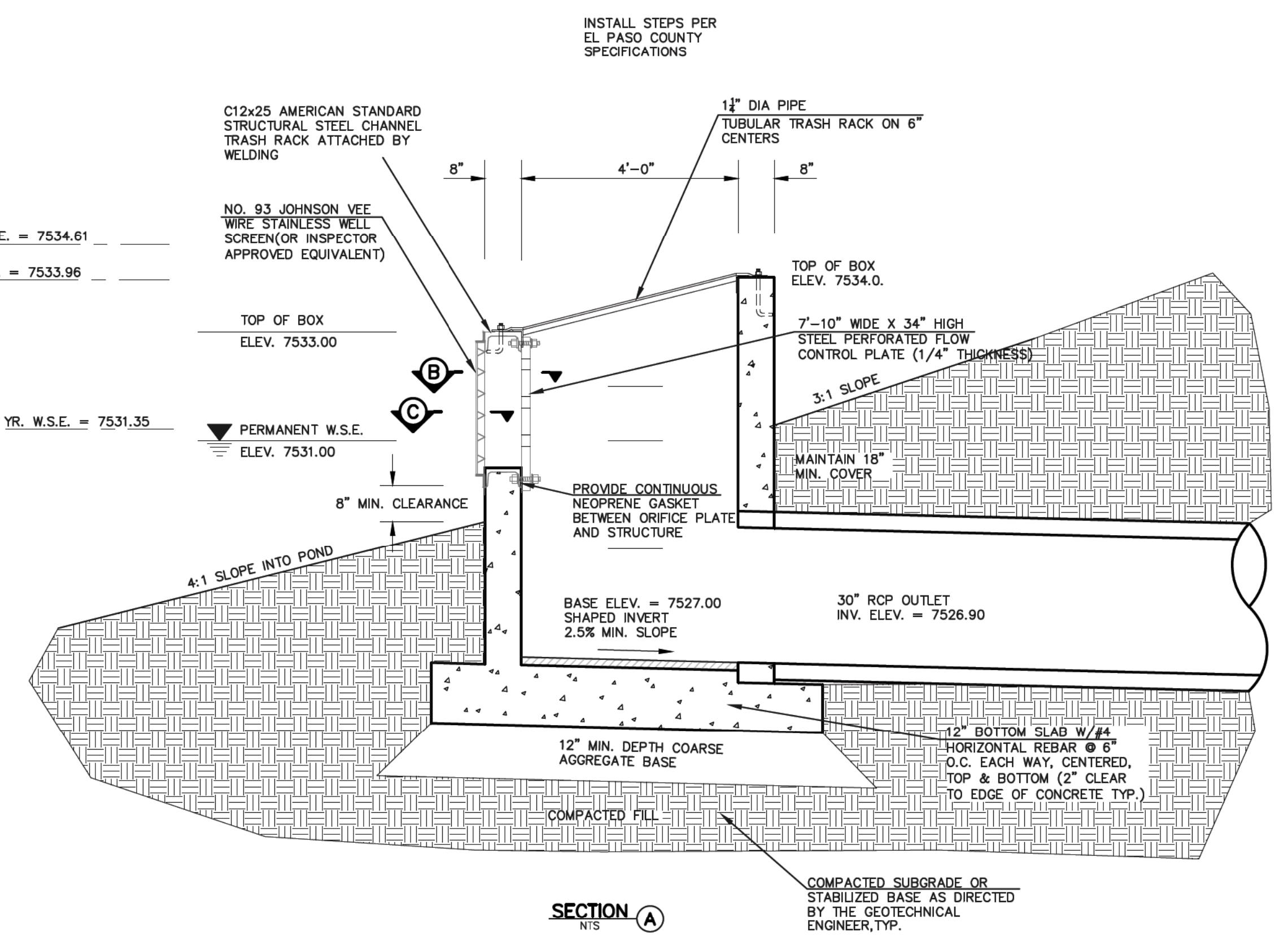
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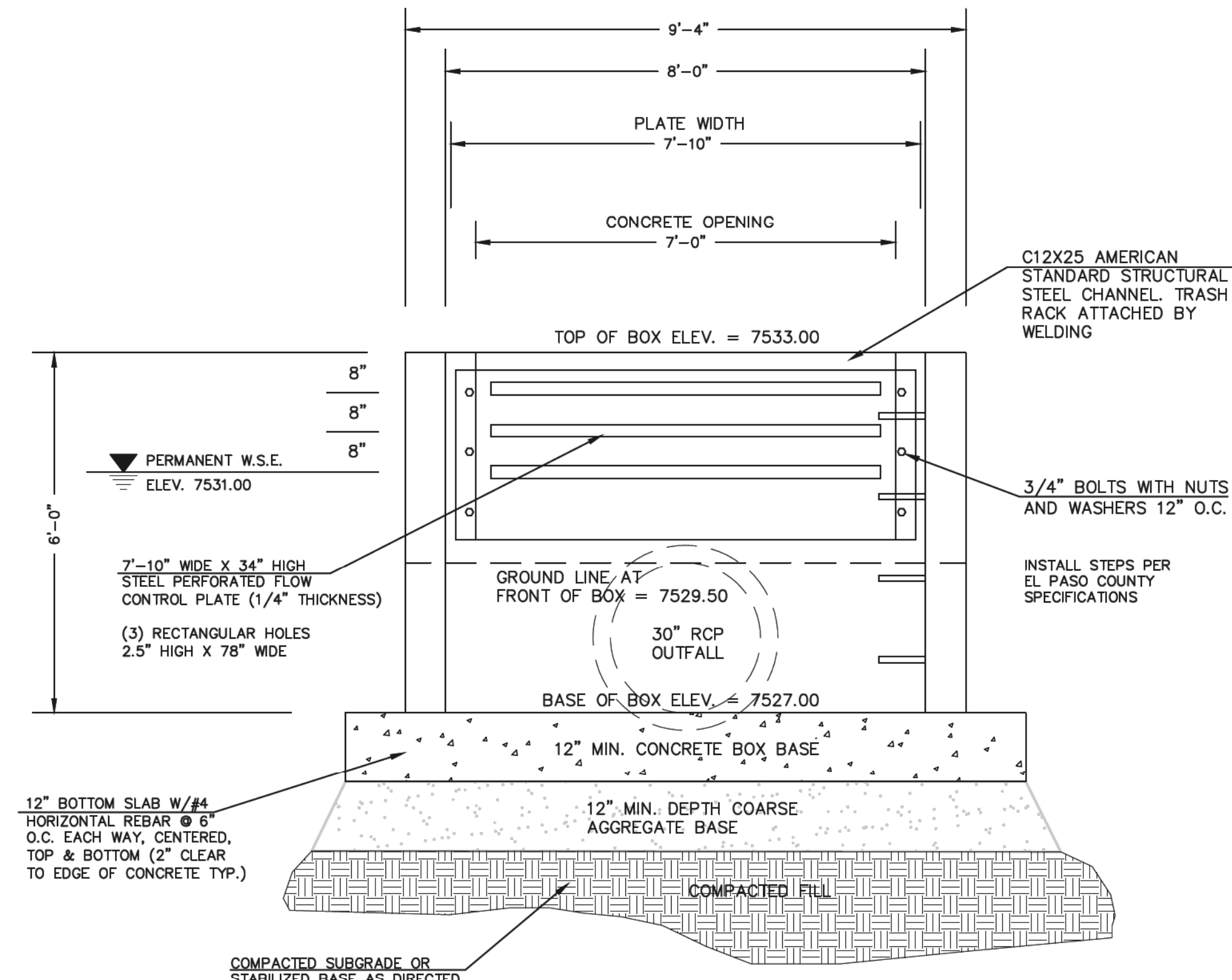
TRASH RACK
ALL WELDED CONSTRUCTION
N.T.S.



100 YR. W.S.E. = 7534.61
50 YR. W.S.E. = 7533.96
2 YR. W.S.E. = 7531.22 / 5 YR. W.S.E. = 7531.35



8'x4' SWQ OUTLET BOX WITH FLOW CONTROL PLATE
SCALE: 1"=2'



8'x4' SWQ OUTLET BOX WITH FLOW CONTROL PLATE
SCALE: 1"=2'

(ALL MATERIALS PER EL PASO COUNTY SPECIFICATIONS)

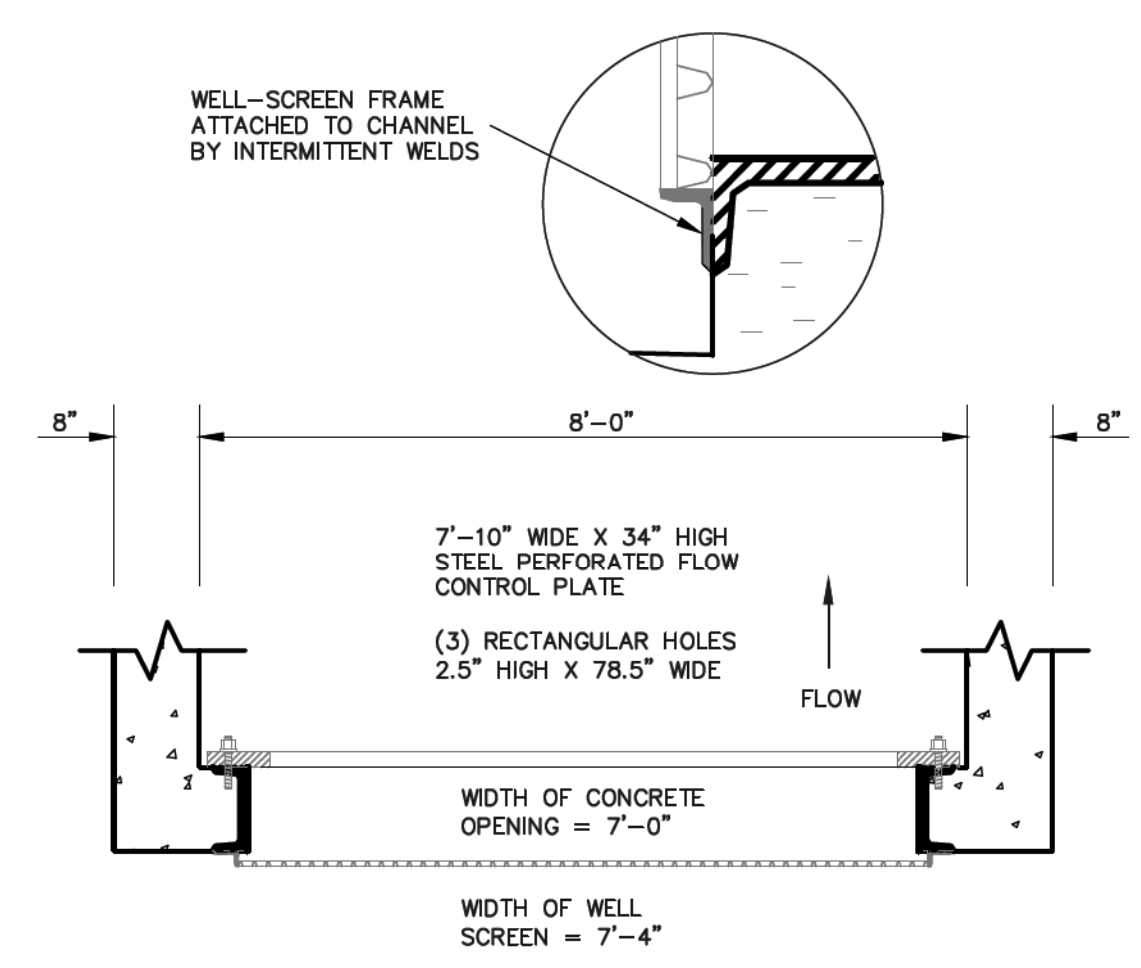
- ORIFICE PLATE NOTES:
- INSTALL HOLES AS SHOWN ON DETAIL TO RIGHT.
 - PROVIDE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE.

EURV AND WOCV TRASH RACKS:

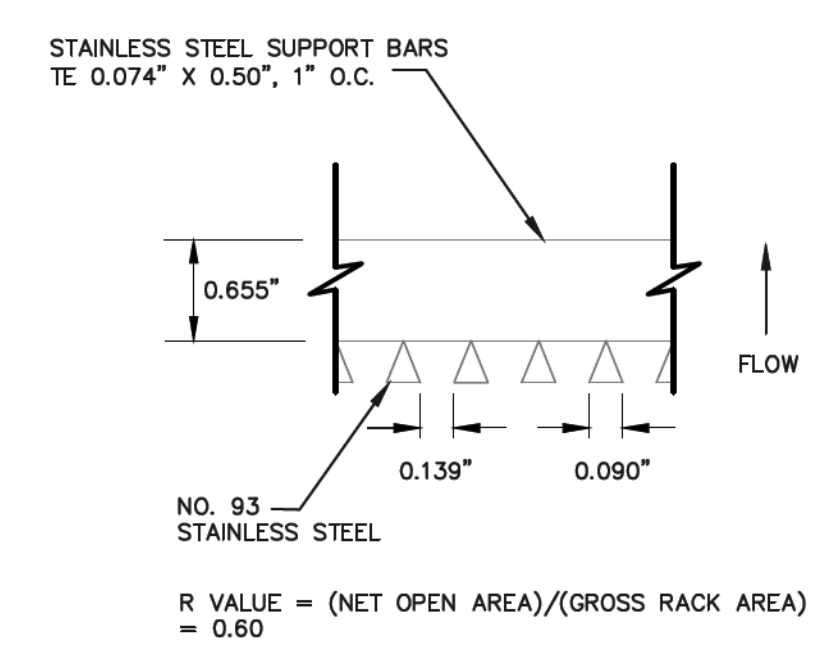
- WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
- BAR GRATE TRASH RACKS SHALL BE ALUMINUM AND SHALL BE BOLTED USING STAINLESS STEEL HARDWARE.
- STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF RACK.

OVERFLOW TRASH RACKS:

- ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED AND LOCKABLE OR BOLTABLE ACCESS PANELS.
- TRASH RACKS SHALL BE STAINLESS STEEL, ALUMINUM, OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
- TRASH RACKS SHALL BE DESIGNED SUCH THAT THE DIAGONAL DIMENSION OF EACH OPENING IS SMALLER THAN THE DIAMETER OF THE OUTLET PIPE.
- STRUCTURAL DESIGN OF THE TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.



SECTION B



SECTION C

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

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NO.	REVISION	DATE
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MARC A WHORTON, COLORADO P.E. #37155
9/17/18
DATE

CLASSIC
CONSULTING ENGINEERS & SURVEYORS
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

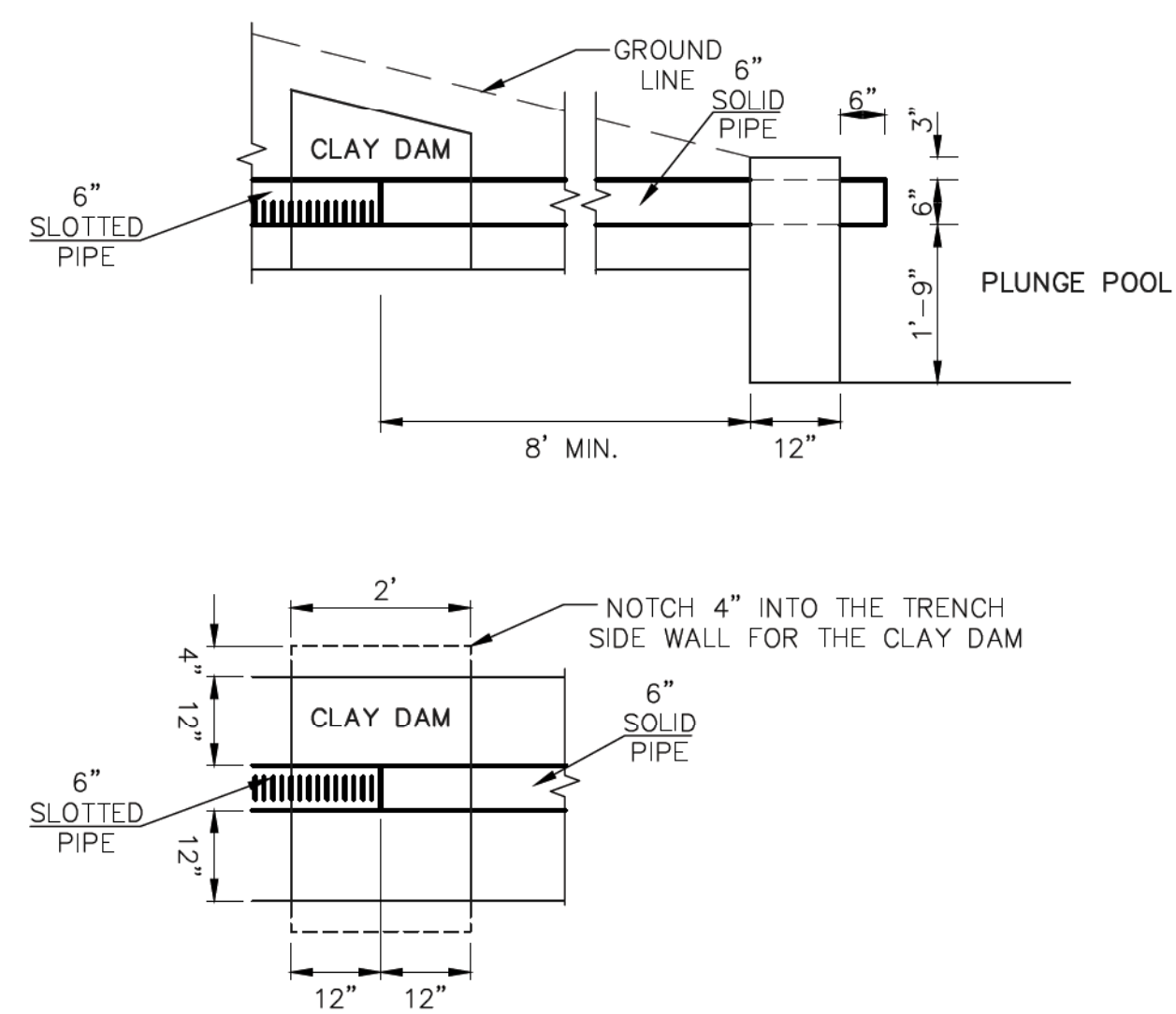
FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT
DETENTION/SWQ OUTLET BOX DESIGN
DAM ID - 080459

DESIGNED BY	MAW	SCALE	DATE
1-4-18			

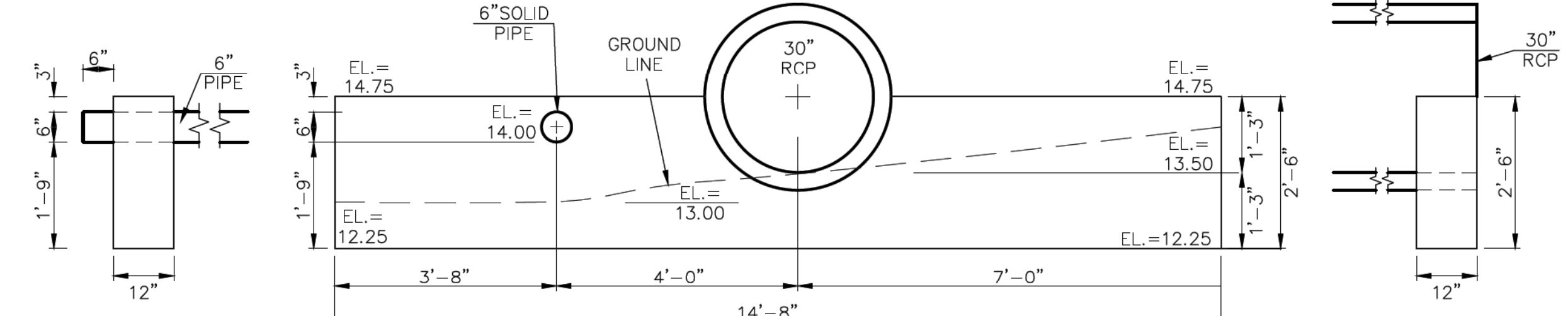
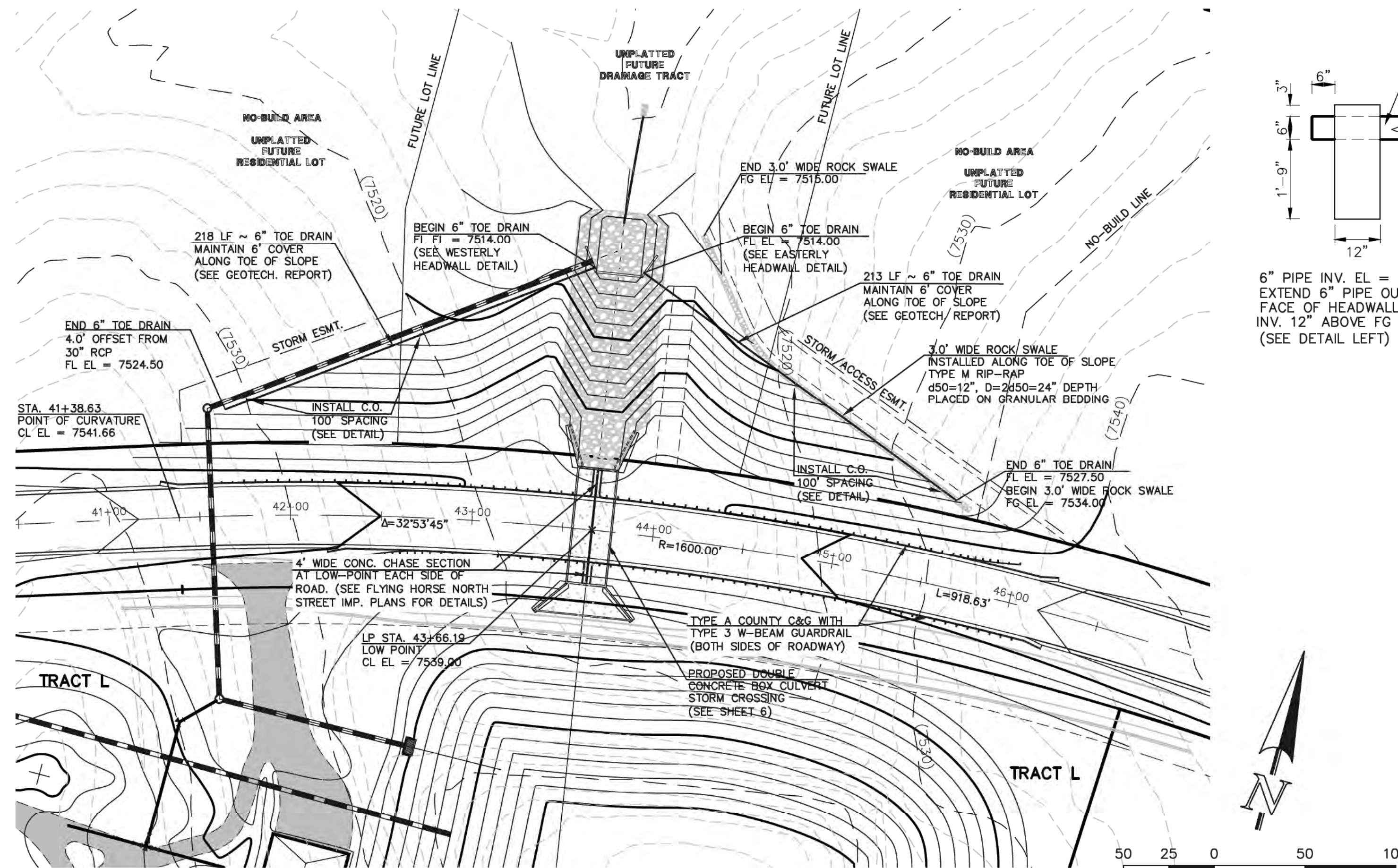
DRAWN BY	MAW	(H) 1"= 2'	SHEET 9 OF 14

CHECKED BY	(V) 1"= 2'	JOB NO.	1096.11

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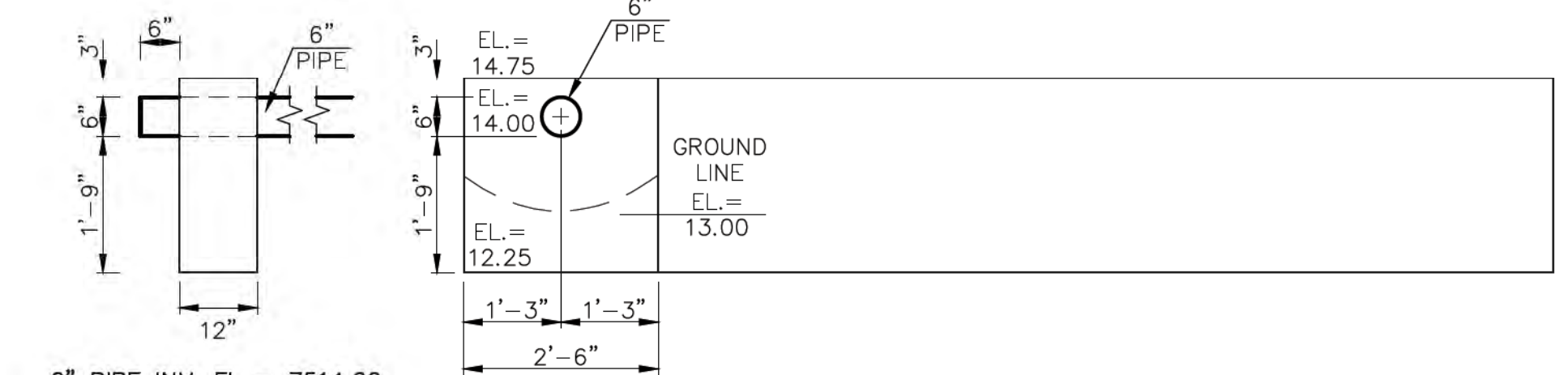


NOTE:
 CONSTRUCT CLAY DAM A MINIMUM OF 10 FEET UPGRADIENT OF TIE-IN TO PLUNGE POOL TOE WALL. THE CLAY DAM SHALL EXTEND ONE FOOT BEYOND THE DRAIN PIPE CONNECTION TO SOLID PIPE, IN BOTH DIRECTIONS. THE CLAY DAM SHALL EXTEND TO WITHIN ONE FOOT OF THE BLANKET DRAIN OR DOWNSTREAM DAM SURFACE. THE CLAY DAM SHALL BE NOTCHED INTO THE SIDEWALLS OF THE PIPE TRENCH A MINIMUM OF 4 INCHES. THE CLAY SOILS SHALL HAVE A MINIMUM PI OF 25 AND COMPACTED TO THE REQUIREMENTS OF STRUCTURAL FILL.



WESTERLY OUTLET HEADWALL

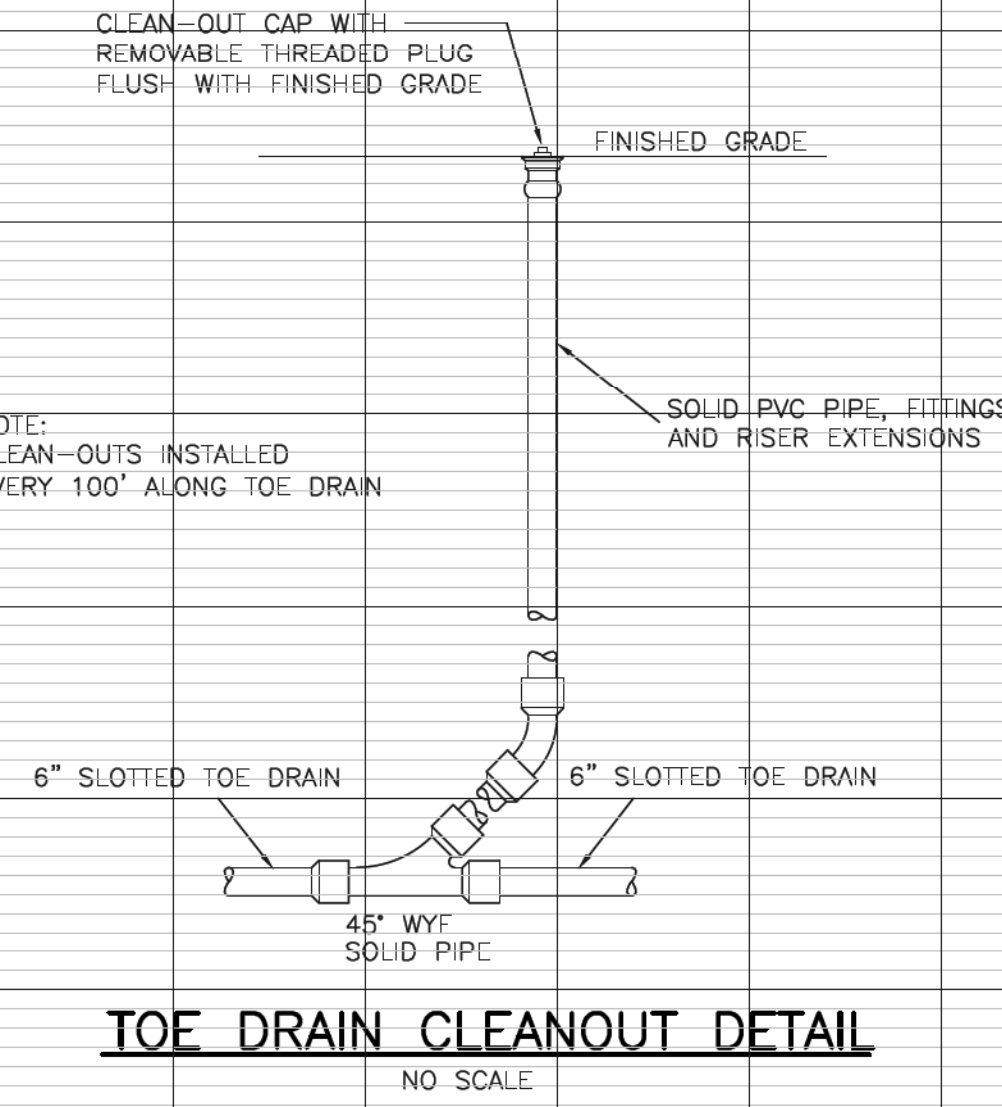
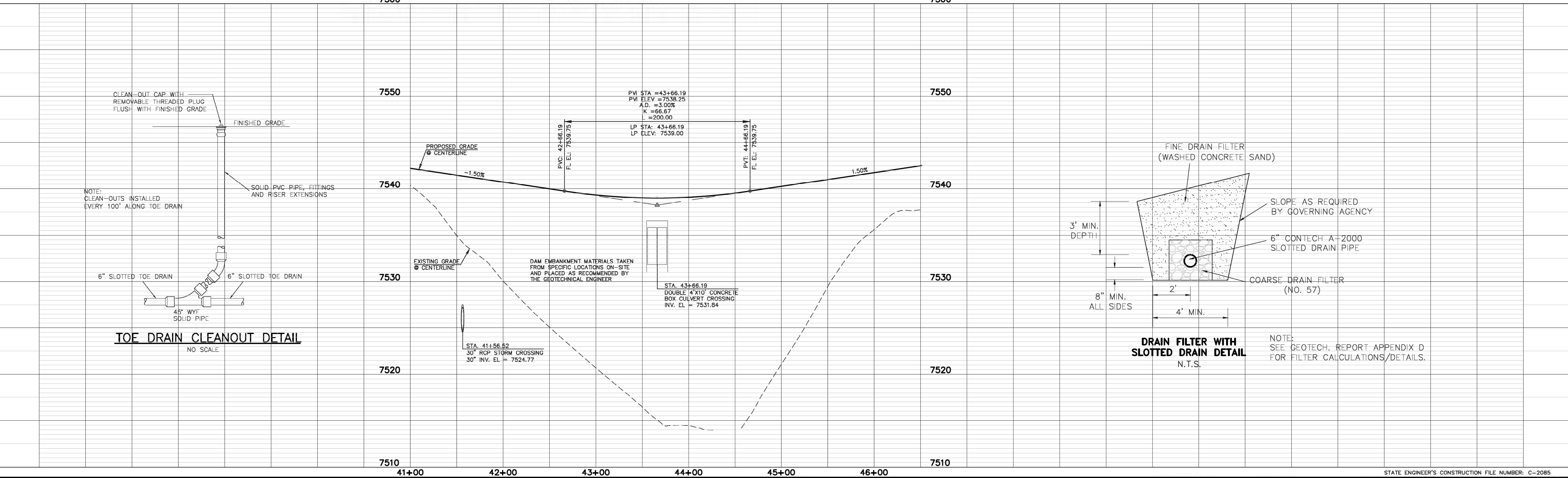
6" PIPE INV. OUT EL = 7514.00
 30" RCP INV. OUT EL = 7513.50
 EL AT TOP OF SADDLEWALL = 7514.75
 EL AT BOTTOM SADDLEWALL = 7512.25



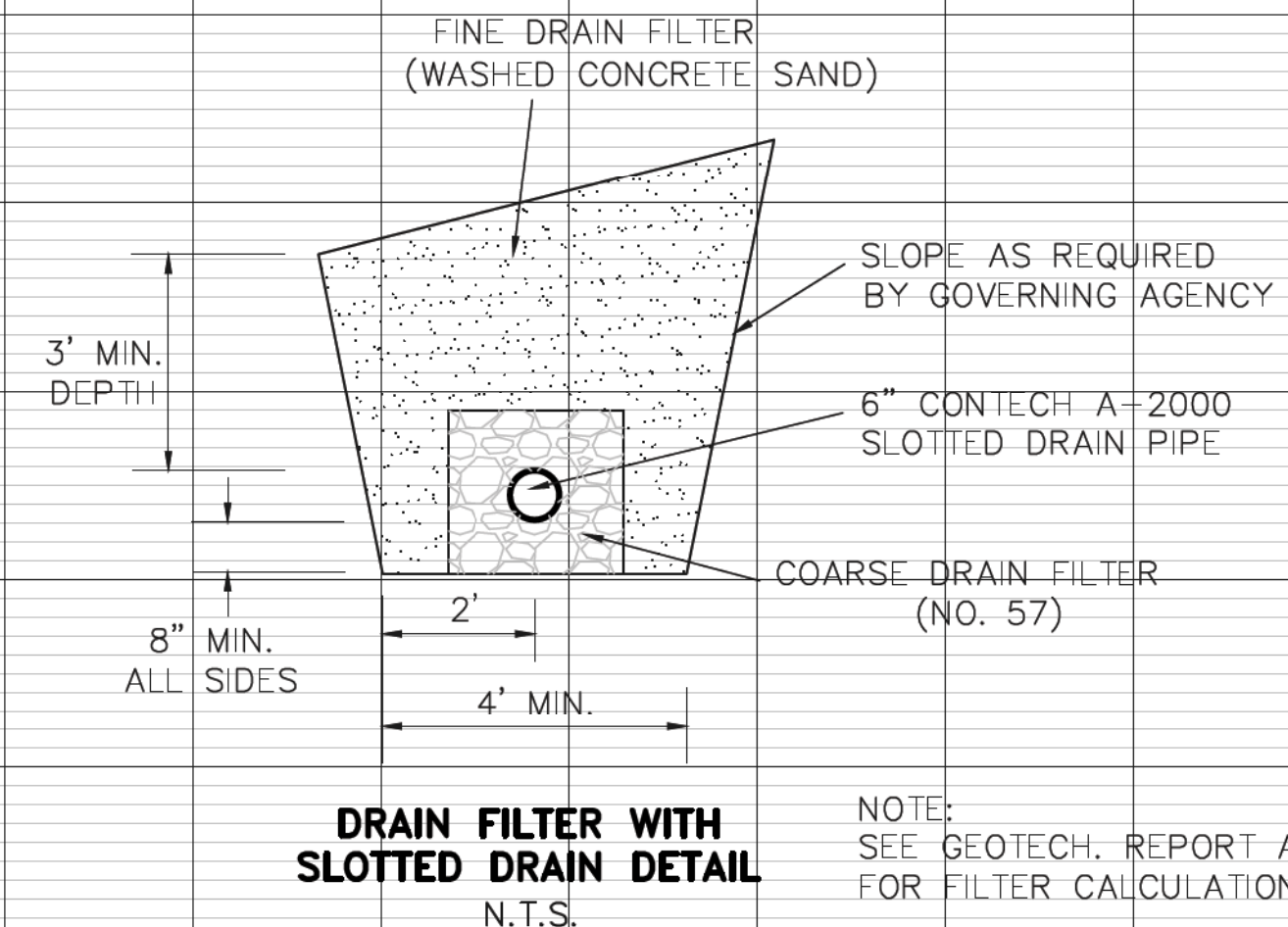
EASTERLY OUTLET HEADWALL

6" PIPE INV. OUT EL = 7514.00
 EL AT TOP OF SADDLEWALL = 7514.75
 EL AT BOTTOM SADDLEWALL = 7512.25

7560 STAGECOACH ROAD SCALE: 1" = 50'



TOE DRAIN CLEANOUT DETAIL
 NO SCALE



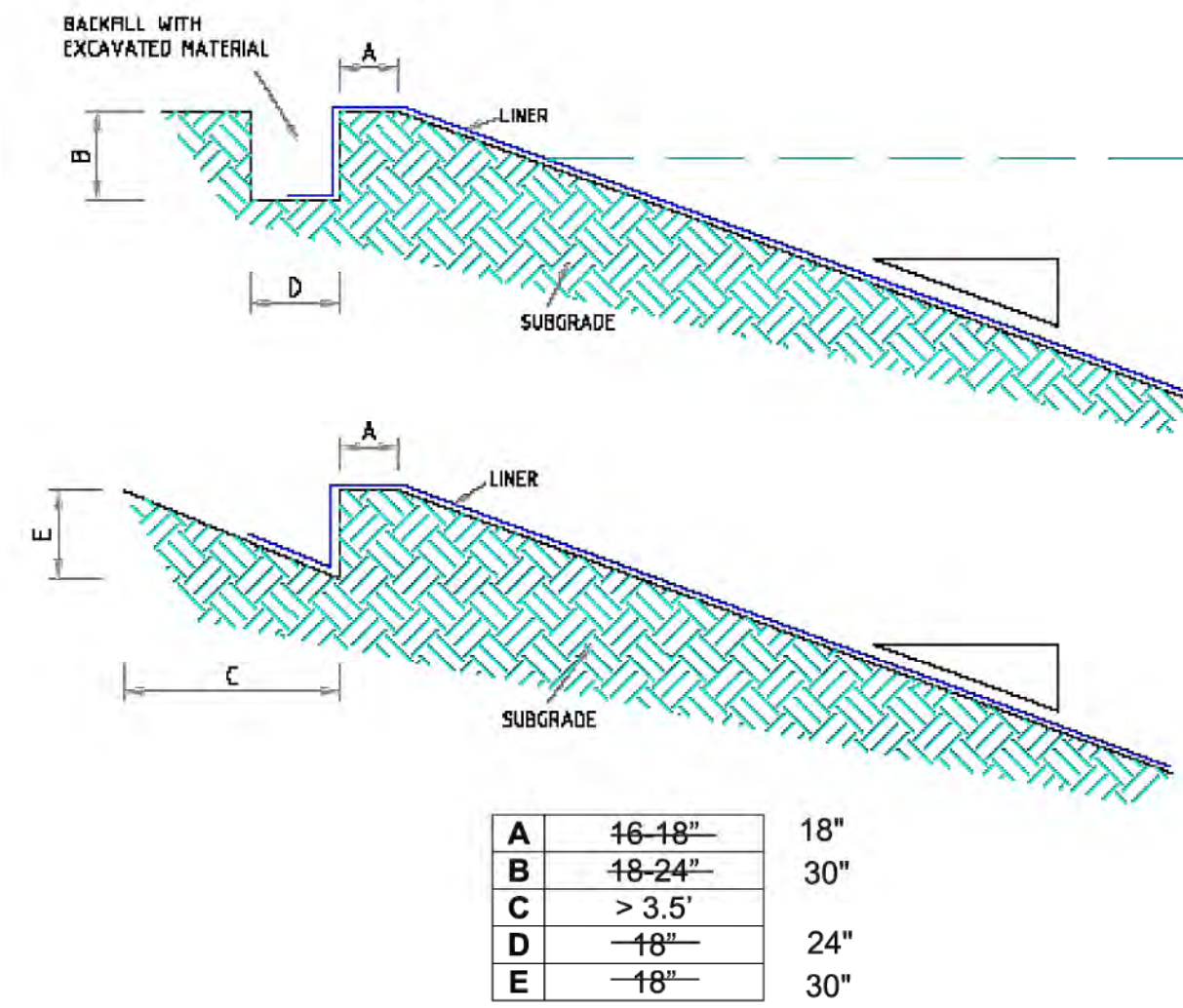
DRAIN FILTER WITH SLOTTED DRAIN DETAIL
 N.T.S.

NOTE:
 SEE GEOTECH. REPORT APPENDIX D FOR FILTER CALCULATIONS/DETAILS.

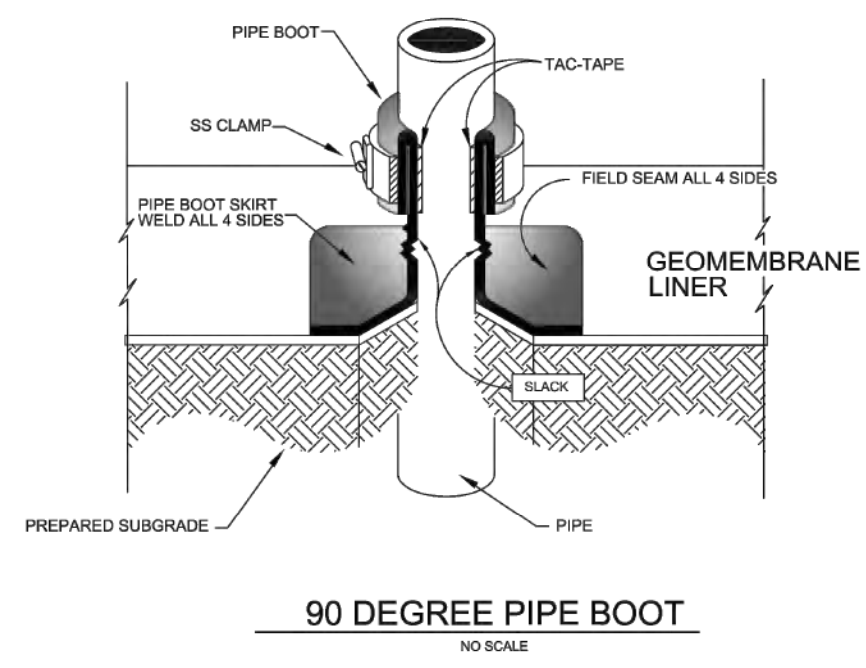
<p>48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS 811 UTILITY NOTIFICATION CENTER OF COLORADO IT'S THE LAW</p> <p>THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE 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 UNDERGROUND UTILITIES.</p>		<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>REVISED PER STATE COMMENTS</td> <td>5-14-18</td> </tr> <tr> <td>2</td> <td>REVISED PER COUNTY COMMENTS</td> <td>7-31-18</td> </tr> </table>	NO.	REVISION	DATE	1	REVISED PER STATE COMMENTS	5-14-18	2	REVISED PER COUNTY COMMENTS	7-31-18	<p>REVIEW: PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC</p> <p>MARC A. WHORTON / COLORADO P.E. #37155</p>	<p>DATE: 9/17/18</p>	<p>STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085</p> <p>FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT ROAD EMBANKMENT / TOE DRAIN DESIGN DAM ID - 080459</p> <p>DESIGNED BY: MAW DRAWN BY: MAW CHECKED BY:</p> <p>SCALE: (H) 1" = 50' (V) 1" = 5'</p> <p>DATE: 1-4-18 SHEET 10 OF 14 JOB NO. 1096.11</p>	<p>CLASSIC CONSULTING ENGINEERS & SURVEYORS</p> <p>619 N. Cascade Avenue, Suite 200 Colorado Springs, Colorado 80903 (719) 785-0790 (719) 785-0799 (fax)</p>
NO.	REVISION	DATE													
1	REVISED PER STATE COMMENTS	5-14-18													
2	REVISED PER COUNTY COMMENTS	7-31-18													

N:\090611\DRAWINGS\CONSTRUCTION\Jurisdictional Plans\10-40_POND - Embankment Profiles - Toe Drain REV.dwg, 8/22/2018 1:25:11 PM, 1:1

14 Appendix C – Anchor Trench examples



LINER ANCHOR TRENCH DETAIL



MATERIALS AND DIMENSIONS SHOWN ARE FOR GENERAL INFORMATION ONLY, AND SHOULD BE DETERMINED BY SITE SPECIFIC DESIGN.

Drawing Title: STANDARD DETAIL 90 DEGREE PIPE BOOT
 Date: 11/26/11
 Scale: 4" = 9'
 Sheets Shown: 4 of 9

Consolidated Divisions Inc.
 5885 W. Airport Road
 Suite 100
 Skiesville, CO 80135
 Phone: 303-471-1522
 Fax: 303-470-3197

Watersaver Company
 5870 E. 56th Ave.
 Commerce City, CO 80022
 Phone: 303-289-1818
 Fax: 303-287-3136

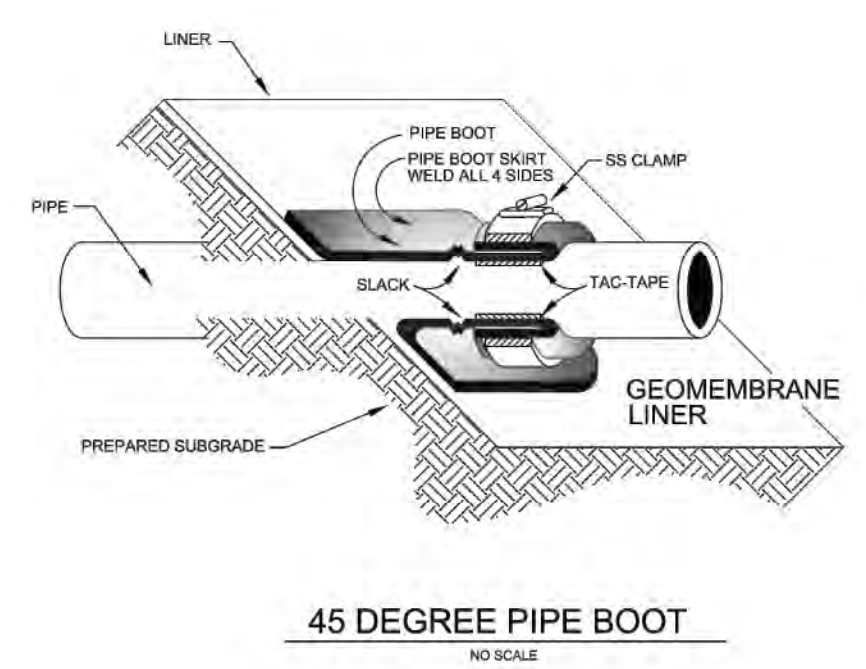
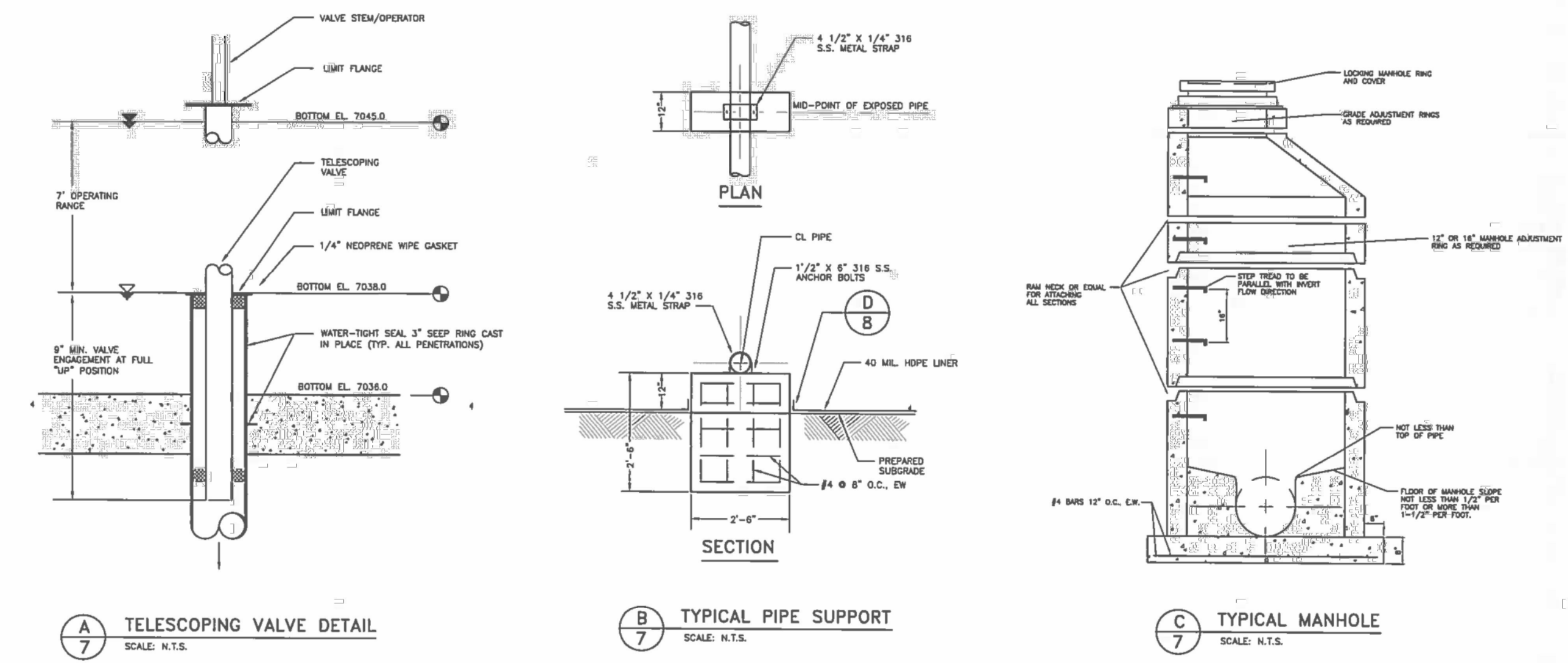
SOLMAX TECHNICAL DATA SHEET
 LLDPE 7000 Series, 30 mils
 Black, Smooth
 Solmax, 2901 Blvd. Marie-Victorie, Vancouver, Qc, Canada, J3X 1P7
 Tel: (450) 929-1234 Fax: (450) 929-2559 www.solmax.com

PROPERTY	TEST METHOD	FREQUENCY ⁽¹⁾	UNIT	1020269
SPECIFICATIONS				
Thickness (Nominal ±10%) (11)	ASTM D-5199	Every roll	mils	30.0
Resin Density	ASTM D-1505	Certified	g/cc	< 0.926
Melt Index - 190/2.16 (max.)	ASTM D-1238	Certified	g/10 min	1.0
Sheet Density (8)	ASTM D-792	1/Batch	g/cc	≤ 0.939
Carbon Black Content (9)	ASTM D-4218	Every 2 rolls	%	2.0 - 3.0
Carbon Black Dispersion	ASTM D-5596	Every 10 rolls	Category	Cat. 1 & Cat. 2
OIT - standard (avg.)	ASTM D-3895	Per formulation	min	100
Tensile Properties (min. avg.) (2)				
Strength at Break	ASTM D-6693	Every 5 rolls	ppi	114
Elongation at Break			%	800
2% Modulus (max.)	ASTM D-5323	Per formulation	ppi	1,800
Tear Resistance (min. avg.)	ASTM D-1004	Every 10 rolls	lbf	15
Puncture Resistance (min. avg.)	ASTM D-4833	Every 10 rolls	lbf	42
Dimensional Stability	ASTM D-1204	Certified	%	± 2
Multi-Axial Tensile (min.)	ASTM D-5617	Per formulation	%	30
Oven Aging - % retained after 90 days	ASTM D-5721	Per formulation	%	35
STD OIT (min. avg.)	ASTM D-3895		%	60
HP OIT (min. avg.)	ASTM D-5885		%	60
UV Resistance - % retained after 1600 hr	GRI-GM-11	Per formulation	%	35
HP-OIT (min. avg.)	ASTM D-5885		%	35
SUPPLY SPECIFICATIONS (Roll dimensions may vary ±1%)				
Roll Dimension - Width	-	-	ft	22.3
Roll Dimension - Length	-	-	ft	1,000
Area (Surface/Roll)	-	-	sf	22,300

NOTES
 1. Testing frequency based on standard roll dimensions and one batch is approximately 180,000 lbs (or one railcar).
 2. Machine Direction (MD) and Cross Machine Direction (CMD or TD) average values should be on the basis of 5 specimens each direction.
 3. Correlation table is available for ASTM D792 vs ASTM D1505. Both methods give the same results.
 4. Correlation table is available for ASTM D1603 vs ASTM D4218. Both methods give the same results.
 5. The minimum average thickness is ± 10% of the nominal value.
 * All values are nominal test results, except when specified as minimum or maximum.
 * The information contained herein is provided for reference purposes only and is not intended as a warranty or guarantee. Final determination of suitability for use contemplated is the sole responsibility of the user. SOLMAX assumes no liability in connection with the use of this information.
 Solmax is not a design professional and has not performed any design services to determine if Solmax's goods comply with any project plans or specifications, or with the application or use of Solmax's goods to any particular system, project, purpose, installation or specification.

MF-CQ-34 (Rev. 03 / 2010-07-28) Revision Date: 2016-03-02

LAKE LINER SPECIFICATION



MATERIALS AND DIMENSIONS SHOWN ARE FOR GENERAL INFORMATION ONLY, AND SHOULD BE DETERMINED BY SITE SPECIFIC DESIGN.

Drawing Title: STANDARD DETAIL 45 DEGREE PIPE BOOT
 Date: 11/26/11
 Scale: 7" = 9'
 Sheets Shown: 7 of 9

Consolidated Divisions Inc.
 5885 W. Airport Road
 Suite 100
 Skiesville, CO 80135
 Phone: 303-471-1522
 Fax: 303-470-3197

Watersaver Company
 5870 E. 56th Ave.
 Commerce City, CO 80022
 Phone: 303-289-1818
 Fax: 303-287-3136

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS 811
 UTILITY NOTIFICATION CENTER OF COLORADO
 IT'S THE LAW

THE LOCATIONS OF EXISTING 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 UNDERGROUND UTILITIES.

NO.	REVISION	DATE
1	REVISED PER STATE COMMENTS	5-4-18

REVIEW: PREPARED UNDER THE DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORON, COLORADO P.E. #37155
 DATE: 9/17/18

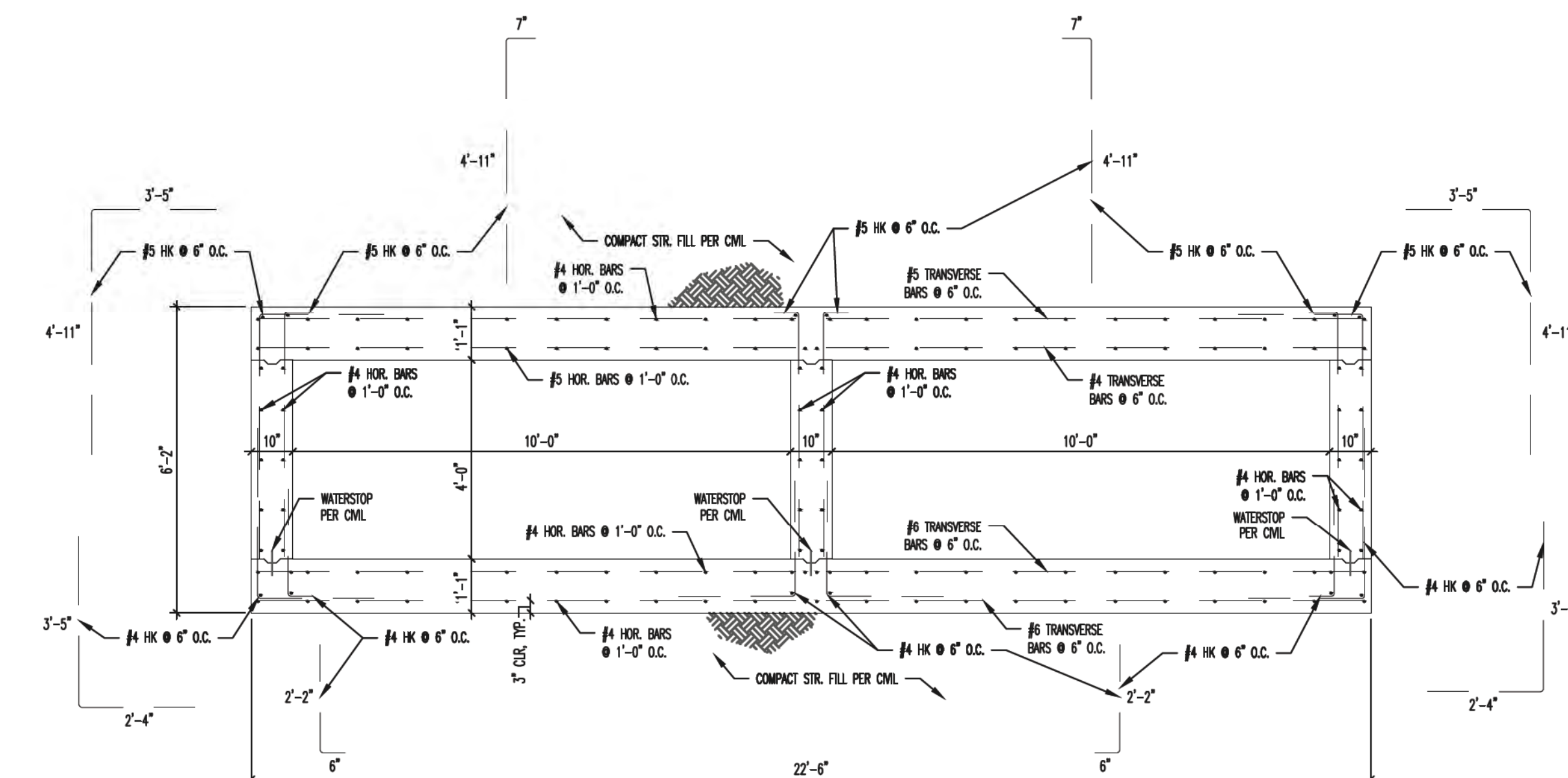
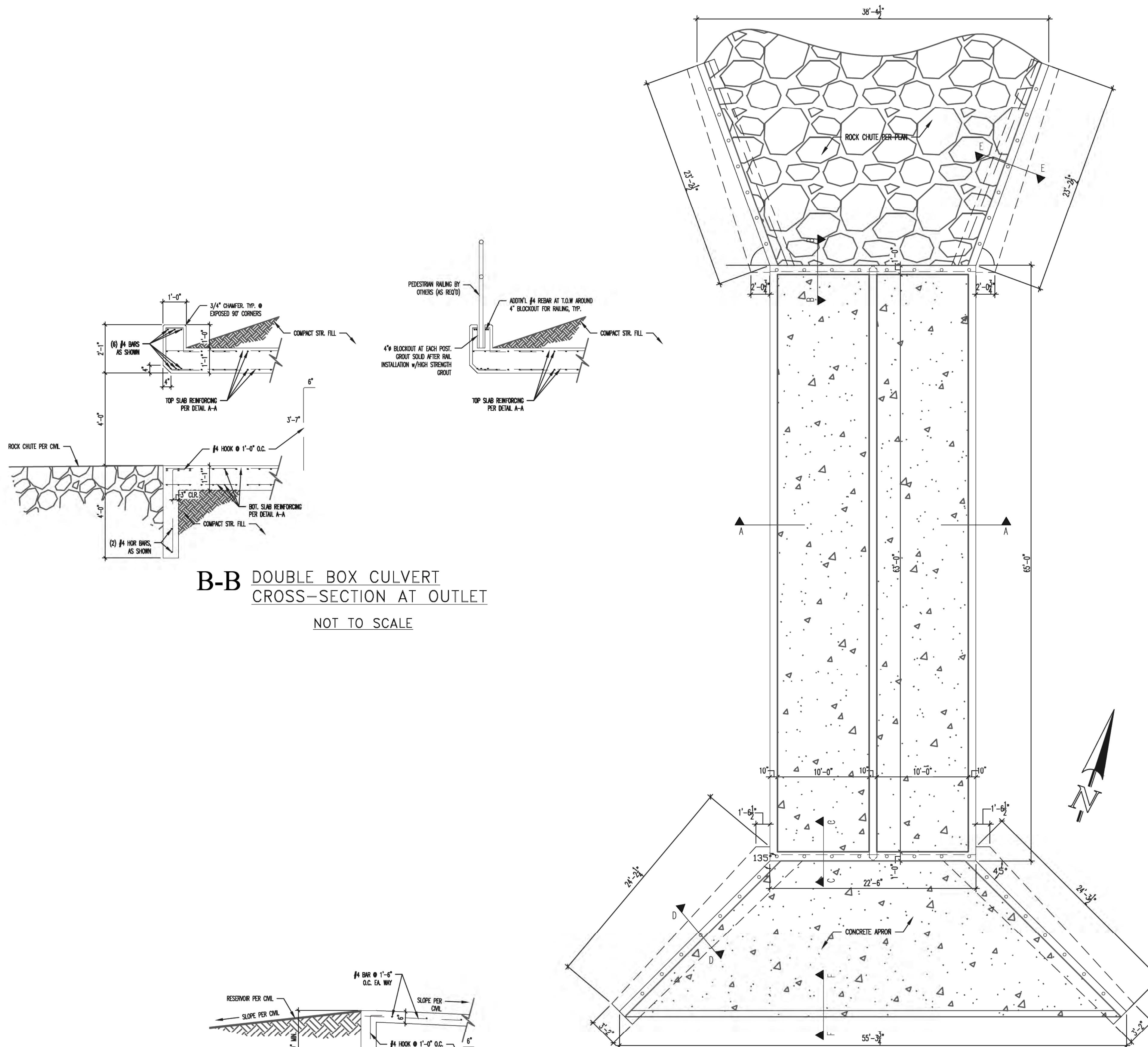
STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT
 LAKE LINER DETAIL SHEET
 DAM ID - 080459

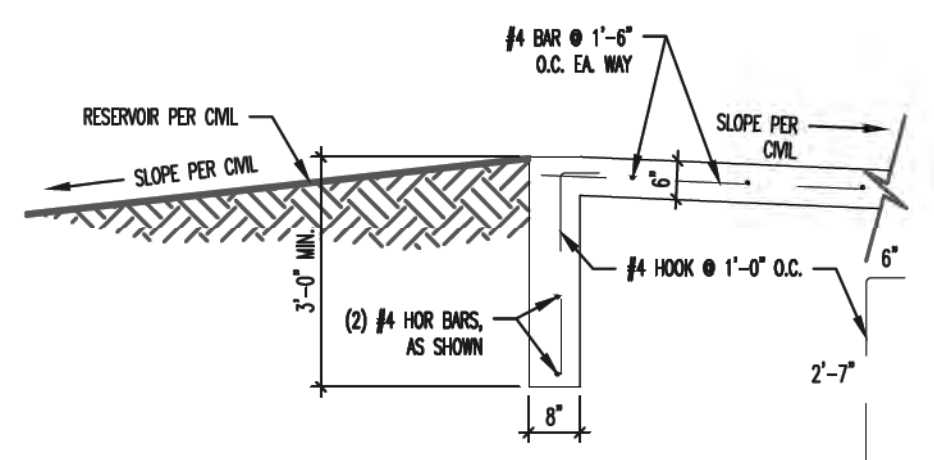
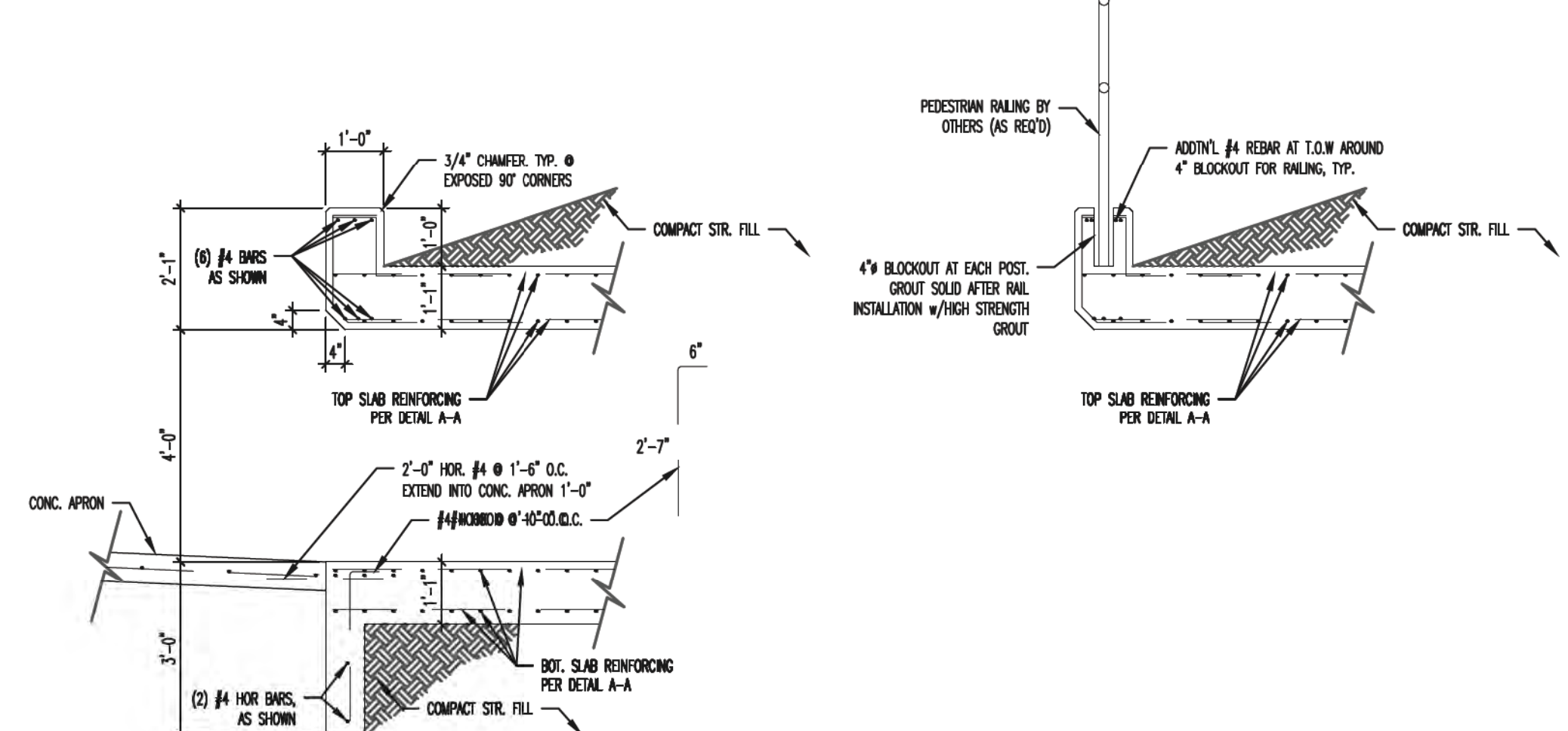
CLASSIC CONSULTING ENGINEERS & SURVEYORS

DESIGNED BY: MAW SCALE: DATE: 1-4-18
 DRAWN BY: MAW (H) 1" = N/A SHEET 11 OF 14
 CHECKED BY: (V) 1" = N/A JOB NO. 1096.11

619 N. Cascade Avenue, Suite 200 Colorado Springs, Colorado 80903 (719) 785-0790 (719) 785-0799 (Fax)



B-B DOUBLE BOX CULVERT CROSS-SECTION AT OUTLET NOT TO SCALE



DOUBLE BOX CULVERT PLAN NOT TO SCALE

A-A DOUBLE BOX CULVERT CROSS-SECTION NOT TO SCALE

C-C DOUBLE BOX CULVERT CROSS-SECTION AT INLET NOT TO SCALE

F-F CONCRETE APRON TOE WALL AT INLET NOT TO SCALE

ALL STRUCTURAL DETAILS SHOWN HEREON PROVIDED BY:
ENTECH ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, CO 80907
 719-531-5599

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

<p>48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS 811 UTILITY NOTIFICATION OF COLORADO IT'S THE LAW</p> <p>THE LOCATIONS OF EXISTING 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 UNDERGROUND UTILITIES.</p>	NO. REVISION	DATE	REVIEW:

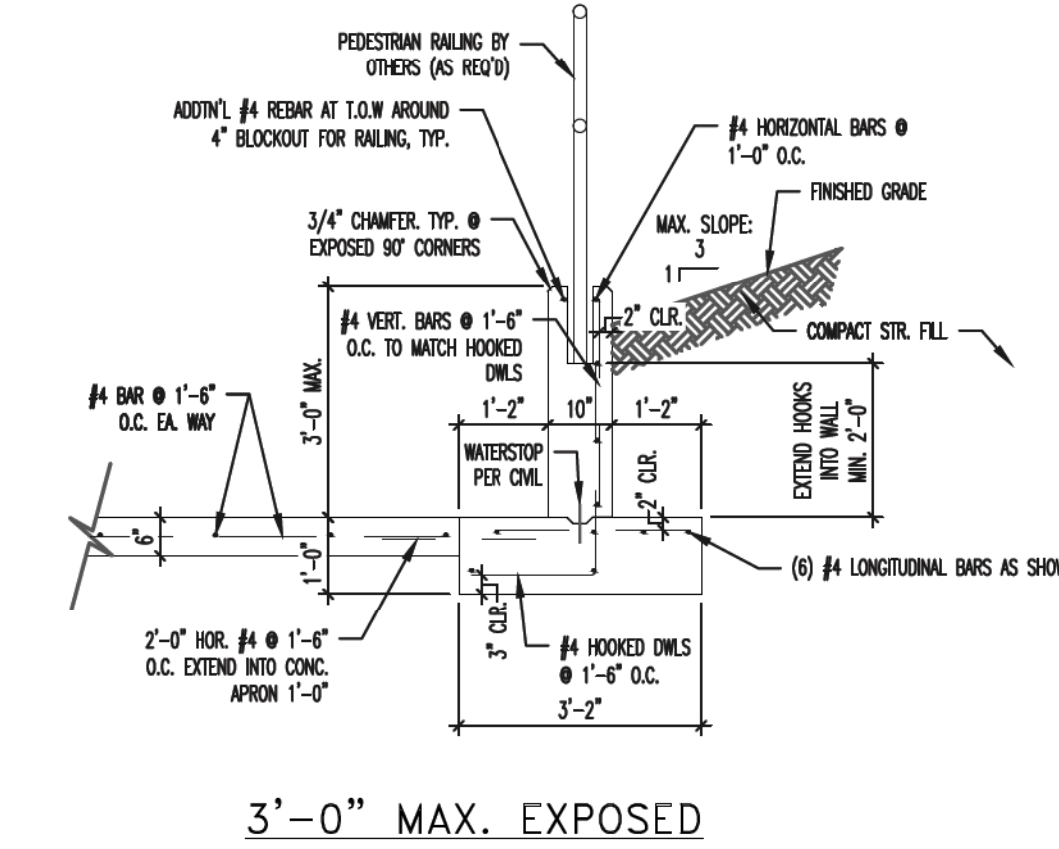
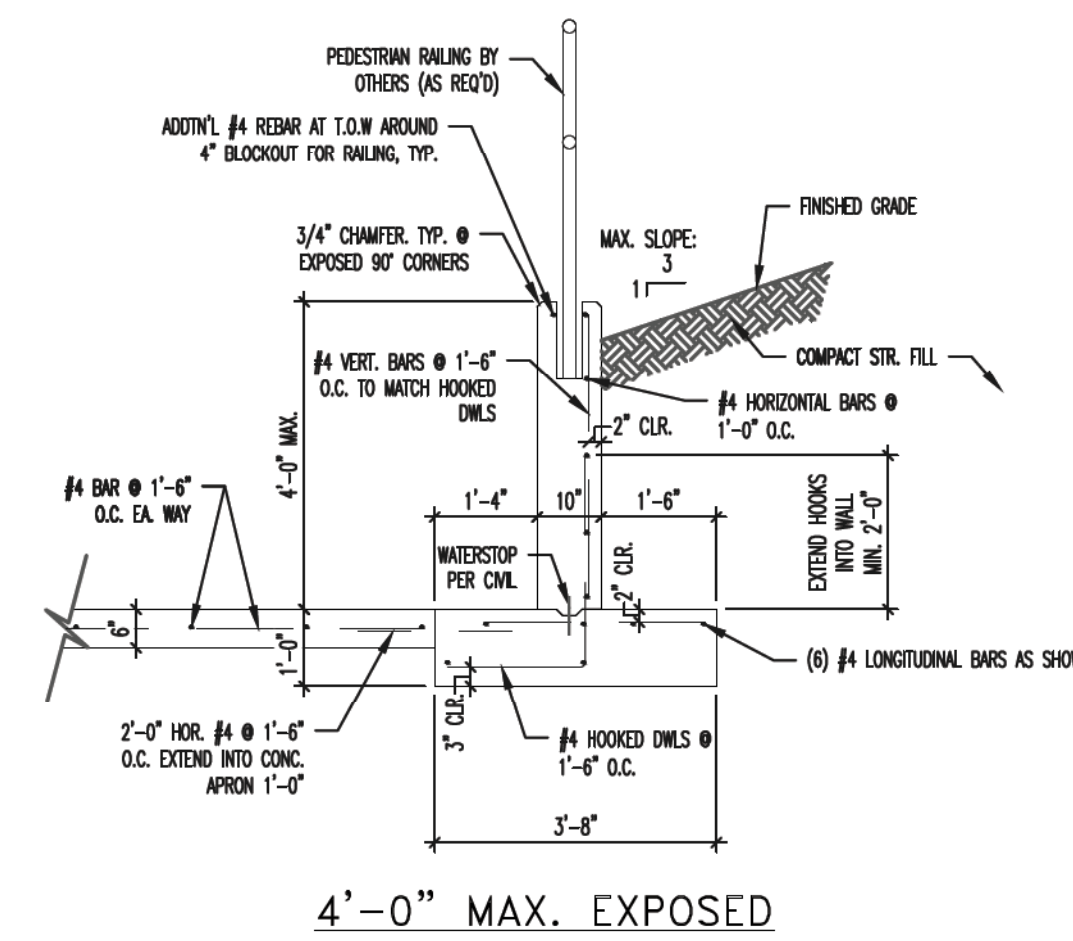
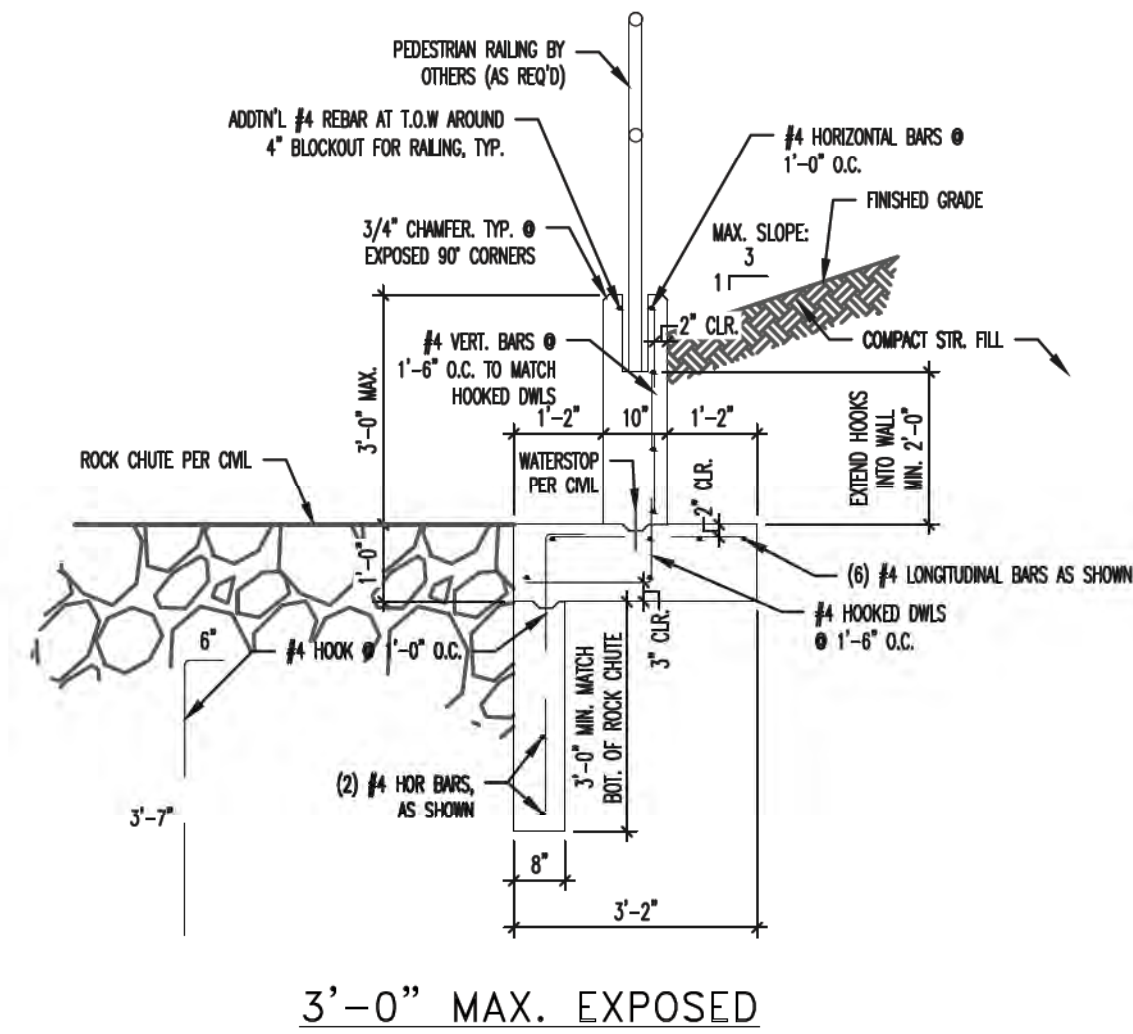
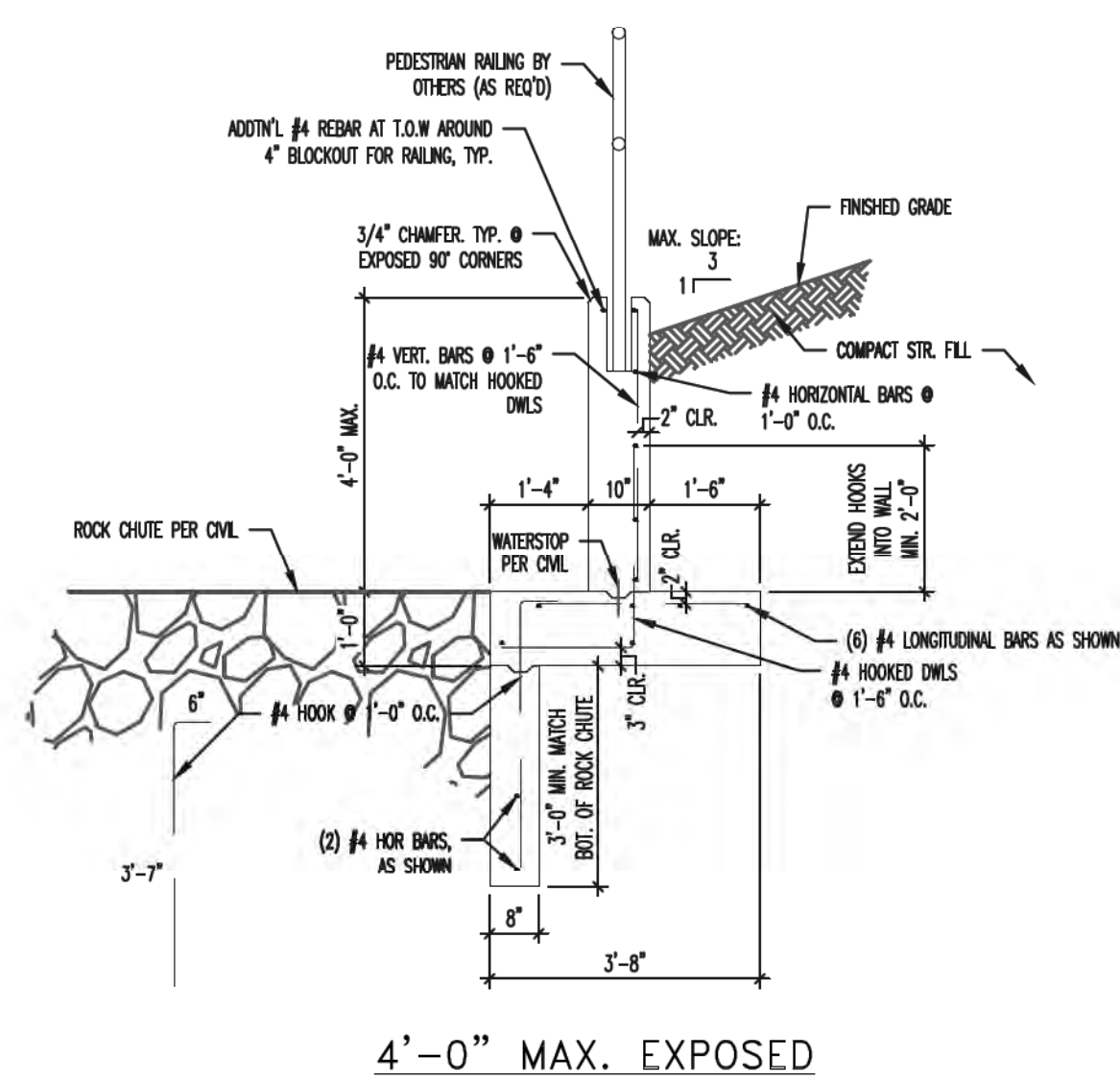
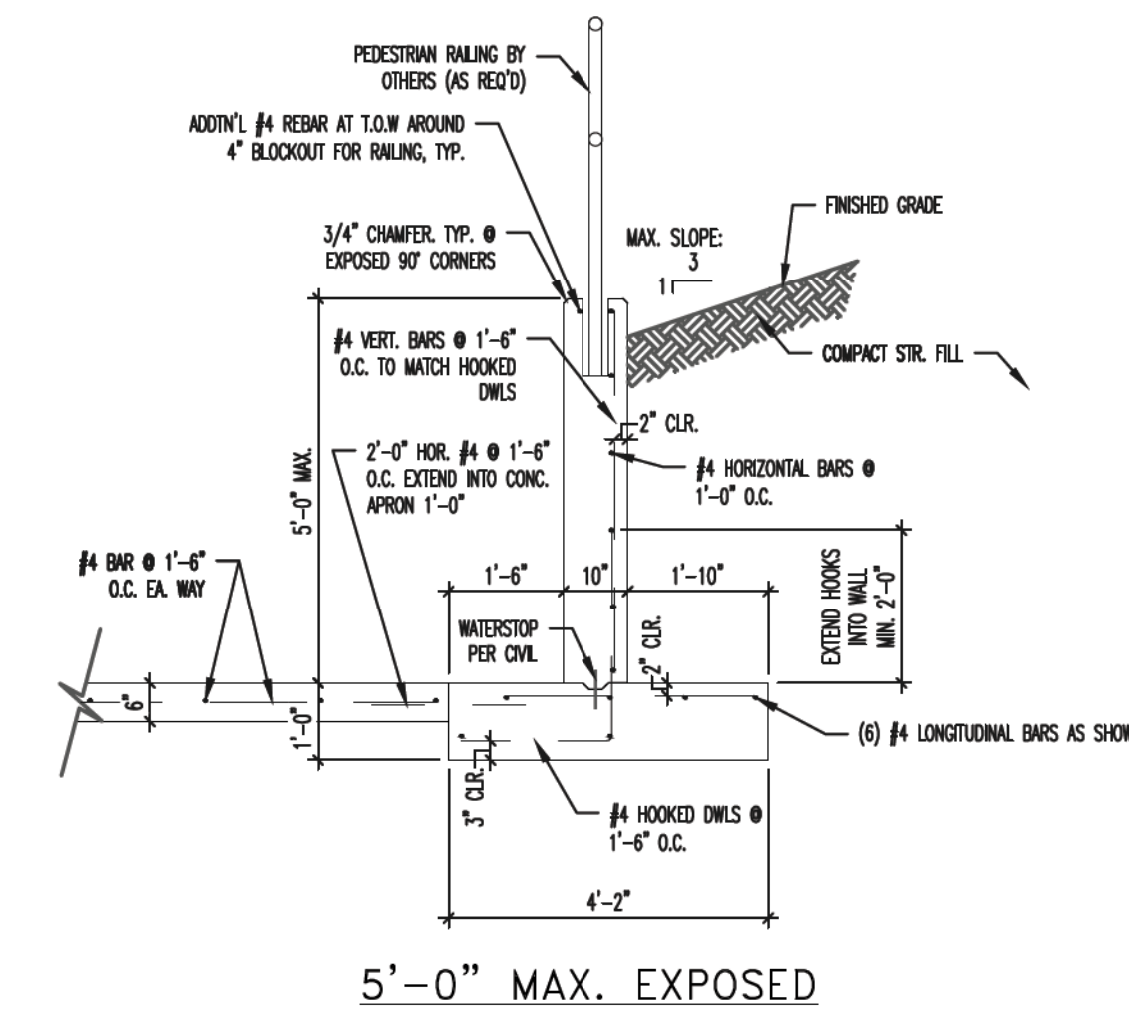
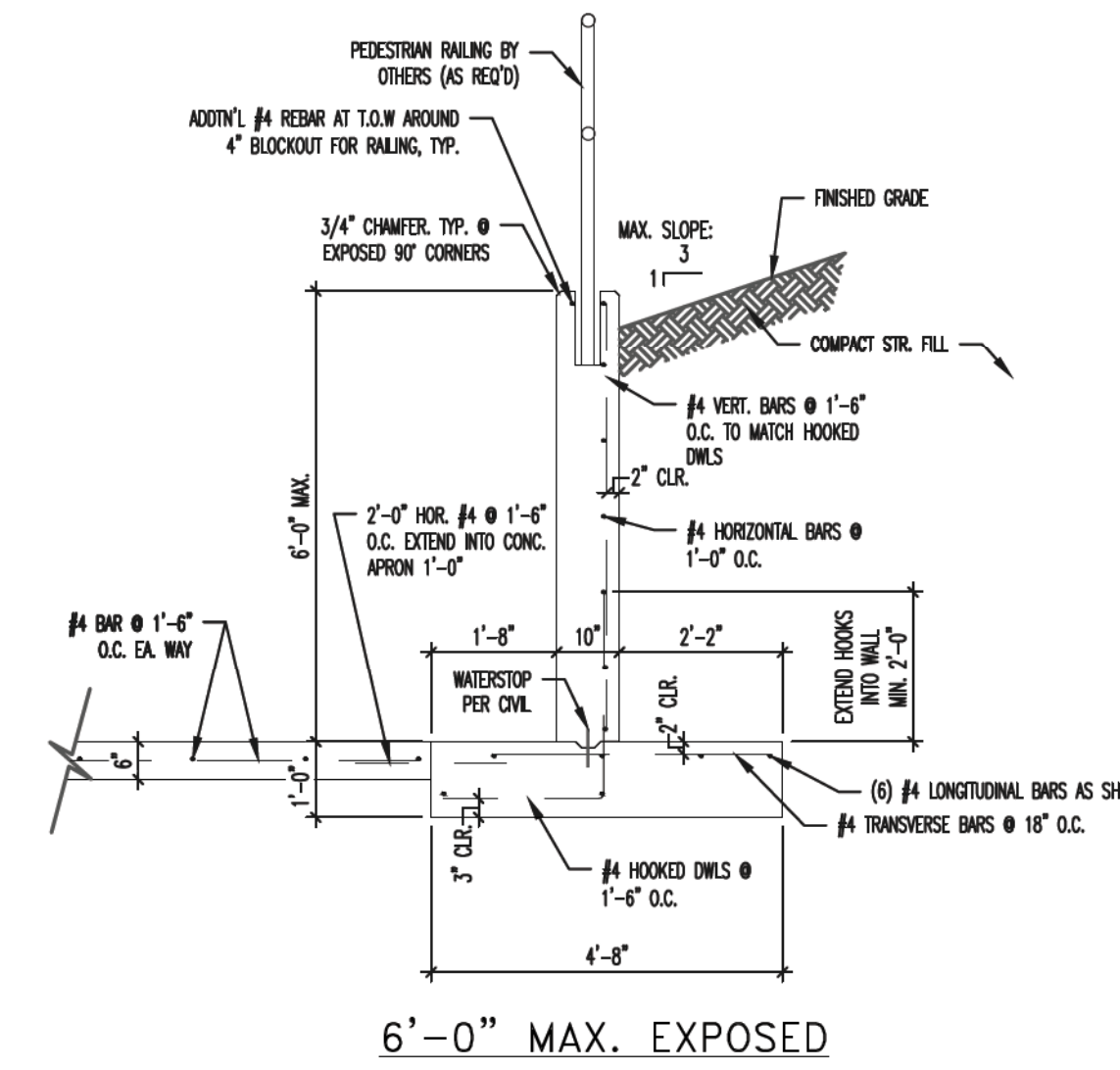
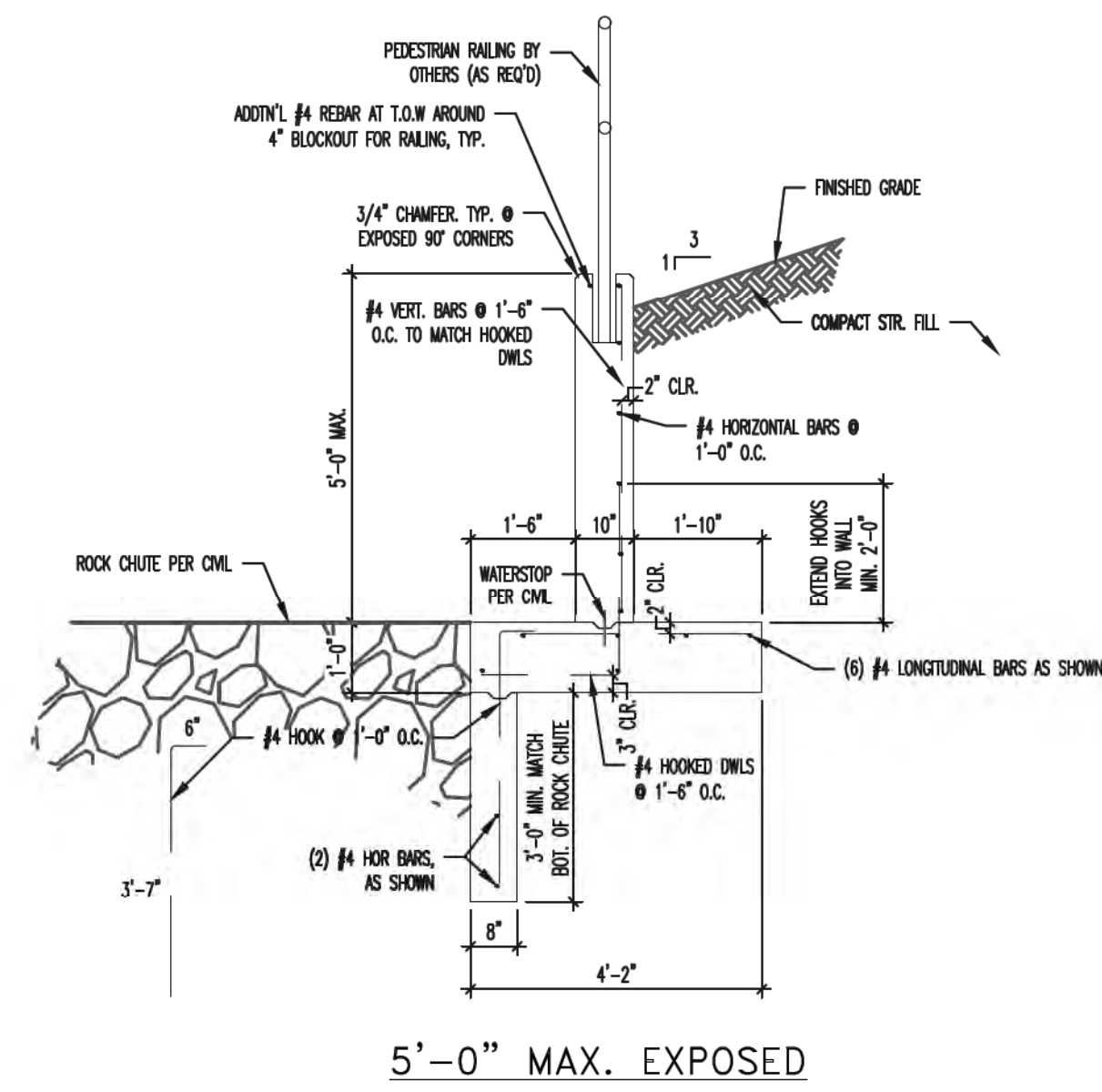
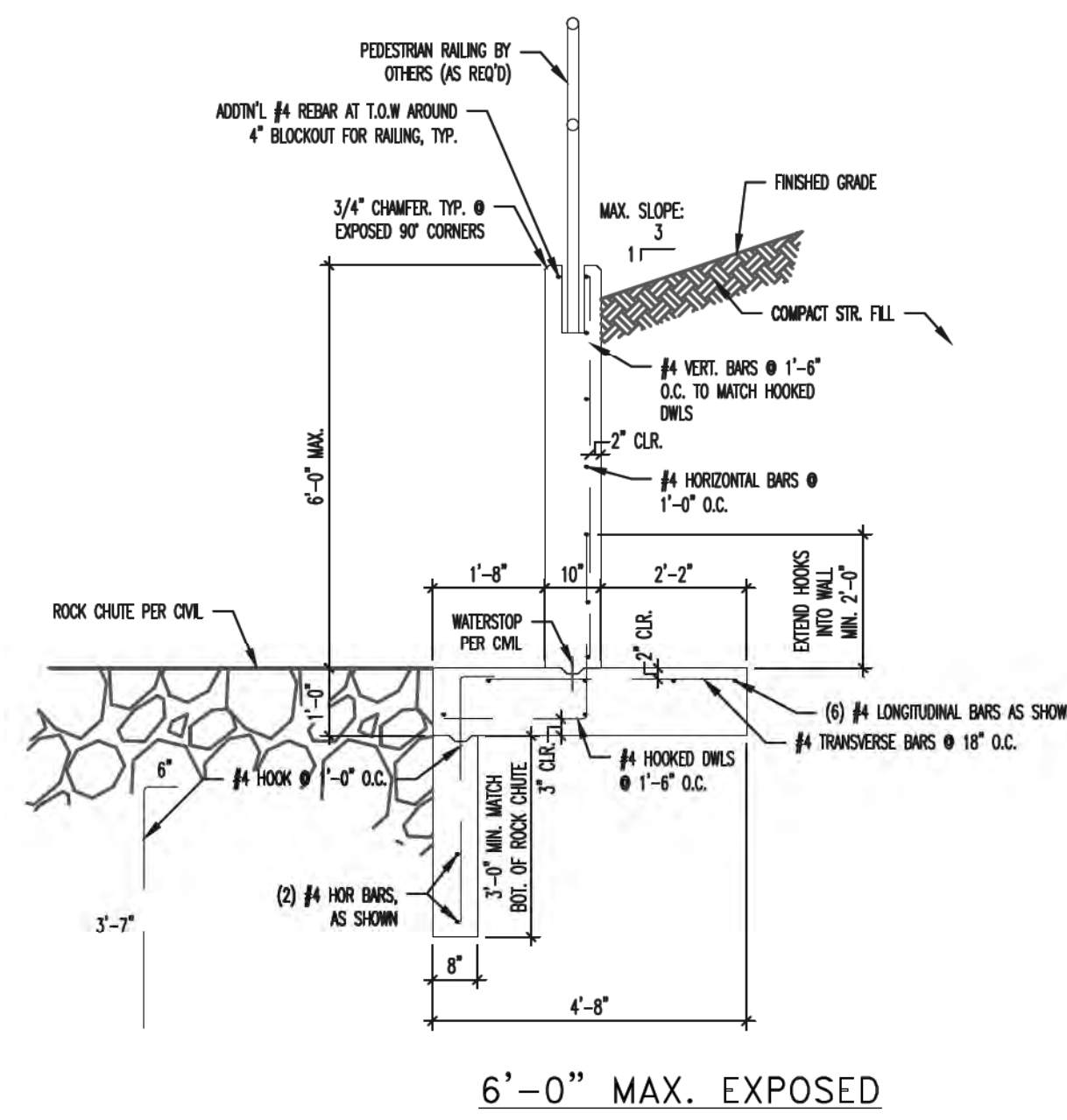
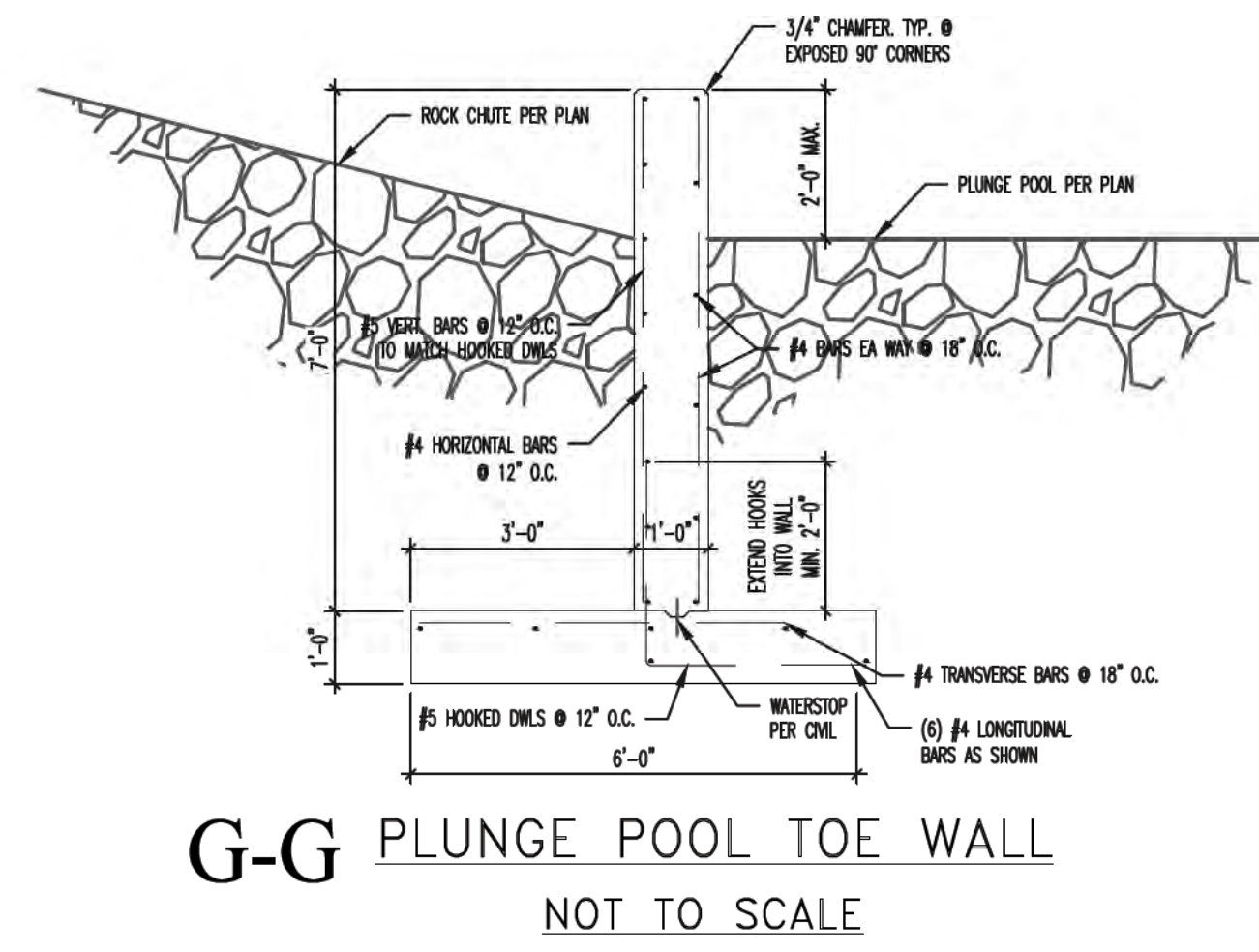
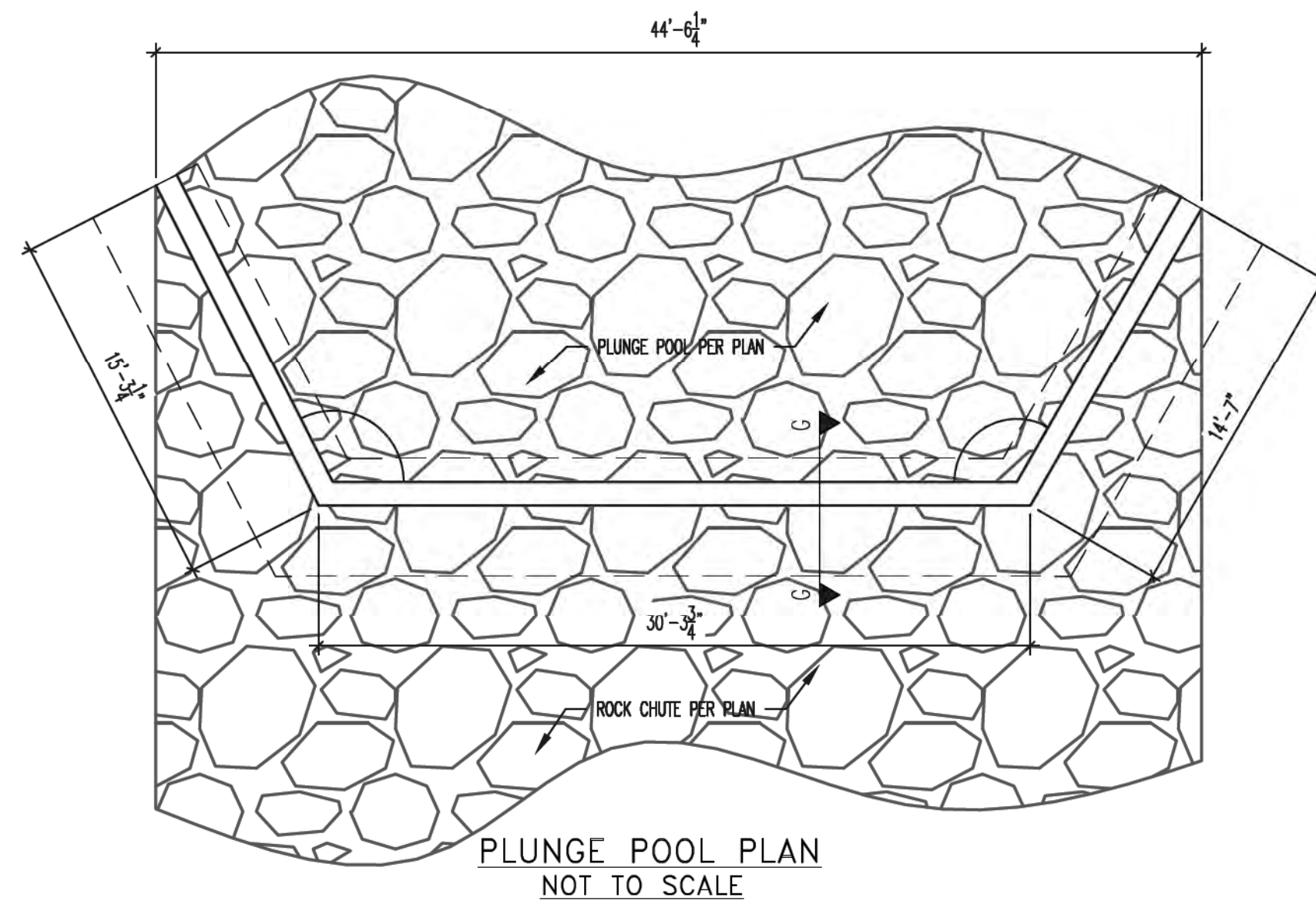
9/17/18
 DATE



619 N. Cascade Avenue, Suite 200
 Colorado Springs, Colorado 80903
 (719) 785-0790
 (719) 785-0799 (Fax)

FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT			
EMBANKMENT SPILLWAY STRUCTURAL DETAILS			
DAM ID - 080459			
DESIGNED BY	MAW	SCALE	DATE 1-4-18
DRAWN BY	MAW	(H) 1" = N/A	SHEET 12 OF 14
CHECKED BY	(V) 1" = N/A	JOB NO.	1096.11

N:\090611\DRAININGS\CONSTRUCTION\Anastacio\Plans\12-AD_POND - Box Culvert Details.dwg, 8/22/2018 1:49:31 PM, 1:1



E-E WING WALL CROSS-SECTIONS AT OUTLET
NOT TO SCALE

D-D WING WALL CROSS-SECTIONS AT INLET
NOT TO SCALE

ALL STRUCTURAL DETAILS SHOWN HEREON PROVIDED BY:
ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
719-531-5599

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

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NO. REVISION	DATE

REVIEW:
PREPARED UNDER DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC
MARC A. WHORTON, COLORADO P.E. #37155
DATE: 9/17/18

CLASSIC
CONSULTING ENGINEERS & SURVEYORS
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FLYING HORSE NORTH IRRIGATION RESERVOIR EMBANKMENT		EMBRANKMENT SPILLWAY STRUCTURAL DETAILS		DAM ID - 080459	
DESIGNED BY	MAW	SCALE	DATE	1-4-18	
DRAWN BY	MAW	(H) 1" = N/A	SHEET	13	OF 14
CHECKED BY	(V) 1" = N/A	JOB NO.	1096.11		

CLASSIC ENGINEERS & SURVEYORS

N:\190811\DRAWINGS\CONSTRUCTION\as-built\Drawn\14-LD-FOND - Details.dwg, 8/22/2018 1:55:30 PM, 1:1

TOTAL QTY		ASSEMBLY		BILL OF MATERIAL				REMARKS
QTY	EA	MARK	DESCRIPTION	GRADE	LENGTH	WEIGHT		
1	1	P11	12" sch 40 Pipe	A53	12 1/2"			
4	4	L1	L 1 1/4" x 1 1/4" x 1/4"	A36	29 1/2"			
2	2	P1	PL 1/4 x 23 1/2"	A36	23 1/2"			
4	4	XP1	#7 x 3/4 Expanded Metal x 24"	A36	16"			
4	4	P2	PL 1/4 x 23 1/2"	A36	13 3/4"			

SUBMITTAL REVIEW

NO EXCEPTIONS TAKEN

MAKE CORRECTIONS AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED (Submittal does not pertain to civil prepared documents)

Classic Consulting Engineers & Surveyors, LLC has reviewed this Submittal only for the limited purpose of checking for general conformance with the survey and civil documents prepared for this project. This review does not warranty or guarantee installation will be in conformance with these documents, nor does it relieve the contractor from adhering to all required government specifications and regulations.

By: *[Signature]* Date: 6/9/18

Project No: Proj. Mgr.

	DATE	DESCRIPTION	PM	CHK
08/06/18	FOR APPROVAL			

DRAWING & DETAIL REFERENCE(S):

STANDARDS (UNO)

MATL GRADE: A36

BOLT: 3/4" A325 TC

HOLE: 13/16"

RE-ENTRANT CORNERS: 1/2"

SURFACE PREP: SP-2

BARTON
REBAR SUPPLY

11010 220
1110 S. Bascom Avenue
SAN JOSE, CA 95128

SCREEN BOX FOR EQUALIZATION PIPE

NOTES

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

SCALE: NOT TO SCALE

DATE APPROVED:	Storm Sewer Manhole Detail Type II Standard Drawing	
André P. Brackin	REVISION DATE: 11/10/04	FILE NAME: SD_3-2

MANHOLE FOR PRIVATE SWQ OUTLET PIPING

2" MIN. STD. LETTERING STAMPED INTO CONCRETE

CONC. CURB PAN

SCALE: NOT TO SCALE

DATE APPROVED:	Storm Sewer Manhole Details Standard Drawing	
9/16/10	REVISION DATE: 9/16/10	FILE NAME: SD_3-5

STATE ENGINEER'S CONSTRUCTION FILE NUMBER: C-2085

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