FOREST LAKES FILING NO. 6

COUNTY OF EL PASO, STATE OF COLORADO

CONSTRUCTION PLANS

DECEMBER 2020

(SECTIONS 27 AND 28, TOWNSHIP 11 SOUTH, RANGE 67 WEST)

GENERAL CONSTRUCTION NOTES:

1. 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 LOCATED AND PRESERVE ANY AND ALL UTILITIES.
2. BEFORE COMMENCING ANY EXCAVATION, CALL **1-800-922-1987** FOR EXISTING UTILITY LOCATIONS.
3. 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.
4. 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 PLANNING AND COMMUNITY DEVELOPMENT (PCD).
5. ALL STATIONING IS CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE CENTERLINE UNLESS OTHERWISE INDICATED.
6. 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.
7. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC ECM APPENDIX K – 1.2C.
8. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
9. BUILDING CONTRACTORS WILL BE RESPONSIBLE FOR CONSTRUCTING POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
10. 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 PLANNING AND COMMUNITY DEVELOPMENT PRIOR TO CONSTRUCTION.
11. 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.
12. 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
13. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH ANY AND ALL APPLICABLE EL PASO COUNTY STANDARDS.
14. LOCATION OF THE CONCRETE WASHOUT, STORAGE FOR MAINTENANCE EQUIPMENT AND TEMPORARY DISPOSAL AREAS WILL BE ADDED TO THIS PLAN BY SWMP ADMINISTRATOR UPON COORDINATION WITH SELECTED CONTRACTOR.

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 SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   a. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   b. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
   c. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
   d. 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 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.
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 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.
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. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
10. 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.
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
12. 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.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
14. 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.
15. 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.

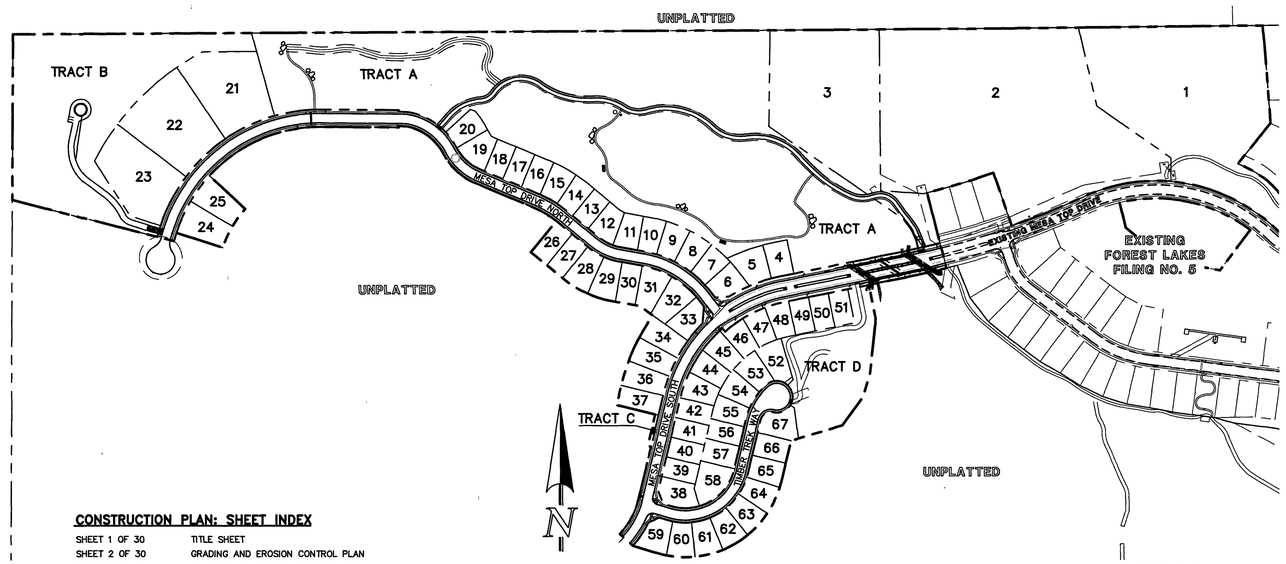
SIGNING AND STRIPING NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. 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.
3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
4. 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.
5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
7. 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."
8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
11. 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.
12. 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.
13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT **(719) 520-6819** PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

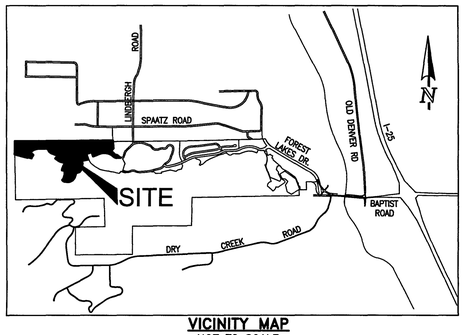
BENCHMARKS:

A. THE SOUTHWESTERLY CORNER OF LOT 15 AS PLATTED IN FOREST LAKES FILING NO. 1 BEING MONUMENTED BY A NO. 4 REBAR AND RED PLASTIC SURVEYORS CAP STAMPED "ROCKWELL PLS 19586" ELEVATION = 7039.42

B. THE NORTHEASTERLY CORNER OF LOT 2 AS PLATTED IN FOREST LAKES FILING NO. 1 BEING MONUMENTED BY A NO. 4 REBAR AND RED PLASTIC SURVEYORS CAP STAMPED "ROCKWELL PLS 19586" ELEVATION = 6966.24



KEY MAP
SCALE: 1" = 250'



VICINITY MAP
NOT TO SCALE

CONSTRUCTION PLAN: SHEET INDEX

SHEET 1 OF 30	TITLE SHEET
SHEET 2 OF 30	GRADING AND EROSION CONTROL PLAN
SHEET 3 OF 30	GRADING AND EROSION CONTROL PLAN
SHEET 4 OF 30	GRADING AND EROSION CONTROL PLAN
SHEET 5 OF 30	GRADING AND EROSION CONTROL PLAN
SHEET 6 OF 30	GRADING AND EROSION CONTROL PLAN NOTES & DETAIL SHEET
SHEET 7 OF 30	GRADING AND EROSION CONTROL PLAN DETAIL SHEET
SHEET 8 OF 30	GRADING AND EROSION CONTROL PLAN DETAIL SHEET
SHEET 9 OF 30	KEY MAP WITH TYPICAL STREET SECTIONS
SHEET 10 OF 30	STREET IMPROVEMENT PLAN (MESA TOP DRIVE SOUTH STA: 1+00-15+50)
SHEET 11 OF 30	STREET IMPROVEMENT PLAN (MESA TOP DRIVE SOUTH STA: 15+50-END)&(TIMBER TREK WAY)
SHEET 12 OF 30	STREET IMPROVEMENT PLAN (MESA TOP DRIVE NORTH STA: 1+00-9+00)
SHEET 13 OF 30	STREET IMPROVEMENT PLAN (MESA TOP DRIVE NORTH STA: 9+00-END)
SHEET 14 OF 30	STREET IMPROVEMENT PLAN (TRAIL/EMERGENCY ACCESS STA: 1+00-7+00)
SHEET 15 OF 30	STREET IMPROVEMENT PLAN (TRAIL/EMERGENCY ACCESS STA: 7+00-END)
SHEET 16 OF 30	MEDIAN AND RETAINING WALL DETAILED GRADING
SHEET 17 OF 30	PEDESTRIAN RAMP AND MAIL KIOSK DETAILED GRADING
SHEET 18 OF 30	STORM SEWER PLAN & PROFILE (MAIN A, MAIN B, & MAIN C)
SHEET 19 OF 30	STORM SEWER PLAN & PROFILE (MAIN D, MAIN E & MAIN F)
SHEET 20 OF 30	STORM SEWER PLAN & PROFILE (MAIN H)
SHEET 21 OF 30	STORM SEWER PLAN & PROFILE (MAIN G, MAIN I, MAIN J, MAIN K & POND OUTFALL)
SHEET 22 OF 30	PRIVATE POND 'B' FULL SPECTRUM DETENTION
SHEET 23 OF 30	MAIN 'A' – 48" IMPACT STRUCTURE
SHEET 24 OF 30	MAIN 'H' – 42" IMPACT STRUCTURE
SHEET 25 OF 30	POND OUTLET BOX – PROFILE VIEW
SHEET 26 OF 30	POND OUTLET BOX AND MICROPOOL DETAILS
SHEET 27 OF 30	POND OUTLET BOX DETAILS
SHEET 28 OF 30	PRIVATE POND 'B' SPILLWAY DETAILS
SHEET 29 OF 30	DETAIL SHEET
SHEET 30 OF 30	DETAIL SHEET

UTILITY CONSTRUCTION PLAN: SHEET INDEX

SHEET 1 OF 12	TITLE SHEET
SHEET 2 OF 12	SANITARY SEWER PLAN – MESA TOP DR. SOUTH STA: 1+00.00 – END
SHEET 3 OF 12	SANITARY SEWER PLAN – SANITARY SEWER OUTFALL STA: 1+00.00 – END & MESA TOP DR. NORTH STA: 1+00.00 – STA: 9+00.00
SHEET 4 OF 12	SANITARY SEWER PLAN – MESA TOP DR. NORTH STA: 9+00.00 – END
SHEET 5 OF 12	SANITARY SEWER PLAN – TIMBER TREK WAY STA: 1+00.00 – END
SHEETS 6-9 OF 12	PUBLIC 12"/8" PVC WATER SYSTEM PLAN
SHEETS 10-11 OF 12	UTILITY SERVICE PLAN
SHEET 12 OF 12	DETAIL SHEET

AGENCIES:

DEVELOPER:	FOREST LAKES RESIDENTIAL DEVELOPMENT, LLC 6385 CORPORATE DRIVE, SUITE 200 COLORADO SPRINGS, CO 80919 MR. JIM BOULTON (719) 592-3259
CIVIL ENGINEER:	CLASSIC CONSULTING ENGINEERS & SURVEYORS 619 N. CASCADE AVENUE, SUITE 200 COLORADO SPRINGS, CO 80903 MR. KYLE R. CAMPBELL, P.E. (719) 785-2800
COUNTY ENGINEERING:	DEVELOPMENT SERVICES DEPARTMENT 2880 INTERNATIONAL CIRCLE COLORADO SPRINGS, CO 80910 MR. GILBERT LaFORCE, (719) 520-7945
WATER & SANITATION DISTRICT:	FOREST LAKES METROPOLITAN DISTRICT 2 N. CASCADE AVENUE, SUITE 1280 COLORADO SPRINGS, CO 80903 MS. ANN NICHOLS, (719) 633-9500
FIRE DISTRICT:	TRI-LAKES MONUMENT FIRE PROTECTION DISTRICT 166 SECOND STREET MONUMENT, COLORADO 80132 (719) 484-0911
GAS COMPANY:	BLACK HILLS ENERGY 18985 BASE CAMP ROAD, A-7 MONUMENT, CO 80132 (888) 890-5554
ELECTRIC COMPANY:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, COLORADO 80831 (719) 495-2283
TELEPHONE COMPANY:	CENTURY LINK COMMUNICATIONS (LOCATORS) (800)-922-1987 A.T.&T. (LOCATORS) (719) 635-3674

APPROVALS:

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.

KYLE R. CAMPBELL, COLORADO P.E. #29794
FOR AND ON THE BEHALF OF CLASSIC CONSULTING ENGINEERS & SURVEYORS

4-9-21
DATE

OWNER/DEVELOPER'S STATEMENT:

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

JIM BOULTON

4-6-21
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 ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

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

DATE

PCD FILE # SF-20-027

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

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NO.	REVISION	DATE

REVIEW:

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

KYLE R. CAMPBELL, COLORADO P.E. #29794

4-9-21
DATE

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
TITLE SHEET

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= N/A		SHEET 1	OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.60

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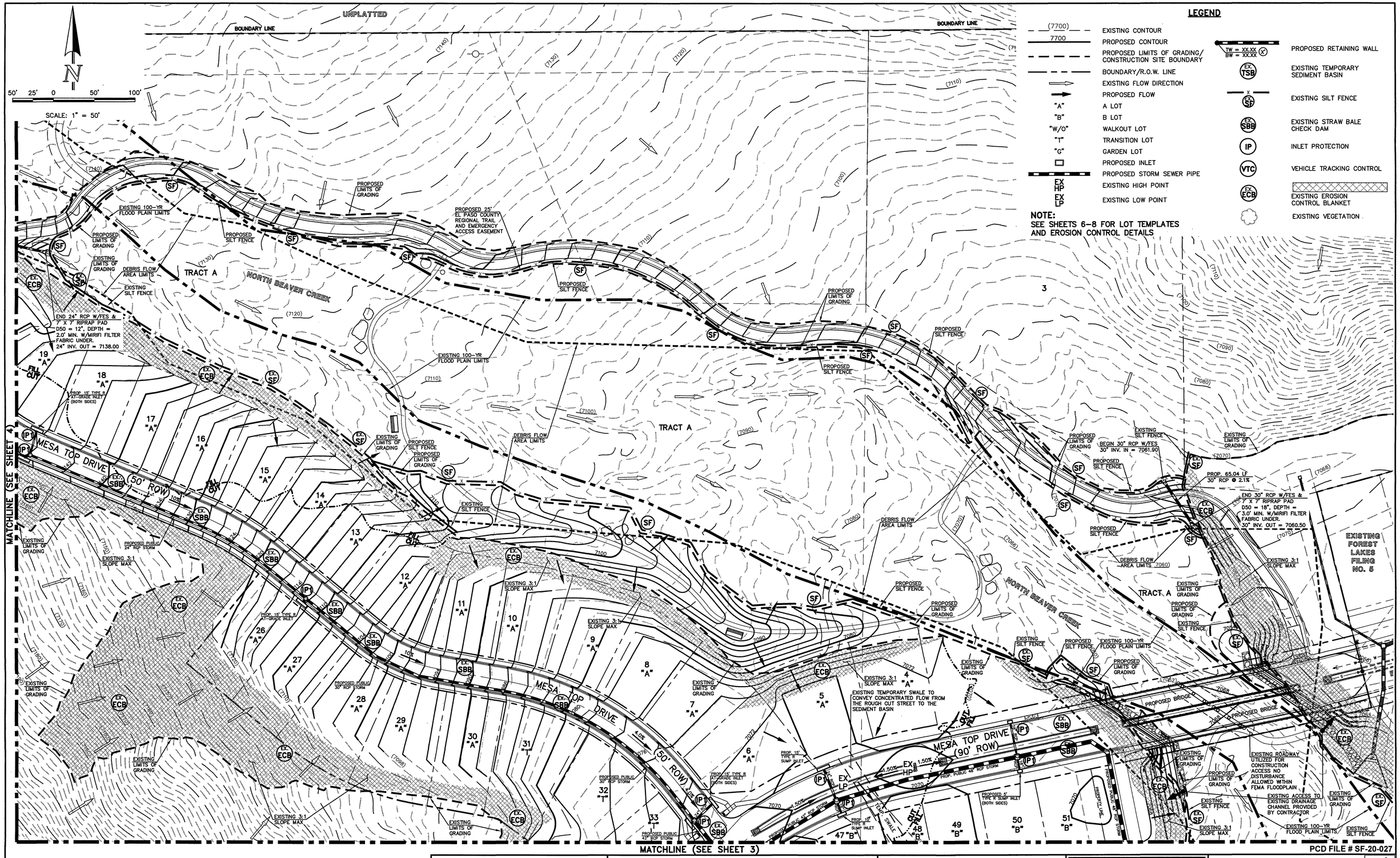

NOTE:
OVERLOT GRADING COMPLETED WITH PRE-DEVELOPMENT GRADING PLAN & PERMIT. EROSION CONTROL BLANKETS, TEMPORARY SEDIMENT BASINS, SILT FENCE & STRAW BALE BARRIERS INSTALLED PER THAT PLAN.

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NO.	REVISION	DATE

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

COLORADO LICENSED 29794 PROFESSIONAL ENGINEER KYLE R. CAMPBELL

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

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

FOREST LAKES FILING NO. 6

GRADING AND EROSION CONTROL PLAN

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'		SHEET	2 OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.60

PCD FILE # SF-20-027

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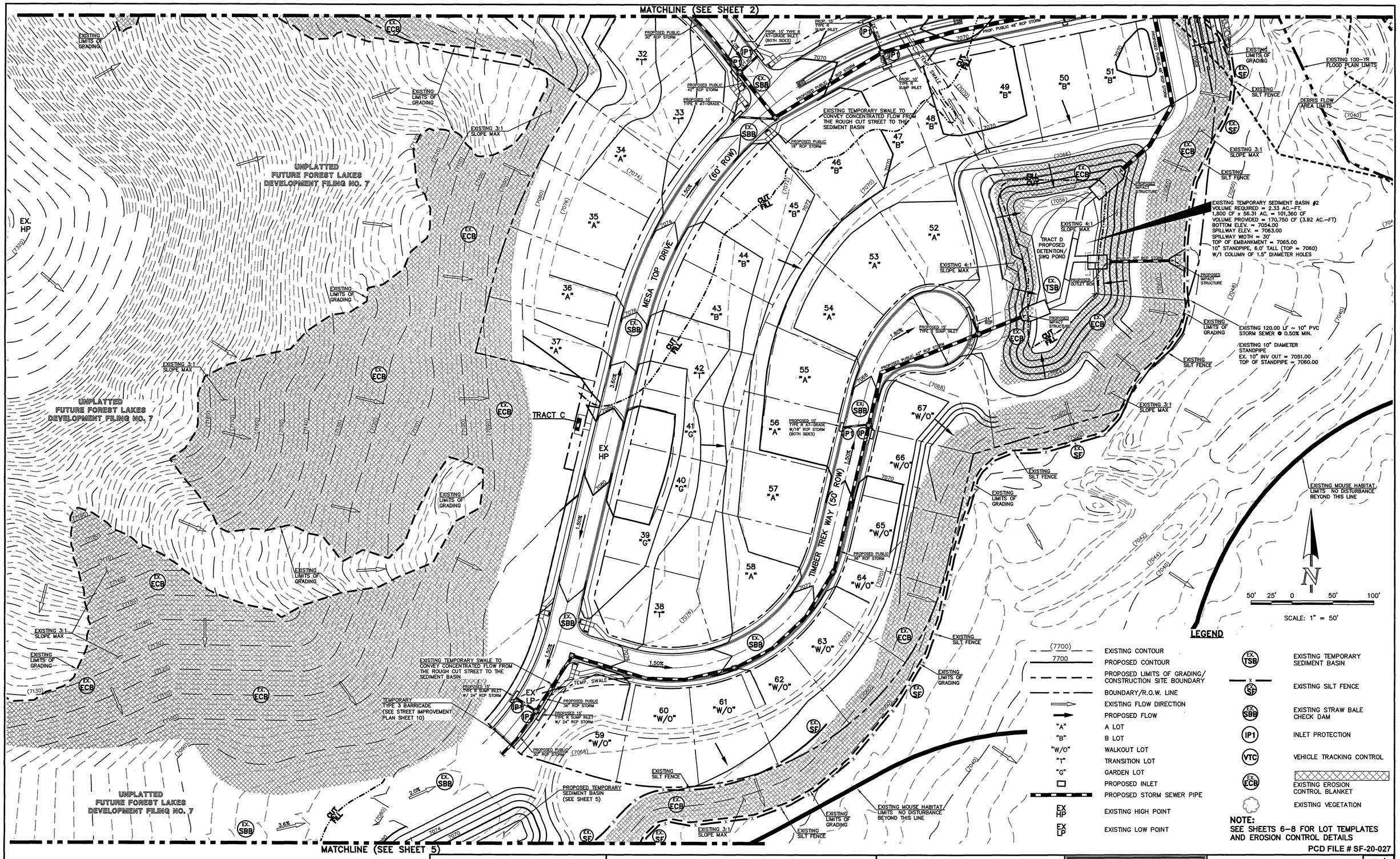

LEGEND

(7700)	EXISTING CONTOUR
7700	PROPOSED CONTOUR
	PROPOSED LIMITS OF GRADING/ CONSTRUCTION SITE BOUNDARY
	BOUNDARY/R.O.W. LINE
	EXISTING FLOW DIRECTION
	PROPOSED FLOW
"A"	A LOT
"B"	B LOT
"W/O"	WALKOUT LOT
"T"	TRANSITION LOT
"G"	GARDEN LOT
	PROPOSED INLET
	PROPOSED STORM SEWER PIPE
EX HP	EXISTING HIGH POINT
EX LP	EXISTING LOW POINT
EX. TSB	EXISTING TEMPORARY SEDIMENT BASIN
EX. SF	EXISTING SILT FENCE
EX. SBB	EXISTING STRAW BALE CHECK DAM
IP1	INLET PROTECTION
VTC	VEHICLE TRACKING CONTROL
EX. ECB	EXISTING EROSION CONTROL BLANKET
	EXISTING VEGETATION

NOTE:
SEE SHEETS 6-8 FOR LOT TEMPLATES AND EROSION CONTROL DETAILS

PCD FILE # SF-20-027

NOTE:
OVERLOT GRADING COMPLETED WITH PRE-DEVELOPMENT GRADING PLAN & PERMIT. EROSION CONTROL BLANKETS, TEMPORARY SEDIMENT BASINS, SILT FENCE & STRAW BALE BARRIERS INSTALLED PER THAT PLAN.

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NO.	REVISION	DATE

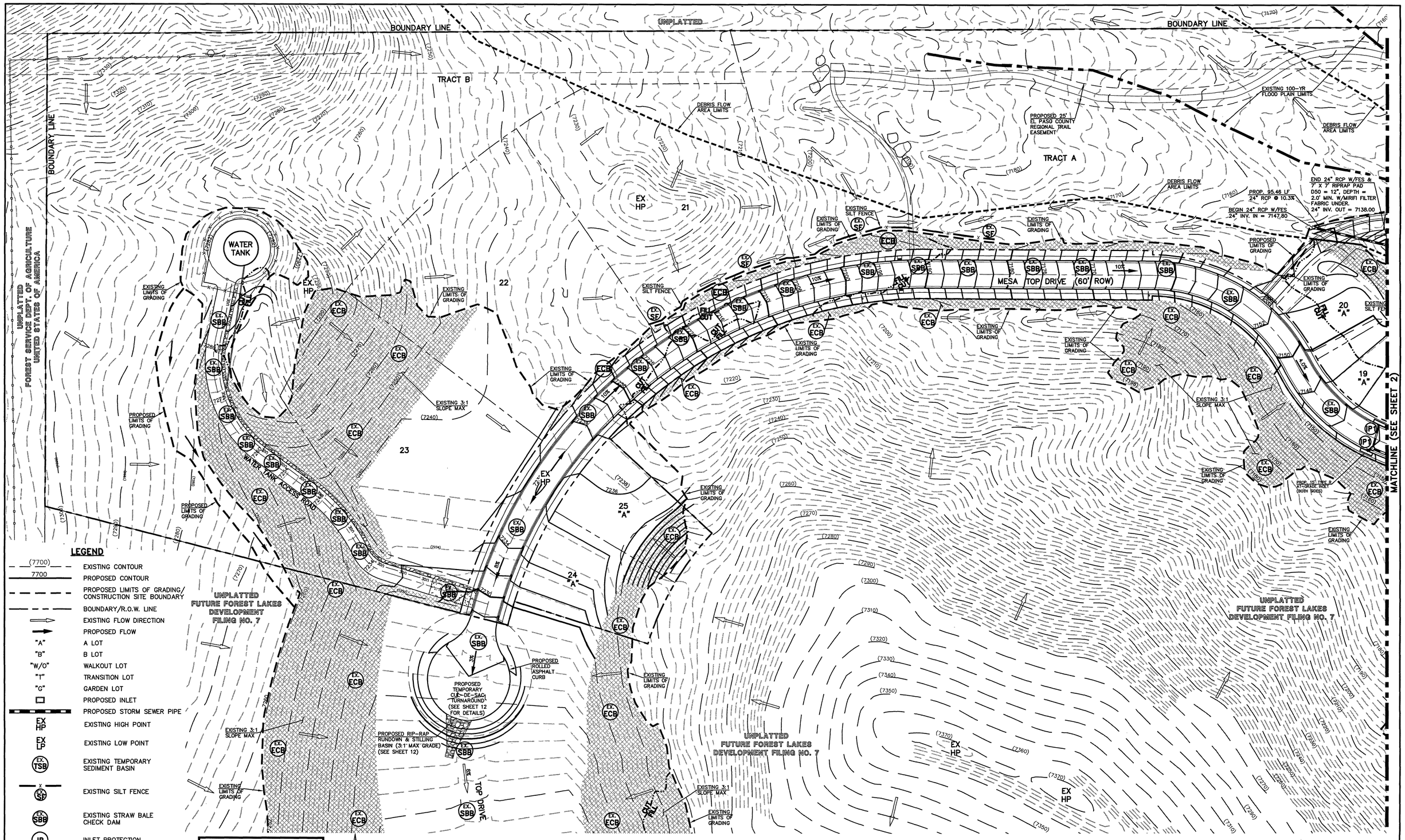
REVIEW:
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

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

FOREST LAKES FILING NO. 6
GRADING AND EROSION CONTROL PLAN

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'		SHEET	3 OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.50



LEGEND

(7700)	EXISTING CONTOUR
7700	PROPOSED CONTOUR
	PROPOSED LIMITS OF GRADING/ CONSTRUCTION SITE BOUNDARY
	BOUNDARY/R.O.W. LINE
	EXISTING FLOW DIRECTION
	PROPOSED FLOW
"A"	A LOT
"B"	B LOT
"W/O"	WALKOUT LOT
"T"	TRANSITION LOT
"G"	GARDEN LOT
	PROPOSED INLET
	PROPOSED STORM SEWER PIPE
EX HP	EXISTING HIGH POINT
EX LP	EXISTING LOW POINT
EX TSB	EXISTING TEMPORARY SEDIMENT BASIN
EX SF	EXISTING SILT FENCE
EX SBB	EXISTING STRAW BALE CHECK DAM
IP	INLET PROTECTION
VTC	VEHICLE TRACKING CONTROL
EX ECB	EXISTING EROSION CONTROL BLANKET
	EXISTING VEGETATION

NOTE:
SEE SHEETS 6-8 FOR LOT TEMPLATES AND EROSION CONTROL DETAILS

NOTE:
OVERLOT GRADING COMPLETED WITH PRE-DEVELOPMENT GRADING PLAN & PERMIT. EROSION CONTROL BLANKETS, TEMPORARY SEDIMENT BASINS, SILT FENCE & STRAW BALE BARRIERS INSTALLED PER THAT PLAN.

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NO.	REVISION	DATE

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

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

PCD FILE # SF-20-027

FOREST LAKES FILING NO. 6

GRADING AND EROSION CONTROL PLAN

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'		SHEET	4 OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.60

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MATCHLINE (SEE EARLY GRADING PLAN & SHEET 4)

MATCHLINE (SEE SHEET 3)

MATCHLINE (SEE SHEET 3)

UTE MOUNTAIN COURT

MOUNTAIN LEDGE LANE

MESA TOP DRIVE

UNPLATTED
FUTURE FOREST LAKES
DEVELOPMENT FILING NO. 7

UNPLATTED
FUTURE FOREST LAKES
DEVELOPMENT FILING NO. 6 & 7

UNTIL DEVELOPMENT OF FILING 7, INSTALL INTERIM SWALE FROM DP-2 SOUTH TOWARD EXISTING TEMPORARY SEDIMENT BASIN AND FUTURE POND 'A'. ADDITIONAL TRIBUTARY AREA CAN BE ACCOMMODATED IN OVERSIZED T.S.B. WITH NO MODIFICATION NEEDED.

EXISTING TEMPORARY SWALE TO CONVEY CONCENTRATED FLOW FROM THE ROUGH CUT STREET TO THE SEDIMENT BASIN

TEMPORARY SWALE FROM LOW POINT INTO POND
25' WIDE BOTTOM,
4:1 SIDE SLOPES,
1.0% MIN. GRADE. USE ECB FOR TEMP. SWALES.

TEMPORARY SWALE FROM LOW POINT INTO POND
4' WIDE BOTTOM,
4:1 SIDE SLOPES,
1.0% MIN. GRADE. USE ECB FOR TEMP. SWALES.

EXISTING TEMPORARY SWALE TO CONVEY CONCENTRATED FLOW FROM THE ROUGH CUT STREET TO THE SEDIMENT BASIN

EXISTING LIMITS OF GRADING

EXISTING 3:1 SLOPE MAX

TSB#3 PER FOREST LAKES 5, 6, & 7 EARLY GRADING PLAN. ORIGINAL TRIBUTARY AREA 37.55 AC. PLUS ADDITIONAL 14.01 ACRES (BASINS A, B1, B2) = TOTAL TRIBUTARY AREA OF 51.56 ACRES. AT 1,800 CF/AC., REQUIRED TSB VOLUME IS 2.13 AC.-FT. PROVIDED VOLUME IN TSB/FUTURE POND IS 3.80 AC.-FT. NO MODIFICATIONS TO SPILLWAY OR STANDPIPE NEEDED.

EXISTING TEMPORARY SEDIMENT BASIN & FUTURE POND A (FILING 7).

PROPOSED 4:1 SLOPE MAX

115.00 LF ~ 10" PVC STORM SEWER @ 0.50% MIN.

EXISTING 10" DIAMETER STANDPIPE
10" INV OUT = 7106.00
TOP OF STANDPIPE = 7114.00

EXISTING MOUSE HABITAT LIMITS NO DISTURBANCE BEYOND THIS LINE

EXISTING TEMPORARY SEDIMENT BASIN #3
ORIGINAL VOLUME REQUIRED = 1.55 AC.-FT.
1,800 CF x 37.55 AC. = 67,590 CF
VOLUME PROVIDED = 165,530 CF (3.80 AC.-FT)
BOTTOM ELEV. = 7108.00
SPILLWAY ELEV. = 7117.00
SPILLWAY WIDTH = 25'
TOP OF EMBANKMENT = 7120.00
10" STANDPIPE, 6.0' TALL (TOP = 7114)
W/1 COLUMN OF 1.5" DIAMETER HOLES

EXISTING TEMPORARY SWALE TO CONVEY CONCENTRATED FLOW FROM THE ROUGH CUT STREET TO THE SEDIMENT BASIN

TEMPORARY TYPE 3 BARRICADE (SEE STREET IMPROVEMENT PLAN SHEET 10)

UNTIL DEVELOPMENT OF FILING 7, INSTALL INTERIM SWALE FROM END OF ROAD TO PROPOSED TEMPORARY SEDIMENT BASIN.

PROPOSED 15" TYPE R SUMP INLET W/ 24" RCP STORM

PROPOSED PUBLIC 30" RCP STORM

PROPOSED 15" TYPE R SUMP INLET W/ 24" RCP STORM

PROPOSED PUBLIC 30" RCP STORM

PROPOSED 8" DIAMETER STANDPIPE
8" INV OUT = 7065.00
TOP OF STANDPIPE = 7069.00

62.77 LF ~ 8" PVC STORM SEWER @ 1.59%

EXISTING SILT FENCE

PROPOSED 4:1 SLOPE MAX

DAYLIGHT 8" PVC DRAIN PIPE ONTO EXISTING GROUND.
8" INV. = 7064.00

TEMPORARY SEDIMENT BASIN F-6
VOLUME REQUIRED = 0.45 AC.-FT.
1,800 CF x 10.87 AC. = 19,566 CF
VOLUME PROVIDED = 21,083 CF (0.48 AC.-FT)
BOTTOM ELEV. = 7066.00
SPILLWAY ELEV. = 7070.00
SPILLWAY WIDTH = 16'
TOP OF EMBANKMENT = 7072.00
8" STANDPIPE, 3.0' TALL (TOP = 7069.00)
W/1 COLUMN OF 31/32" DIAMETER HOLES

39 "G"

38 "T"

60 "W/O"

59 "W/O"

SCALE: 1" = 50'

LEGEND

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NOTE:
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PCD FILE # SF-20-027

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4-9-21

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

FOREST LAKES FILING NO. 6

GRADING AND EROSION CONTROL PLAN

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'	SHEET 5	OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.50

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EL PASO COUNTY GRADING AND EROSION CONTROL NOTES:

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.

2. 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.

3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.

4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.

5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.

6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.

7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.

8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.

10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.

11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.

13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.

14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.

15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.

18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.

19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.

20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR, IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.

22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.

23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.

25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.

26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC. AND SHALL BE CONSIDERED A PART OF THESE PLANS.

29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

CONSTRUCTION CONTROL MEASURES NOTES:

1. CONTRACTOR TO DETERMINE AREAS USED FOR STAGING, STORAGE OF MATERIALS, SOILS (STOCKPILES) OR WASTES AND SHALL MARK ON THE SITE SWMP AT ALL TIMES. THE USE OF CONSTRUCTION OFFICE TRAILERS REQUIRES PCD PERMITTING.

2. THE EROSION CONTROL MEASURES SHOWN ON THE APPROVED "FOREST LAKES FILING NO. 5, 6, & 7 PRE-DEVELOPMENT GRADING AND EROSION CONTROL PLAN" SHOW AND CALL-OUT THE 'INITIAL' STAGE OF TEMPORARY CONSTRUCTION CONTROL MEASURES.

3. THE PROPOSED GRADING/EROSION CONTROL PLAN (SHEETS 2-4) SHOW AND CALL-OUT THE 'INTERIM' STAGE OF CONSTRUCTION CONTROL MEASURES.

4. 'FINAL' CONSTRUCTION CONTROL MEASURES ARE STABILIZED/DEVELOPED LOTS, CONSTRUCTED ROADS, RE-SEEDED OPEN SPACE, AND CONSTRUCTED DETENTION PONDS. A PLAN IS NOT NEEDED FOR THE FINAL STAGE.

EROSION CONTROL CRITERIA:

EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES WITHIN THE PROJECT SITE.

1.) THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.

2.) DURING GRADING OPERATIONS, LOCATE AND SET THE STRAW BALE CHECK DAMS AND SILT FENCES AS SHOWN ON THE EROSION CONTROL PLAN. AT THIS TIME RESEED ALL DISTURBED AREAS WITH AN EL PASO COUNTY APPROVED SEED MIX.

3.) SEEDING APPLICATION: DRILLED TO A DEPTH OF .25" TO .50" INTO SOIL WHERE POSSIBLE. BROADCAST AND RAKED TO COVER ON STEEPER THAN 3:1 SLOPES WHERE ACCESS IS LIMITED OR UNSAFE FOR EQUIPMENT.

4.) MULCHING REQUIREMENT AND APPLICATION: 1.5 TONS PER ACRE NATIVE HAY MECHANICALLY CRIMPED INTO SOIL.

5.) THE STRAW BALE CHECK DAMS AND SILT FENCES SHALL BE KEPT IN PLACE AND MAINTAINED UNTIL EROSION AND SEDIMENTATION POTENTIAL IS MITIGATED. REMOVAL OF SILT AND SEDIMENT COLLECTED BY THE STRAW BALES IS REQUIRED ONCE IT REACHES HALF THE HEIGHT OF THE STRAW BALES OR SILT FENCE.

6.) SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN TWENTY-ONE (21) CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAT 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAT 60 DAYS SHALL ALSO BE SEEDED. ON A CASE-BY-CASE BASIS, THE MS4 PERMITTEE MAY ALLOW ANOTHER APPROPRIATE BMP TO BE IN PLACE THAT PREVENTS SEDIMENT FROM LEAVING THE SITE. ALL TEMPORARY SORIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.

7.) ALL FACILITIES, VEGETATION AND OTHER ITEMS REQUIRED BY THE APPROVED FINAL GRADING, EROSION CONTROL AND RECLAMATION PLAN SHALL BE PROPERLY MAINTAINED BY THE OWNERS OF THE PROPERTY. SUCH MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO KEEPING ALL EROSION CONTROL FACILITIES IN GOOD ORDER AND FUNCTIONAL, REPAIRING ANY EROSION DAMAGE THAT OCCURS, KEEPING ALL VEGETATION HEALTHY AND IN GROWING CONDITION AND REPLACING ANY DEAD VEGETATION AS SOON AS PRACTICABLE.

8.) ALL SILT FENCES ARE TO BE REGULARLY INSPECTED AND REPAIRED AS NEEDED.

9.) THE CONTRACTOR SHALL PROVIDE VEHICLE TRACKING CONTROL FACILITIES FOR EACH ENTRANCE/EXIT TO THE SITE. THE CONTRACTOR SHALL SUBMIT A PLAN WHICH WILL ASSURE USAGE OF THIS FACILITY BY ALL VEHICLES LEAVING THE SITE.

10.) EROSION CONTROL MEASURES SHALL BE CHECKED AFTER EACH STORM EVENT AND REPAIRED WHEN NECESSARY.

11.) CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION CONTROL FACILITIES IN GOOD WORKING ORDER UNTIL SUCH TIME AS PERMANENT FACILITIES ARE IN PLACE AND THE CONSTRUCTION MANAGER HAS APPROVED THEIR REMOVAL.

12.) ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.

13.) THE EROSION CONTROL MEASURES OUTLINED ON THE PLAN ARE THE RESPONSIBILITY OF THE DEVELOPER TO MONITOR AND REPLACE, REGRADE AND REBUILD AS NECESSARY UNTIL VEGETATION IS ESTABLISHED.

14.) MAXIMUM ACREAGE OPEN AT ANY GIVEN TIME IS TO BE 30 ACRES.

SEEDING GUIDELINES:

1. SEEDBED PREPARATION

THE SEEDBED SHOULD BE WELL-SETTLED AND FIRM, BUT FRIABLE ENOUGH THAT THE SEED CAN BE PLACED AT THE SPECIFIED DEPTHS. COMPETITIVE STANDS OF WEEDS THAT ARE PRESENT BEFORE SEEDING MUST BE CONTROLLED BY SHALLOW TILLAGE OR BY APPLICATION OF HERBICIDES. SOILS THAT HAVE BEEN OVER-COMPACTED BY TRAFFIC OR EQUIPMENT, ESPECIALLY WHEN WET, SHOULD BE TILLED TO BREAK UP ROOTING-RESTRICTIVE LAYERS. THAN HARROWED, ROLLED, OR PACKED TO PREPARE THE REQUIRED FIRM SEEDBED.

2. FERTILIZER

FERTILIZER SHOULD BE APPLIED AT A RATE OF 50 POUNDS OF AVAIL-ABLE NITROGEN PER ACRE AND 40 POUNDS OF AVAILABLE PHOSPHATE PER ACRE. THE TIME OF APPLICATION SHOULD BE IMMEDIATELY PRIOR TO SEEDING, AT THE TIME OF SEEDING, OR IMMEDIATELY FOL-LOWNG SEEDING, DEPENDING ON THE KIND OF FERTILIZER AND TYPE OF EQUIPMENT USED.

3. SEEDING

SEED SHOULD BE PLANTED WITH A GRASS DRILL ON ALL SLOPES OF 33% (3:1) OR FLATTER. SEED MAY BE BROADCAST BY HAND, BY MECHANICAL SPREADER, OR BY HYDRAULIC EQUIPMENT ON AREAS THAT ARE SMALL, TOO STEEP, OR NOT ACCESSIBLE FOR SEED DRILL OPERATIONS. SEED PLANTED WITH A DRILL SHOULD BE COVERED WITH SOIL TO A DEPTH OF 1/4 TO 3/4 INCH. SEED PLANTED BY THE BROADCAST METHOD SHALL BE INCORPORATED INTO THE SOIL SURFACE, NOT TO EXCEED A DEPTH OF 3/4 INCH, BY RAKING, HARROWING, OR OTHER PROVEN METHOD. THE TIME OF SEEDING IS FROM OCTOBER 15TH - MAY 31ST. SEED PLANTED IN THE LATE FALL WILL REMAIN DORMANT UNTIL SPRING, WHEN IT WILL GERMINATE.

4. MULCHING

SEEDED AREAS SHOULD BE MULCHED TO CONSERVE MOISTURE; PREVENT SURFACE COMPACTION OR CRUSTING; REDUCE RUNOFF AND EROSION; CONTROL INSECTS; AND HELP ESTABLISH PLANT COVER.

NATIVE HAY OR STRAW SHOULD BE APPLIED AT A RATE OF 4,000 POUNDS PER ACRE AND CRIMPED INTO THE GROUND. ON SLOPES GREATER THAN 3:1, AN AGRONOMY BLANKET SHOULD BE USED.

5. SUPPLEMENTAL WATER

IN LOW RAINFALL AREAS, WHERE WATER IS AVAILABLE AND WHERE RAPID ESTABLISHMENT IS NEEDED, IRRIGATION OF NEW SEEDING SHOULD BE PERFORMED DURING THE FIRST GROWING SEASON. WATER SHOULD BE APPLIED AT APPROXIMATELY ONE WEEK INTERVALS, AT A RATE OF 3/4 TO 1 INCH PER APPLICATION, WHEN RAINFALL IS DEFI-CIENT FOR PLANT DEVELOPMENT.

NOTES:

AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF THE CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

A PORTION OF THE OVERALL FOREST LAKES DEVELOPMENT IS LOCATED WITHIN A FLOODPLAIN AS DETERMINED BY THE FLOOD INSURANCE RATE MAPS (F.I.R.M.) MAP NUMBERS 08041 C0267G, C0266G, C0258G & C0259G EFFECTIVE DATE, DECEMBER 7, 2018. HOWEVER, THERE IS NO PORTION OF FILING 6 DEVELOPMENT WITHIN THE FLOODPLAIN LIMITS.

THE AVERAGE SOIL CONDITION REFLECTS HYDROLOGIC SOIL GROUP "B", MOSTLY JARRE-TECOLOTE COMPLEX AND PEYTON-PRING COMPLEX AS DETERMINED BY THE "SOIL SURVEY OF EL PASO COUNTY AREA" PREPARED BY THE U.S. SOIL CONSERVATION SERVICE.

EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.

EMERGENCY OVERFLOW SWALES FOR INLETS IN THE INTERIM UNTIL CURB AND ASPHALT IS INSTALLED WILL BE THE LOTS, FINAL WILL BE TO OVERTOP THE HIGH POINT IN ROADWAY TO THE NEXT AVAILABLE INLET OR TO PROPOSED POND.

STOCKPILE LOCATIONS FOR HOMEBUILDING TO BE ON EACH INDIVIDUAL LOT THAT IS BEING BUILT UPON.

LIMITS OF DISTURBANCE FOR THIS PLAN INCLUDE UTILITY INSTALLATION AND ROADWAY CONSTRUCTION WITHIN THE R.O.W., AND OVERLOT GRADING FOR DEVELOPMENT THEN INDIVIDUAL LOTS FOR HOMEBUILDING ONCE CONSTRUCTION OF THE HOME BEGINS.

GRADING WITHIN THIS PHASE WILL BE FULLY DEVELOPED WITH HOME BUILDING OPERATIONS.

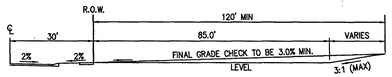
LOCATION OF THE CONCRETE WASHOUT, STORAGE FOR MAINTENANCE EQUIPMENT AND TEMPORARY DISPOSAL AREAS WILL BE ADDED TO THIS PLAN BY SWMP ADMINISTRATOR UPON COORDINATION WITH SELECTED CONTRACTOR.

ALL AREAS ARE TO BE RESEEDED OUTSIDE OF THE FILING NO. 5 AREA. RESEED ALL AREAS AS NEEDED TO PREVENT EROSION AND SEDIMENT RUNOFF ONTO CONSTRUCTION ACTIVITIES.

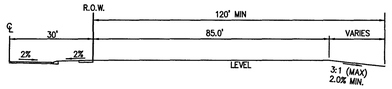
SCHEDULE OF ANTICIPATED CONSTRUCTION ACTIVITY:

1. INSTALL INITIAL BMP'S
2. INSPECTION OF INTIAL BMP'S BY COUNTY STAFF
3. PRECONSTRUCTION MEETING WITH COUNTY STAFF

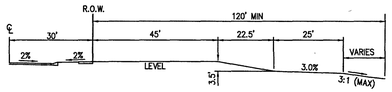
BEGIN CONSTRUCTION	ACTIVITY	COMPLETION	EROSION CONTROL
UPON APPROVAL	ALL SITE ROADWAY GRADING AND UTILITY INSTALLATION	6 MONTHS	ALL SHOWN ON GRADING PLAN



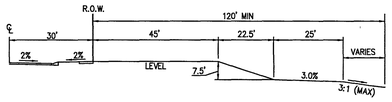
TYPICAL A LOT
NOT TO SCALE



TYPICAL B LOT
NOT TO SCALE

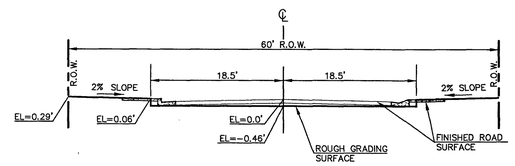


TYPICAL GARDEN (G) LOT
NOT TO SCALE

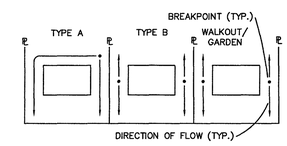


TYPICAL WALKOUT (W/O) LOT
NOT TO SCALE

NOTE:
"T" LOTS OR "TRANSITION" LOTS OCCUR IN PLACES WHERE BOTH PROPERTY LINES CANNOT BE GRADED AS THE TYPICAL STANDARD LOT TEMPLATES SHOWN. THESE LOTS WILL STILL BE GRADED TO CREATE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE.

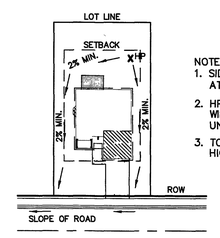


60' R.O.W. TYPICAL STREET SECTION
HOLD-DOWN OVERLOT GRADING IN ROADWAYS
SCALE 1" = 10'



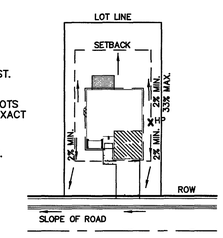
NOTE:
SIDE LOT LINE SWALES ARE REQUIRED FOR ALL LOTS.

LOT DRAINAGE TYPES

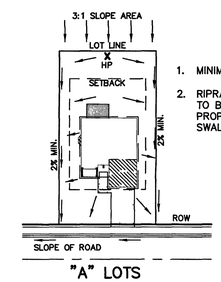


NOTES:
1. SIDEYARD SWALES TO BE CONST. AT 2% MIN. SLOPE.
2. HP LOCATION ON INDIVIDUAL LOTS WILL VARY DEPENDING UPON EXACT UNIT SIZE AND LOCATION.
3. TOF ELEV. MUST BE MIN. 18" HIGHER THAN ESTABLISHED HP.

TYPICAL "A" LOT DRAINAGE PATTERN
N.T.S.



TYPICAL "B", "G," "W/O" LOT DRAINAGE PATTERN
N.T.S.



1. MINIMUM LOT WIDTH ALONG SLOPE IS 70'.
2. RIPRAP OR CONCRETE 'V' NOTCH SWALES TO BE INSTALLED ALONG SHARED PROPERTY & WITHIN SIDE LOT EASEMENTS. SWALES TO DISCHARGE ONTO ROADWAY.

"A" LOTS W/SLOPE BEHIND DRAINAGE PATTERN
N.T.S.

PCD FILE # SF-20-027

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

REVIEW:

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

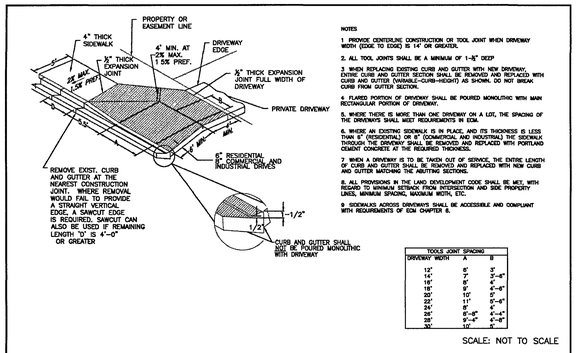
KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4-9-21

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
GRADING AND EROSION CONTROL PLAN
NOTES & DETAIL SHEET

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= N/A	SHEET 6 OF 30	
CHECKED BY		(V) 1"= N/A	JOB NO. 1175.60	

N:\117560\DRAWINGS\CONSTRUCTION\GRADING-EROSION\06-117560-GR-05.dwg, 4/5/2021 1:38:12 PM, 1:1



NOTES

1. PROVIDE CENTERLINE CONSTRUCTION OR TOOL JOINT WHEN DRIVEWAY WIDTH (EDGE TO EDGE) IS 14' OR GREATER.
2. ALL TOOL JOINTS SHALL BE A MINIMUM OF 1-½" DEEP.
3. WHEN REPLACING EXISTING CURB AND GUTTER WITH NEW DRIVEWAY, ENTIRE CURB AND GUTTER SECTION SHALL BE REMOVED AND REPLACED WITH CURB AND GUTTER (VARIABLE-CURB-HEIGHT) AS SHOWN. DO NOT BREAK CURB FROM GUTTER SECTION.
4. FLARED PORTION OF DRIVEWAY SHALL BE POURED MONOLITHIC WITH MAIN RECTANGULAR PORTION OF DRIVEWAY.
5. WHERE THERE IS MORE THAN ONE DRIVEWAY ON A LOT, THE SPACING OF THE DRIVEWAYS SHALL MEET REQUIREMENTS IN ECM.
6. WHERE AN EXISTING SIDEWALK IS IN PLACE, AND ITS THICKNESS IS LESS THAN 6" (RESIDENTIAL) OR 8" (COMMERCIAL AND INDUSTRIAL) THE SIDEWALK THROUGH THE DRIVEWAY SHALL BE REMOVED AND REPLACED WITH PORTLAND CEMENT CONCRETE AT THE REQUIRED THICKNESS.
7. WHEN A DRIVEWAY IS TO BE TAKEN OUT OF SERVICE, THE ENTIRE LENGTH OF CURB AND GUTTER SHALL BE REMOVED AND REPLACED WITH NEW CURB AND GUTTER MATCHING THE ABUTTING SECTIONS.
8. ALL PROVISIONS IN THE LAND DEVELOPMENT CODE SHALL BE MET, WITH REGARD TO MINIMUM SETBACK FROM INTERSECTION AND SIDE PROPERTY LINES, MINIMUM SPACING, MAXIMUM WIDTH, ETC.
9. SIDEWALKS ACROSS DRIVEWAYS SHALL BE ACCESSIBLE AND COMPLIANT WITH REQUIREMENTS OF ECM CHAPTER 6.

TOOLS JOINT SPACING

DRIVEWAY WIDTH	A	B
12'	6'	3'
14'	7'	3'-6"
16'	8'	4'-0"
18'	9'	4'-6"
20'	10'	5'-0"
22'	11'	5'-6"
24'	12'	6'-0"
26'	8'-6"	4'-3"
28'	9'-4"	4'-8"
30'	10'	5'

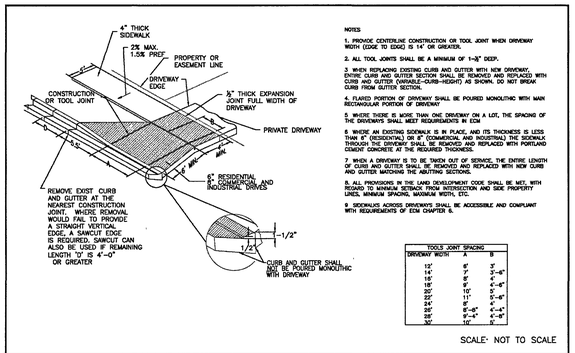
SCALE: NOT TO SCALE

6/23/20
DATE APPROVED
Jennifer E. Irvine
DEPARTMENT OF PUBLIC WORKS

Driveway Detail With Attached Sidewalk
Standard Drawing

REVISION DATE: 6/23/20 | FILE NAME: SD_2-24

DEPARTMENT OF PUBLIC WORKS



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22'	11'	5'-6"
24'	12'	6'
26'	8'-6"	4'-3"
28'	9'-4"	4'-8"
30'	10'	5'

SCALE: NOT TO SCALE

6/23/20
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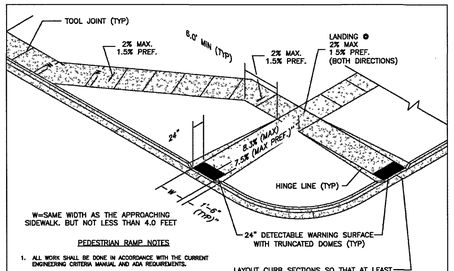
Driveway Detail With Detached Sidewalk
Standard Drawing

REVISION DATE: 6/23/20 | FILE NAME: SD_2-25

DEPARTMENT OF PUBLIC WORKS



W=SAME WIDTH AS THE APPROACHING SIDEWALK, BUT NOT LESS THAN 4.0 FEET

PEDESTRIAN RAMP NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN CURB RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. PEDESTRIAN CURB RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 8.3% MAXIMUM RUNNING RAMP SLOPE DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS. SEE ECM SECTION 6.3.5 FOR PEDESTRIAN PUSHBUTTON LOCATION REQUIREMENTS.
5. DETECTABLE WARNING SURFACE SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING SURFACE SHALL BE PREFABRICATED, CAST IRON (PATINA NATURAL FINISH) AND IN ACCORDANCE WITH ECM CHAPTER 6 AND SD_2-42. THERMOPLASTIC TRUNCATED DOMES AND PAVERS WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING SURFACE SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. PEDESTRIAN CURB RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL PEDESTRIAN CURB RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL. SUBJECT TO APPROVAL.
10. DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED PEDESTRIAN CURB RAMP AREAS AND LANDINGS ARE PROHIBITED.
11. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A RAMP SHALL NOT EXCEED 5%.

GENERAL NOTES

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA (PEDESTRIAN CIRCULATION PATH), THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY (PEDESTRIAN ACCESS ROUTE) AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

6/23/20
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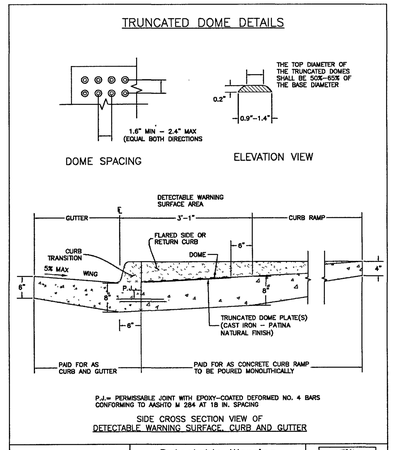
Pedestrian Curb Ramp Detail
Standard Drawing

REVISION DATE: 6/23/20 | FILE NAME: SD_2-41

DEPARTMENT OF PUBLIC WORKS

TRUNCATED DOME DETAILS



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Detectable Warning Surface Details
Standard Drawing

REVISION DATE: 6/23/20 | FILE NAME: SD_2-42

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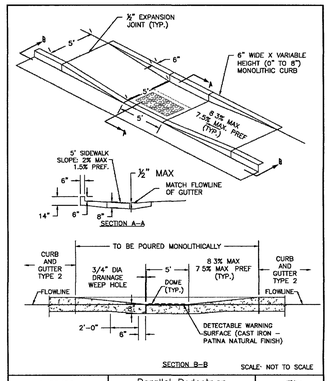

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Parallel Pedestrian Curb Ramp Detail
Standard Drawing

REVISION DATE: 6/23/20 | FILE NAME: SD_2-50

DEPARTMENT OF PUBLIC WORKS

Rolled Erosion Control Products (RECP) EC-6

Table RECP-1. ECTC Standard Specificatnon for Temporary Rolled Erosion Control Products (Adapted from Erosson Control Technology Council 2005)

Product Description	Slope Applications*		Channel Applications*	Minimum Tensile Strength[1]	Expected Longevity
	Maxemum Gradient	C Factor[2,3]	Max. Shear Stress[3,4,6]		
Mulch Control Nets	5.1 (H V)	≤0 10 @ 5.1	0 25 lbs/ft² (12 Pa)	5 lbs/ft (0.073 kN/m)	Up to 12 months
Netless Rolled Erosson Control Blankets	4·1 (H·V)	≤0 10 @ 4 1	0.5 lbs/ft² (24 Pa)	5 lbs/ft (0.073 kN/m)	
Single-net Erosson Control Blankets & Open Weave Textiles	3.1 (H·V)	≤0.15 @ 3 1	1 5 lbs/ft² (72 Pa)	50 lbs/ft (0 73 kN/m)	
Double-net Erosson Control Blankets	2·1 (H·V)	≤0.20 @ 2·1	1.75 lbs/ft² (84 Pa)	75 lbs/ft (1 09 kN/m)	
Mulch Control Nets	5.1 (H V)	≤0 10 @ 5 1	0.25 lbs/ft² (12 Pa)	25 lbs/ft (0.36 kN/m)	24 months
Erosion Control Blankets & Open Weave Textiles (slowly degrading)	1 5.1 (H.V)	≤0.25 @ 1 5.1	2 00 lbs/ft² (96 Pa)	100 lbs/ft (1 45 kN/m)	24 months
Erosion Control Blankets & Open Weave Textiles	1 1 (H·V)	≤0 25 @ 1 1	2 25 lbs/ft² (108 Pa)	125 lbs/ft (1.82 kN/m)	36 months

* C Factor and shear stress for mulch control nettangs must be obtamed with netting used in conjunctson with pre-applied mulch material *(See Section 5.3 of Chapter 7 Construction BMPs for more information on the C Factor)*

[1] Mmumum Average Roll Values, Machine directton using ECTC Mod. ASTM D 5035.

[2] C Factor calculated as ratio of soil loss from RECP protected slope (tested at specified or greater gradient, H:V) to ratio of soil loss from unprotected (control) plot in large-scale testing

[3] Required mmimum shear stress RECP (unvegetated) can sustain without physical damage or excess erosion (> 12 7 mm (0 5 in) soil loss) durng a 30-mmute flow event m large-scale testing

[4] The permissible shear stress levels established for each performance category are based on historical experience with products characterized by Manning's roughness coefficients in the range of 0 01 - 0 05

[5] Acceptable large-scale test methods may include ASTM D 6459, or other independent testing deemed acceptable by the engineer

[6] Per the engineer's discretion. Recommended acceptable large-scale testng protocol may include ASTM D 6460, or other independent testng deemed acceptable by the engineer.

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET INSTALLATION NOTES

1 SEE PLAN VIEW FOR:
-LOCATION OF ECB
-TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
-AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB

2 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

3 IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET

4 PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS

5 JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT

6 INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs

7 OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES

8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1

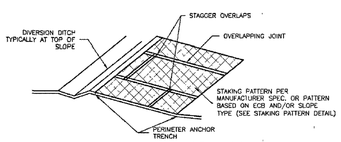
9 ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED

10. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

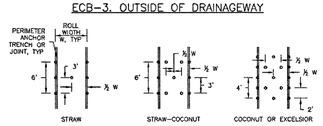
TABLE ECB-1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	–	100%	–	DOUBLE/ NATURAL
STRAW-COCONUT	30% MIN	70% MAX	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

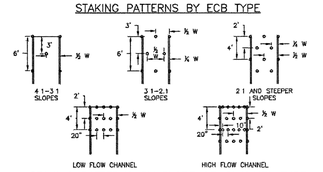
*STRAW ECBs NOT ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.
**ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS



ECB-3. OUTSIDE OF DRAINAGEWAY

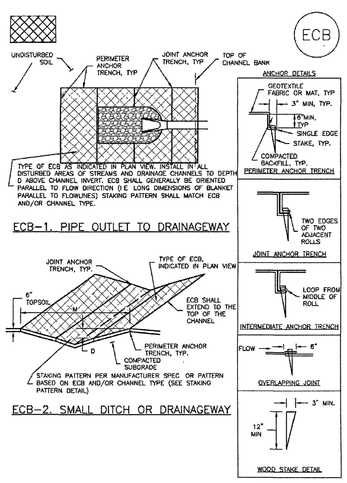


STAKING PATTERNS BY ECB TYPE



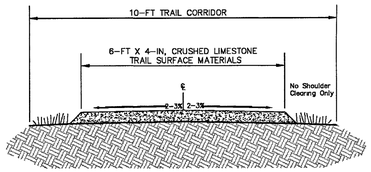
STAKING PATTERNS BY SLOPE OR CHANNEL TYPE

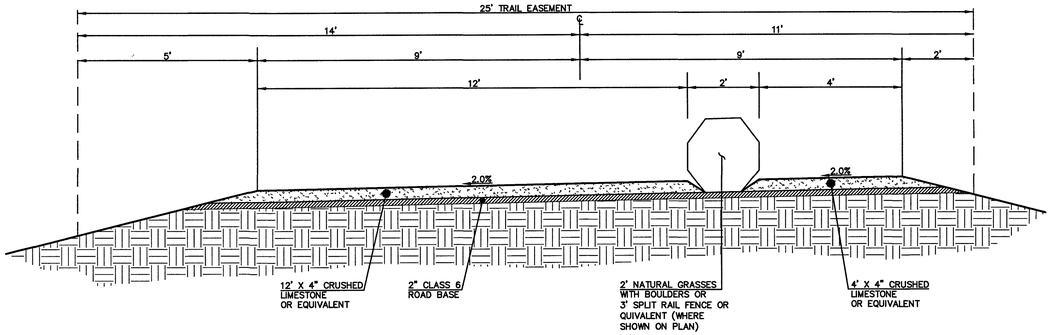
EC-6 Rolled Erosion Control Products (RECP)



TIER III 6-FT DETAIL

NOT TO SCALE





COMBINED EMERGENCY ACCESS ROAD & COUNTY TRAIL DETAIL
SCALE: 1" = 2'

PCD FILE # SF-20-027

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

REVIEW:

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

29794

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

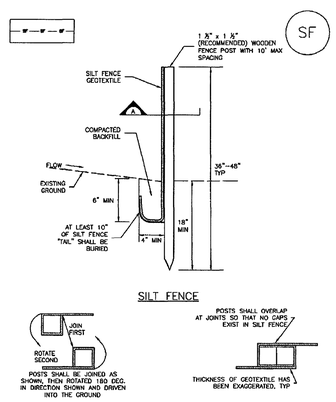
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
GRADING AND EROSION CONTROL PLAN
DETAIL SHEET

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= N/A	SHEET 7	OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.50

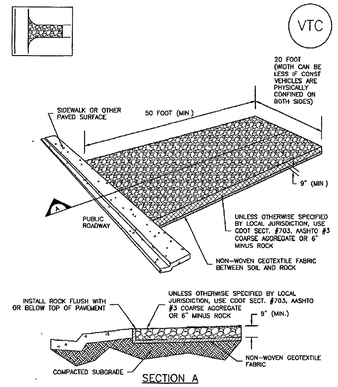
N:\117560\DRAWINGS\CONSTRUCTION\GRADING-EROSION\07-117560-GR-08.dwg, 4/5/2021 1:39:23 PM, 1:1

Silt Fence (SF) — SC-1



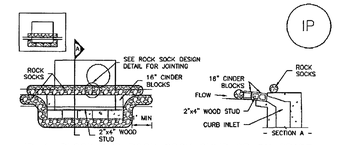
SF–1. SILT FENCE

Vehicle Tracking Control (VTC) — SM-4



VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

SC-6 — Inlet Protection (IP)



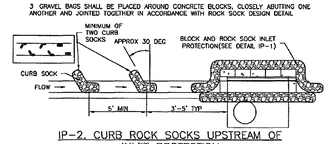
IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1 SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS

2 CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB

3 GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL



IP–2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

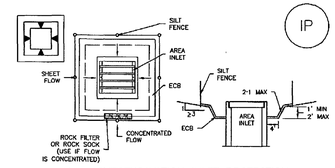
1 SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS

2 PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW

3 SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART

4 AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS

SC-6 — Inlet Protection (IP)



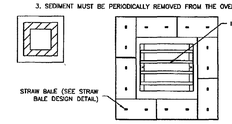
IP–5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA



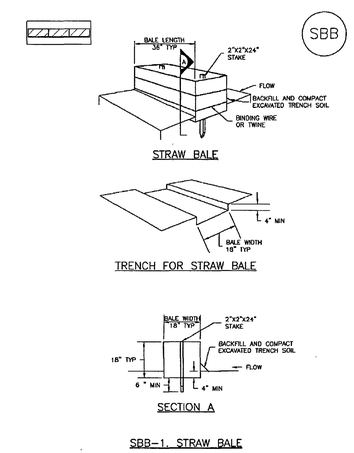
IP–6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS

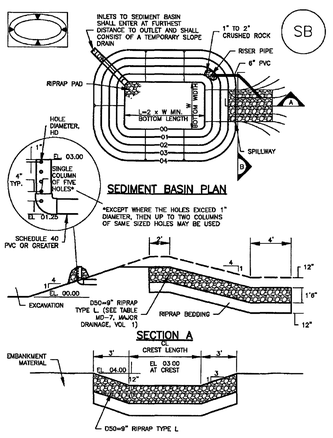
2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER

SC-3 — Straw Bale Barrier (SBB)



SBB–1. STRAW BALE

Sediment Basin (SB) — SC-7



SC-7 — Sediment Basin (SB)

TABLE SB–1 SIZING INFORMATION FOR STANDARD SEDIMENT BASIN

Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)
1	12 ½	2	9/32
2	21	3	13/64
3	28	5	5/8
4	33 ½	6	9/16
5	38 ½	8	23/32
6	43	9	23/32
7	47 ½	11	29/32
8	51	12	13/32
9	55	13	3/8
10	58 ½	15	19/64
11	61	16	7/32
12	64	18	1/4
13	67 ½	19	1 3/64
14	70 ½	21	1 1/8
15	73 ½	22	1 3/64

SEDIMENT BASIN INSTALLATION NOTES

1 SEE PLAN VIEW FOR
–LOCATION OF SEDIMENT BASIN.
–TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN)
–FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD
–FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D

2 FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED

3 SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.

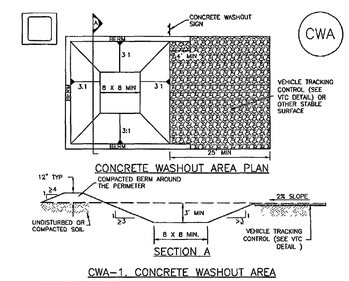
4 EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO 200 SIEVE.

5 EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6 PIPE SCH 40 OR GREATER SHALL BE USED.

7 THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

Concrete Washout Area (CWA) — MM-1



CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
–CWA INSTALLATION LOCATION.

2 DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED

3 THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4 CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER THE PIT SHALL BE AT LEAST 3' DEEP

5 BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'

6 VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA

7 SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8 USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MM-1 — Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3 WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'

5 CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY

6 THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED

7 WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(CRITERIA ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED

PCD FILE # SF-20-027

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NO.	REVISION	DATE
1	REVISED PER EPC COMMENTS	8–21–19

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

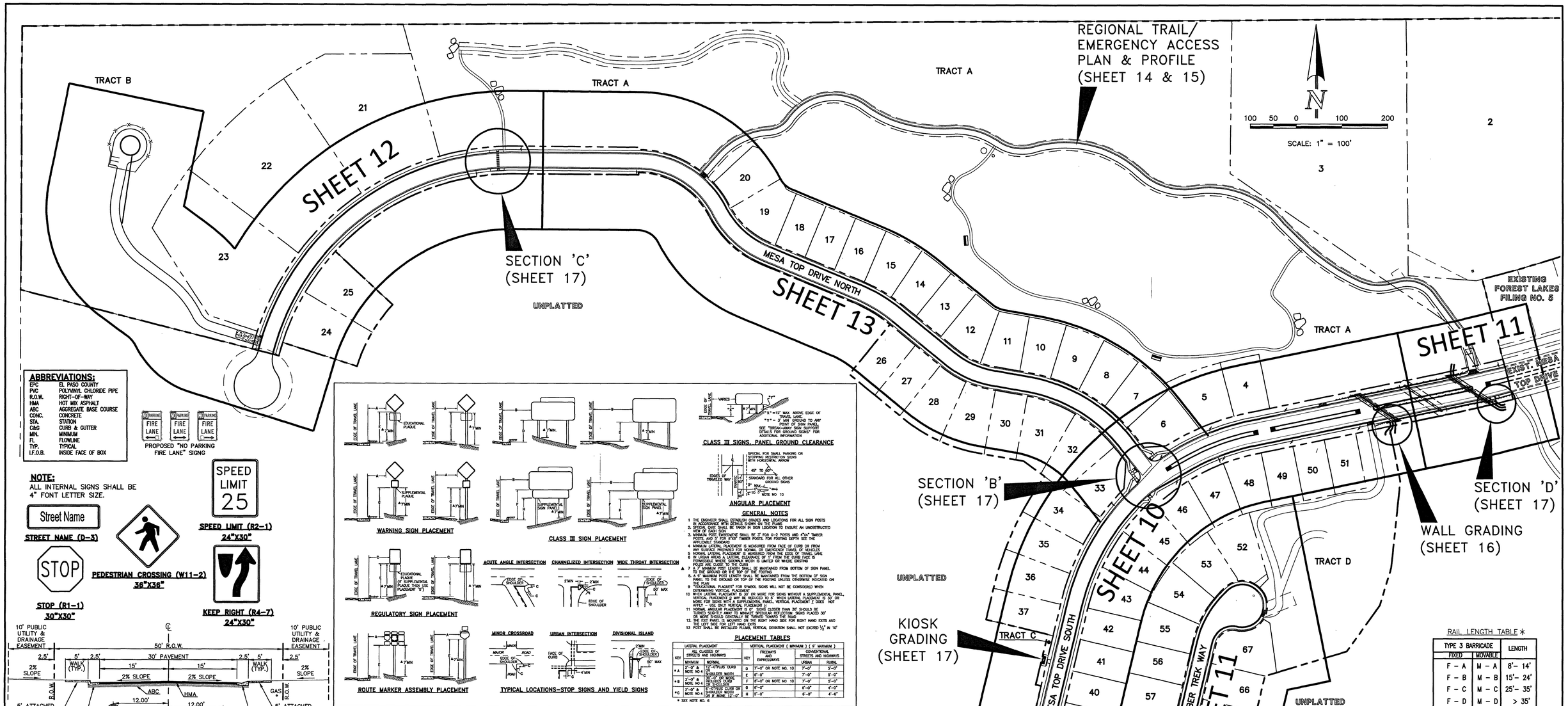
KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4-9-21

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
GRADING AND EROSION CONTROL PLAN
EROSION CONTROL DETAILS

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= N/A	SHEET	8 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.50

N:\1175x00\DRAWINGS\CONSTRUCTION\GRADING-EROSION\08-11/5x60-GR-07.dwg, 4/5/2021 1:40:42 PM, 1:1



ABBREVIATIONS:

EPC	EL PASO COUNTY
PVC	POLYVINYL CHLORIDE PIPE
R.O.W.	RIGHT-OF-WAY
HMA	HOT MIX ASPHALT
ABC	AGGREGATE BASE COURSE
CONC.	CONCRETE
STA.	STATION
C&G	CURB & GUTTER
MIN.	MINIMUM
FL	FLOWLINE
TYP.	TYPICAL
I.F.O.B.	INSIDE FACE OF BOX

PROPOSED "NO PARKING FIRE LANE" SIGNS

NOTE:
ALL INTERNAL SIGNS SHALL BE 4" FONT LETTER SIZE.

GENERAL NOTES

1. THE ENGINEER SHALL ESTABLISH GRADES AND LOCATIONS FOR ALL SIGN POSTS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS
2. SPECIAL CARE SHALL BE TAKEN IN SIGN LOCATION TO ENSURE AN UNOBSTRUCTED VIEW OF EACH SIGN.
3. MINIMUM POST EMBEDMENT SHALL BE 3' FOR U-3 POSTS AND 4'X4" TIMBER POSTS, AND 5' FOR 6"X6" TIMBER POSTS. FOR FOOTING DEPTH SEE THE APPLICABLE STANDARD
4. MINIMUM LATERAL PLACEMENT IS MEASURED FROM FACE OF CURB OR FROM ANY SURFACE PREPARED FOR NORMAL OR EMERGENCY TRAVEL OF VEHICLES
5. NORMAL LATERAL PLACEMENT IS MEASURED FROM THE EDGE OF TRAVEL LANE
6. IN URBAN AREAS A LATERAL CLEARANCE OF 1' FROM THE CURB FACE IS PERMISSIBLE. UNDER THIS CLEARANCE, WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB
7. A 7' MINIMUM POST LENGTH SHALL BE MAINTAINED FROM BOTTOM OF SIGN PANEL TO THE GROUND OR THE TOP OF THE FOOTING
8. A 6' MINIMUM POST LENGTH SHALL BE MAINTAINED FROM THE BOTTOM OF SIGN PANEL TO THE GROUND OR TOP OF THE FOOTING UNLESS OTHERWISE INDICATED ON THE PLANS
9. "EDUCATIONAL PLAQUES" FOR SYMBOL SIGNS WILL NOT BE CONSIDERED WHEN DETERMINING VERTICAL PLACEMENT
10. WHEN LATERAL PLACEMENT IS 30' OR MORE FOR SIGNS WITHOUT A SUPPLEMENTAL PANEL, VERTICAL PLACEMENT IS MAY BE REDUCED TO 5' WHEN LATERAL PLACEMENT IS 30' OR MORE FOR SIGNS WITH A SUPPLEMENTAL PANEL, VERTICAL PLACEMENT IS DOES NOT APPLY - USE ONLY VERTICAL PLACEMENT 7'
11. NORMAL ANGULAR PLACEMENT IS 0°. SIGNS CLOSER THAN 30' SHOULD BE TURNED SLIGHTLY AWAY TO MINIMIZE SPECULAR REFLECTION. SIGNS PLACED 30' OR MORE SHOULD GENERALLY BE TURNED TOWARD THE ROAD
12. THE EXIT PANEL IS MOUNTED ON THE RIGHT HAND SIDE FOR RIGHT HAND EXITS AND ON THE LEFT SIDE FOR LEFT HAND EXITS
13. POST SHALL BE INSTALLED PLUMB. VERTICAL DEVIATION SHALL NOT EXCEED 1/2" IN 10'

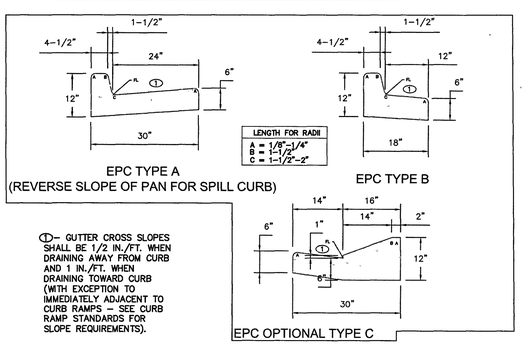
PLACEMENT TABLES

KEY	LATERAL PLACEMENT ALL CLASSES OF STREETS AND HIGHWAYS MINIMUM	NORMAL
* A	2'-0" & NOTE NO. 4	12"-0"PLUS CURB
* B	3'-0" & NOTE NO. 4	SHOULDER WIDTH 12"-0" OR MORE SHOULDER CURB OR SHOULDER
* C	3'-0" & NOTE NO. 4	6"-0"PLUS CURB OR SHOULDER WIDTH 12"-0" OR MORE

KEY	VERTICAL PLACEMENT (MINIMUM) FREEWAYS AND EXPRESSWAYS	CONVENTIONAL STREETS AND HIGHWAYS URBAN	RURAL
D	7'-0" OR NOTE NO. 10	7'-0"	5'-0"
E	6'-0"	7'-0"	5'-0"
F	6'-0" OR NOTE NO. 10	7'-0"	5'-0"
G	6'-0"	6'-0"	4'-0"
H	7'-0"	6'-0"	4'-0"

* SEE NOTE NO. 6

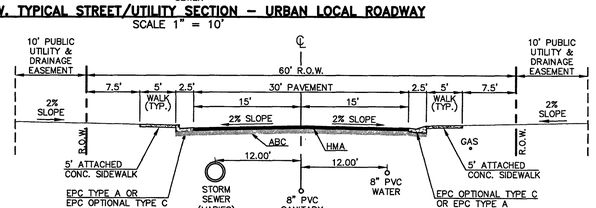
TYPICAL GROUND SIGN PLACEMENT



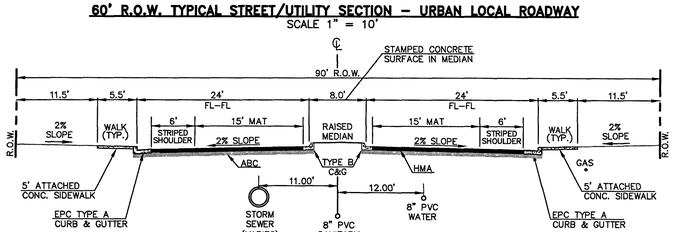
①- GUTTER CROSS SLOPES SHALL BE 1/2 IN./FT. WHEN DRAINING AWAY FROM CURB AND 1 IN./FT. WHEN DRAINING TOWARD CURB (WITH EXCEPTION TO IMMEDIATELY ADJACENT TO CURB RAMPS - SEE CURB RAMP STANDARDS FOR SLOPE REQUIREMENTS).

CURB AND GUTTER DETAILS

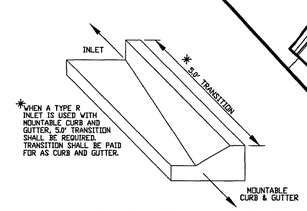
50' R.O.W. TYPICAL STREET/UTILITY SECTION - URBAN LOCAL ROADWAY
SCALE 1" = 10'



60' R.O.W. TYPICAL STREET/UTILITY SECTION - URBAN LOCAL ROADWAY
SCALE 1" = 10'



90' R.O.W. TYPICAL STREET/UTILITY SECTION - URBAN LOCAL ROADWAY
SCALE 1" = 10'

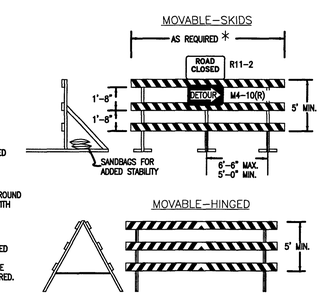


*WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5.0' TRANSITION SHALL BE REQUIRED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

TRANSITION CURB DETAIL
N.T.S.

RAIL LENGTH TABLE *

TYPE 3 BARRICADE FIXED	MOVABLE	LENGTH
F - A	M - A	8'- 14'
F - B	M - B	15'- 24'
F - C	M - C	25'- 35'
F - D	M - D	> 35'



NOTES

1. TYPE 3 BARRICADES HAVE 3 REFLECTORIZED RAIL FACES IF FACING TRAFFIC IN ONE DIRECTION AND 6 IF FACING TRAFFIC IN TWO DIRECTIONS.
2. THE PORTION OF THE POST ABOVE THE GROUND LINE SHALL BE PAINTED IN ACCORDANCE WITH THE APPROPRIATE GENERAL NOTE.
3. DETACHABLE EXTENSION WING RAILS FOR BYPASSING OF CONSTRUCTION EQUIPMENT ARE PERMITTED, WHEN NECESSARY, ON FIXED OR MOVABLE TYPE 3 BARRICADES. THE LENGTH SHALL BE ADEQUATE TO CLOSE THE BORROW PIT AND/OR SHOULDER AS REQUIRED.

TYPICAL TYPE 3 BARRICADES

PCD FILE # SF-20-027

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NO.	REVISION	DATE

REVIEW:

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

COLORADO LICENSED PROFESSIONAL ENGINEER KYLE R. CAMPBELL 29794

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

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

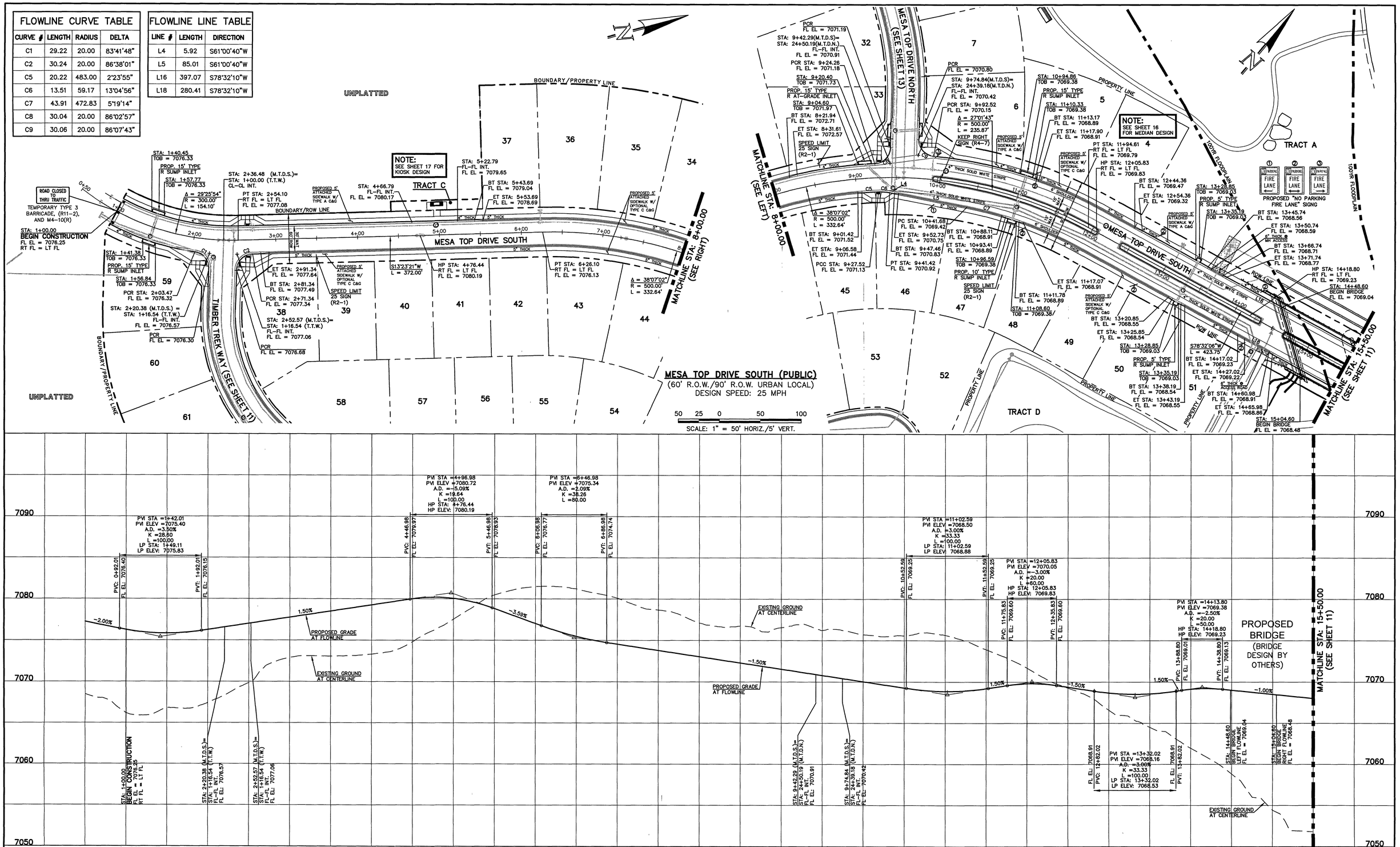
FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVEMENT PLAN
KEY MAP WITH TYPICAL STREET SECTIONS

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 100'	SHEET 9	OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

N:\117560\DRAWINGS\CONSTRUCTION\STREETS\09-117560-SI-01.dwg, 4/5/2021 1:42:08 PM, 1:1

FLOWLINE CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C1	29.22	20.00	83°41'48"
C2	30.24	20.00	86°38'01"
C5	20.22	483.00	2°23'55"
C6	13.51	59.17	13°04'56"
C7	43.91	472.83	5°19'14"
C8	30.04	20.00	86°02'57"
C9	30.06	20.00	86°07'43"

FLOWLINE LINE TABLE		
LINE #	LENGTH	DIRECTION
L4	5.92	S61°00'40"W
L5	85.01	S61°00'40"W
L16	397.07	S78°32'10"W
L18	280.41	S78°32'10"W



PCD FILE # SF-20-027

STREET ABBREVIATION INDEX:

M.T.D.N.	MESA TOP DRIVE NORTH
M.T.D.S.	MESA TOP DRIVE SOUTH
T.T.W.	TIMBER TREK WAY

WALK CONSTRUCTION:

4" THICK SIDEWALK ALLOWED ALONG OPEN SPACE TRACTS & "ESTATE LOT" FRONTAGE. 5" THICK SIDEWALK TYPICAL ALONG RESIDENTIAL LOTS PER EL PASO COUNTY DIRECTION. 6" REQUIRED AT DRIVEWAY CONNECTIONS PER DETAILS SD 2-24 & SD 2-25 ON SHEET 7. WALK INSTALLED NOT AT 6" THICKNESS WILL BE RE-CONSTRUCTED WITH DRIVEWAY PERMIT AND INSTALLATION AS REQUIRED.

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE

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Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVEMENT PLAN
MESA TOP DRIVE SOUTH
STA. 1+00.00 TO STA. 15+50.00

DESIGNED BY	MAL	SCALE	DATE 08/04/2020
DRAWN BY	MES	(H) 1"= 50'	SHEET 10 OF 30
CHECKED BY		(V) 1"= 5'	JOB NO. 1175.60

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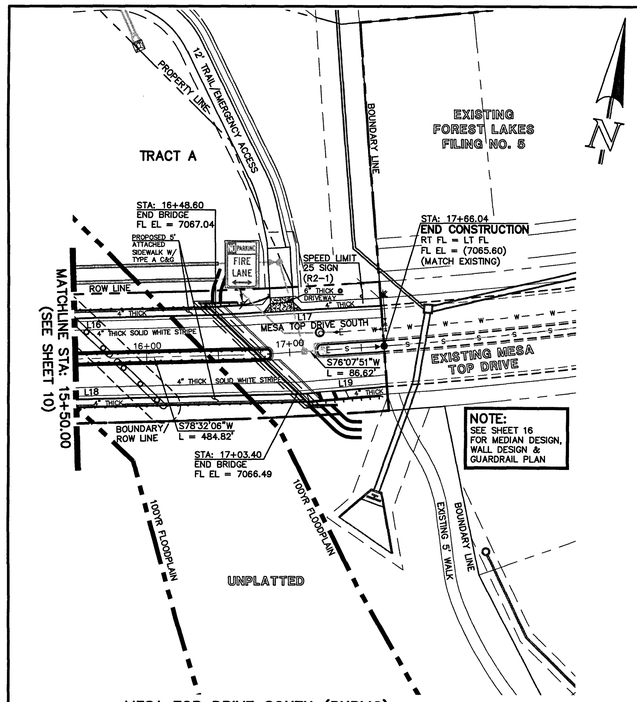
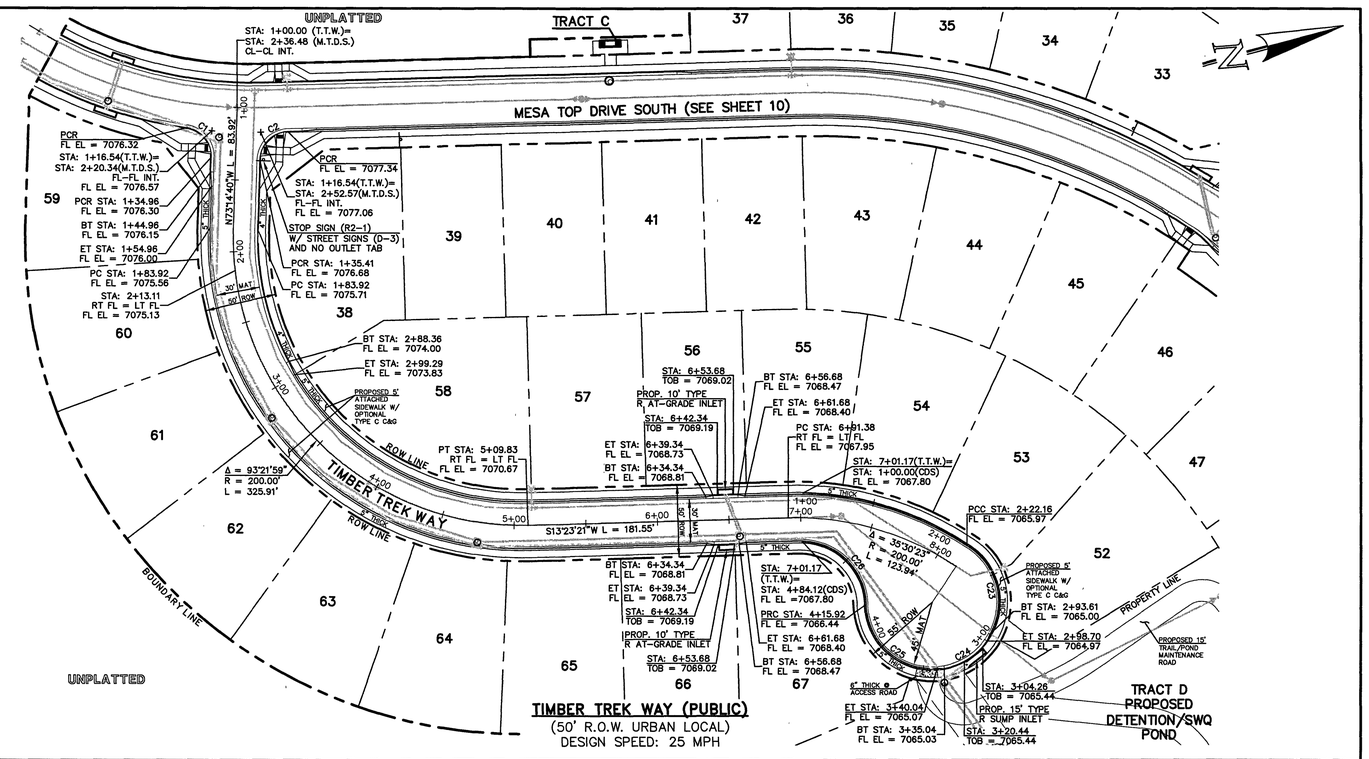


MESA TOP DRIVE SOUTH (PUBLIC)
(90' R.O.W. URBAN LOCAL)
DESIGN SPEED: 25 MPH

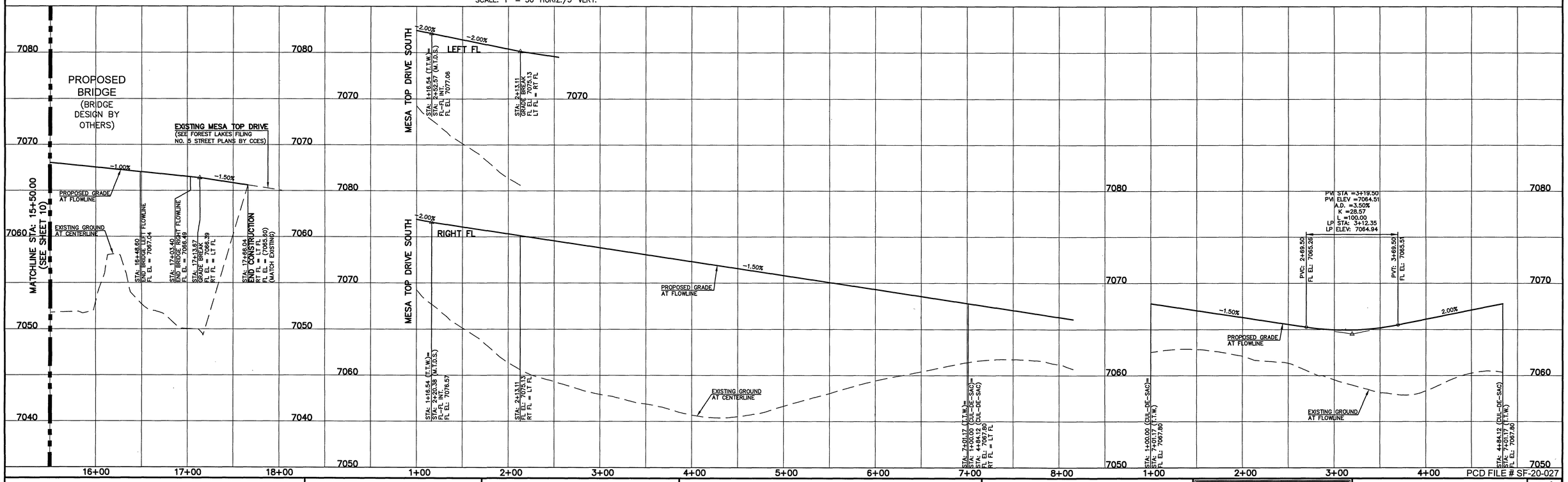
FLOWLINE LINE TABLE		
LINE #	LENGTH	DIRECTION
L16	397.07	S78°32'10"W
L17	113.22	S76°42'50"W
L18	280.41	S78°32'10"W
L19	60.03	S75°02'00"W

FLOWLINE CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C1	29.22	20.00	83°41'48"
C2	30.24	20.00	86°38'01"
C23	70.18	46.17	87°05'32"
C24	36.34	47.00	44°17'50"
C25	74.54	46.17	92°29'50"
C26	69.46	45.83	86°50'13"

50 25 0 50 100
SCALE: 1" = 50' HORIZ./5' VERT.



TIMBER TREK WAY (PUBLIC)
(50' R.O.W. URBAN LOCAL)
DESIGN SPEED: 25 MPH



PCD FILE # SF-20-027

STREET ABBREVIATION INDEX:

M.T.D.N.	MESA TOP DRIVE NORTH
M.T.D.S.	MESA TOP DRIVE SOUTH
T.T.W.	TIMBER TREK WAY

WALK CONSTRUCTION:

4" THICK SIDEWALK ALLOWED ALONG OPEN SPACE TRACTS & 'ESTATE LOT' FRONTAGE. 5" THICK SIDEWALK TYPICAL ALONG RESIDENTAL LOTS PER EL PASO COUNTY DIRECTION. 6" REQUIRED AT DRIVEWAY CONNECTIONS PER DETAILS SD 2-24 & SD 2-25 ON SHEET 7. WALK INSTALLED NOT AT 6" THICKNESS WILL BE RE-CONSTRUCTED WITH DRIVEWAY PERMIT AND INSTALLATION AS REQUIRED.

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NO.	REVISION	DATE

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 8-6-21

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

FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVEMENT PLAN
MESA TOP DRIVE SOUTH STA: 15+50.00 – END
TIMBER TREK WAY/TIMBER TREK CUL-DE-SAC

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=	50'	SHEET 11	OF 30
CHECKED BY		(V) 1"=	5'	JOB NO.	1175.60

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Rock_Chute.xls

Page 1 of 3

Rock Chute Design Data

(Verson 4.01 - 04/23/03, Based on Design of Rock Chutes by Robinson, Roe, Kadavy, ASAE, 1998)

Project: *Forest Lakes Filing 6 - End of Road* **County:** *EL Paso*
Designer: *Matt Larson* **Checked by:** _____
Date: *12/20/2020* **Date:** _____

Input Channel Geometry

Inlet Channel	Chute	Outlet Channel
Bw = 30.0 ft.	Bw = 20.0 ft.	Bw = 10.0 ft.
Side slopes = 3.0 (m 1)	Factor of safety = 1.20 (F_s)	Side slopes = 3.0 (m 1)
n-value = 0.035	Side slopes = 3.0 (m-1) → 2.0:1 max.	n-value = 0.035
Bed slope = 0.0300 ft./ft	Bed slope (S 1) = 0.333 ft./ft → 2.5:1 max.	Bed slope = 0.0800 ft./ft
Freeboard = 2.0 ft.	Outlet apron depth, d = 1.5 ft	Base flow = 0.0 cfs

Design Storm Data (Table 2, NHCP, NRCS Grade Stabilization Structure No. 410)

Drainage area = 4.0 acres — Rainfall = ○ 6-hr ◉ 3-hr ○ 5-hr

Apron elev — Inlet = 7224.5 ft. — Outlet =7214.0 ft. — (H_{drop} = 9.ft.)

Chute capacity = Q10-year — *Minimum capacity (based on a 5-year, 24-hour storm with a 3 - 5 inch rainfall)*

Total capacity = Q25-year

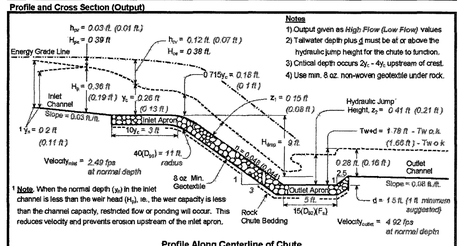
Q_{chute} = 15.2 cfs — High flow storm through chute → Tw (ft.) = *Program*

Q_{total} = 5.6 cfs — Low flow storm through chute → Tw (ft.) = *Program*

Note: The total required capacity is routed through the chute (principal spillway) or in combination with an auxiliary spillway

Input tailwater (Tw)

Profile and Cross Section (Output)

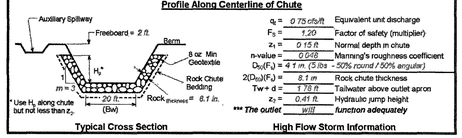


* **Note.** When the normal depth (y_n) in the inlet channel is less than the weir head (H_s), ie., the weir capacity is less than the channel capacity, restricted flow or ponding will occur. This reduces velocity and prevents erosion upstream of the inlet apron.

Notes

1) Output given as *High Flow (Low Flow)* values
2) Tailwater depth plus d must be at or above the hydraulic jump height for the chute to function.
3) Critical depth occurs $2y_c$ - $4y_c$ upstream of crest.
4) Use min. 8 oz. non-woven geotextile under rock.

Profile Along Centerline of Chute

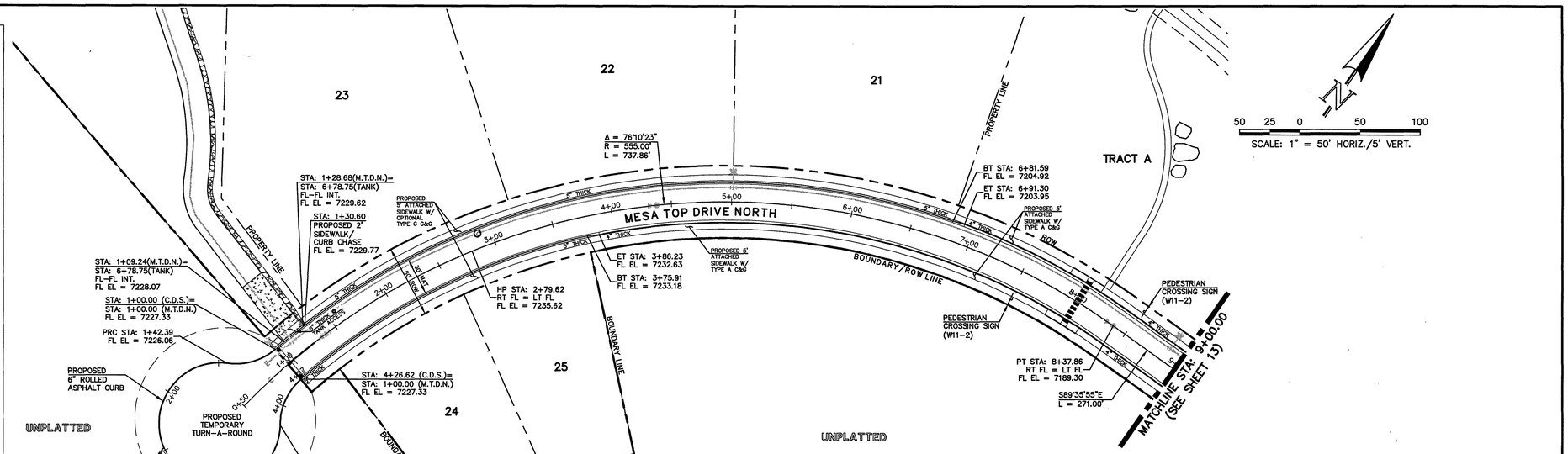


* Use H_s along chute but not less than z_2.

Typical Cross Section

q_s =	0.75 cfs/ft	Equivalent unit discharge
F_s =	1.20	Factor of safety (multiplier)
z_1 =	0.15 ft	Normal depth in chute
n-value =	0.040	Manning's roughness coefficient
$D_{50}(F_s)$ =	4.1 in. (5 lbs - 50% round / 50% angular)	
$2(D_{50})(F_s)$ =	8.1 in	Rock chute thickness
Tw + d =	1.78 ft	Tailwater above outlet apron
z_2 =	0.41 ft.	Hydraulic jump height
*** The outlet	will	function adequately

High Flow Storm Information

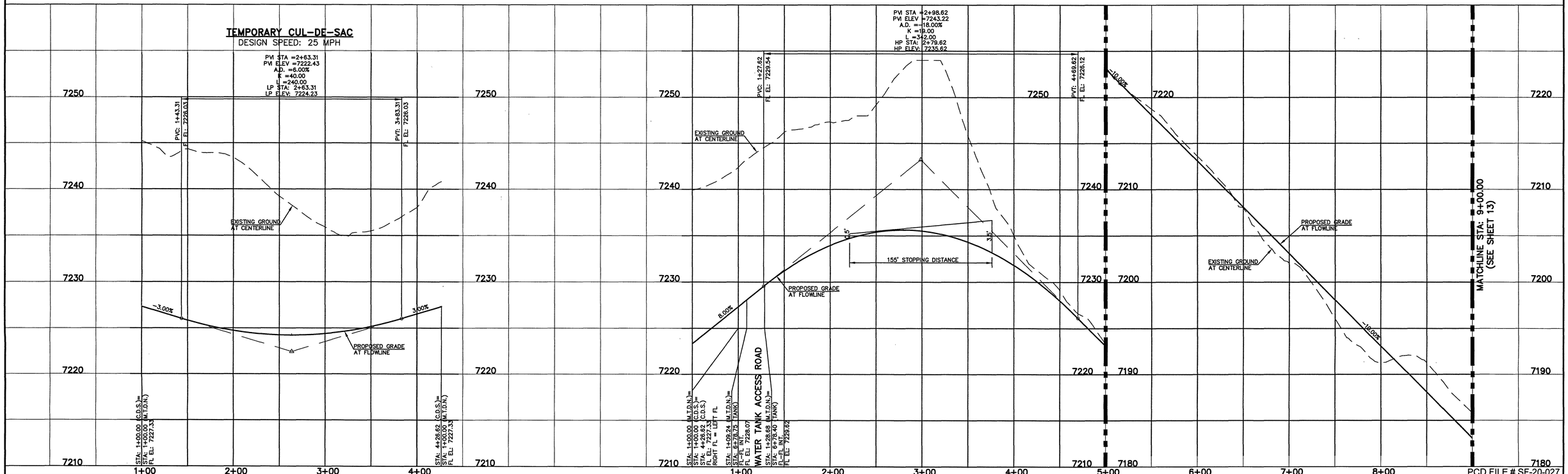


MESA TOP DRIVE NORTH (PUBLIC)

(50' R.O.W./60' R.O.W. URBAN LOCAL)
DESIGN SPEED: 25 MPH

TEMPORARY CUL-DE-SAC

DESIGN SPEED: 25 MPH



STREET ABBREVIATION INDEX:

M.T.D.N.	MESA TOP DRIVE NORTH
M.T.D.S.	MESA TOP DRIVE SOUTH
T.T.W.	TIMBER TREK WAY

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NO.	REVISION	DATE

REVIEW:

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4/5/21

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

FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVEMENT PLAN

MESA TOP DRIVE NORTH STA:1+00 - STA:9+00

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=	50'	SHEET 12	OF 30
CHECKED BY		(V) 1"=	5'	JOB NO.	1175.60

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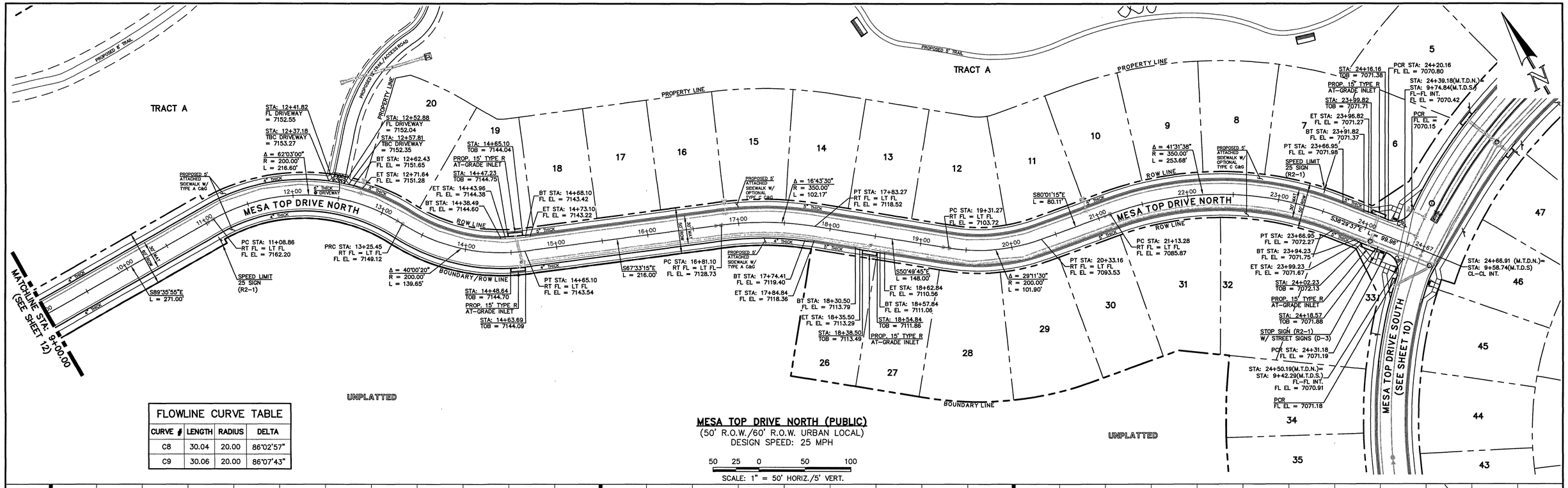

FLOWLINE CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
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C9	30.06	20.00	86°07'43"

MESA TOP DRIVE NORTH (PUBLIC)
(50' R.O.W./60' R.O.W. URBAN LOCAL)
DESIGN SPEED: 25 MPH

50 25 0 50 100
SCALE: 1" = 50' HORIZ./5' VERT.

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(719)785-0799(Fax)

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PUBLIC STREET IMPROVEMENT PLAN
MESA TOP DRIVE NORTH
STA. 9+00.00 – END

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=	50'	SHEET	13 OF 30
CHECKED BY		(V) 1"=	5'	JOB NO.	1175.60

PCD FILE # SF-20-027

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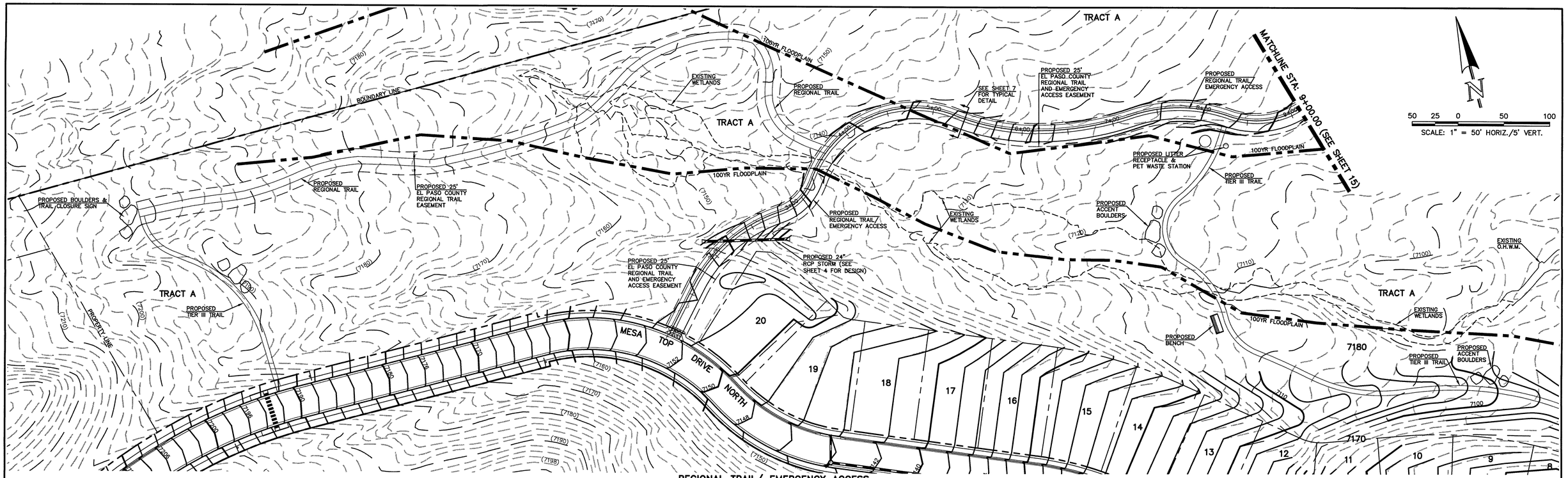
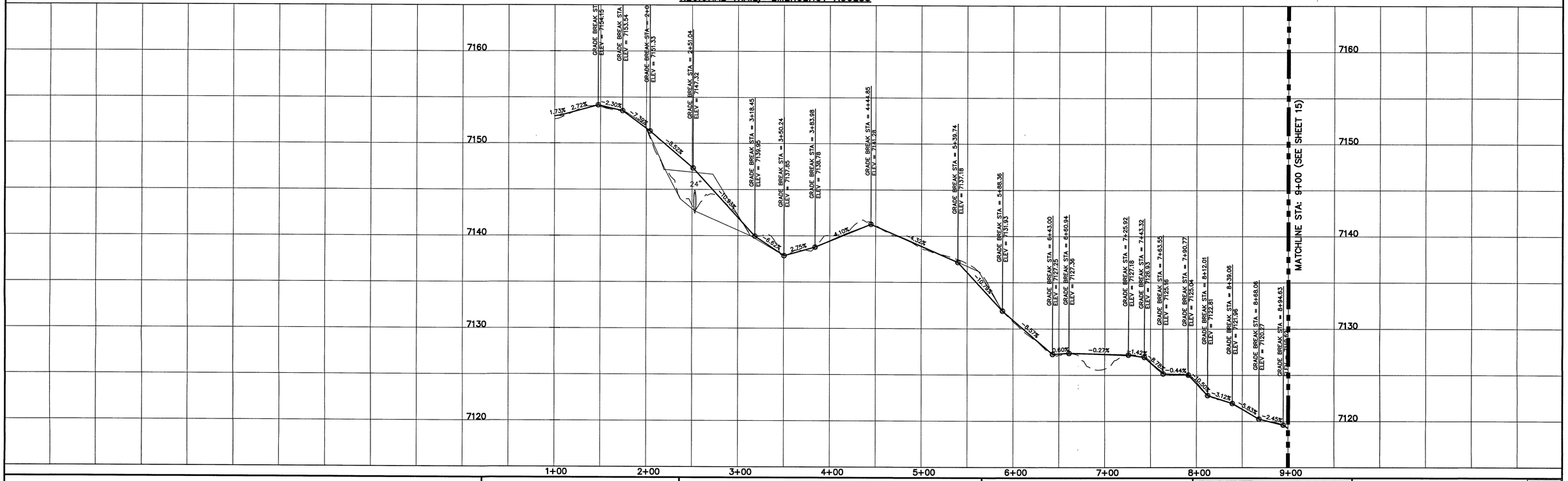


REGIONAL TRAIL/ EMERGENCY ACCESS



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REGIONAL TRAIL & EMERGENCY ACCESS
PLAN & PROFILE
STA: 1+00-9+00

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'	SHEET 14	OF 30
CHECKED BY		(V) 1"= 5'	JOB NO.	1175.60

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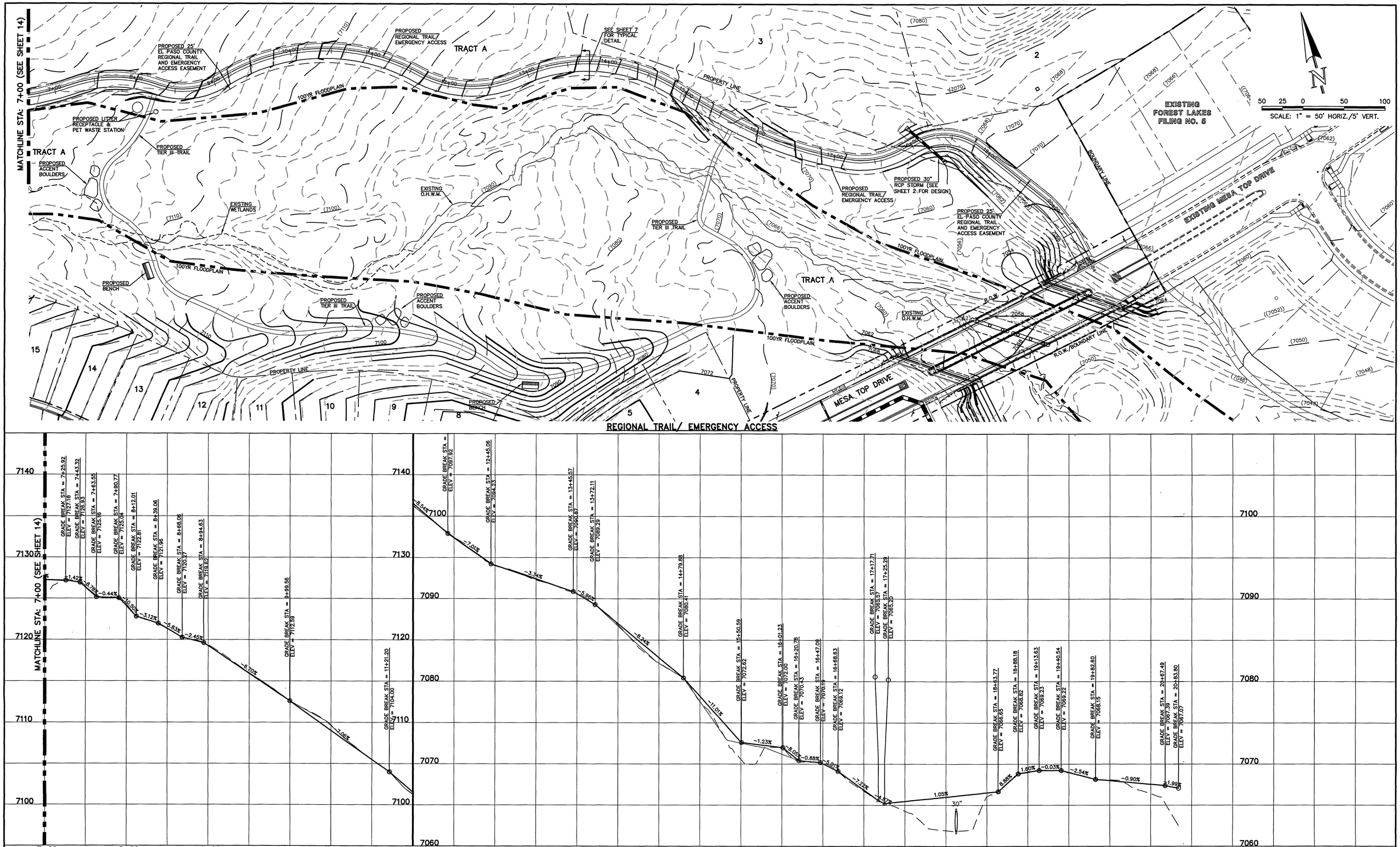

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REGIONAL TRAIL & EMERGENCY ACCESS
PLAN & PROFILE
STA: 7+00.00-END

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=	50'	SHEET	15 OF 30
CHECKED BY		(V) 1"=	5'	JOB NO.	1175.60

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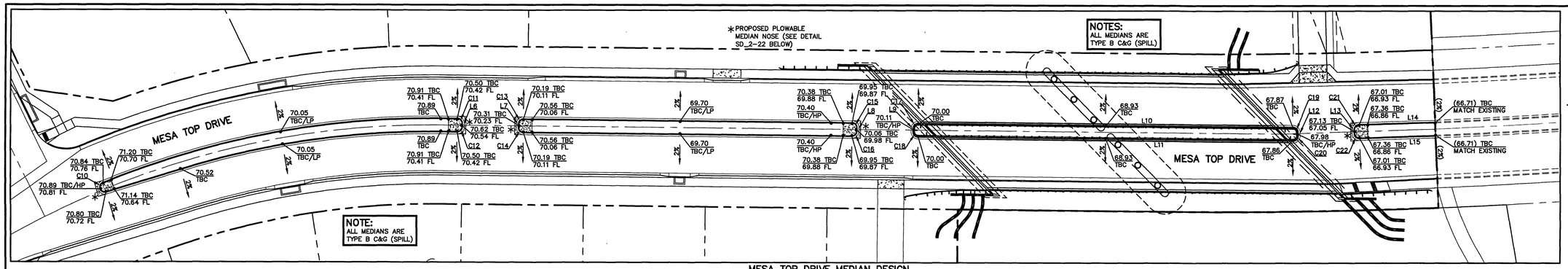


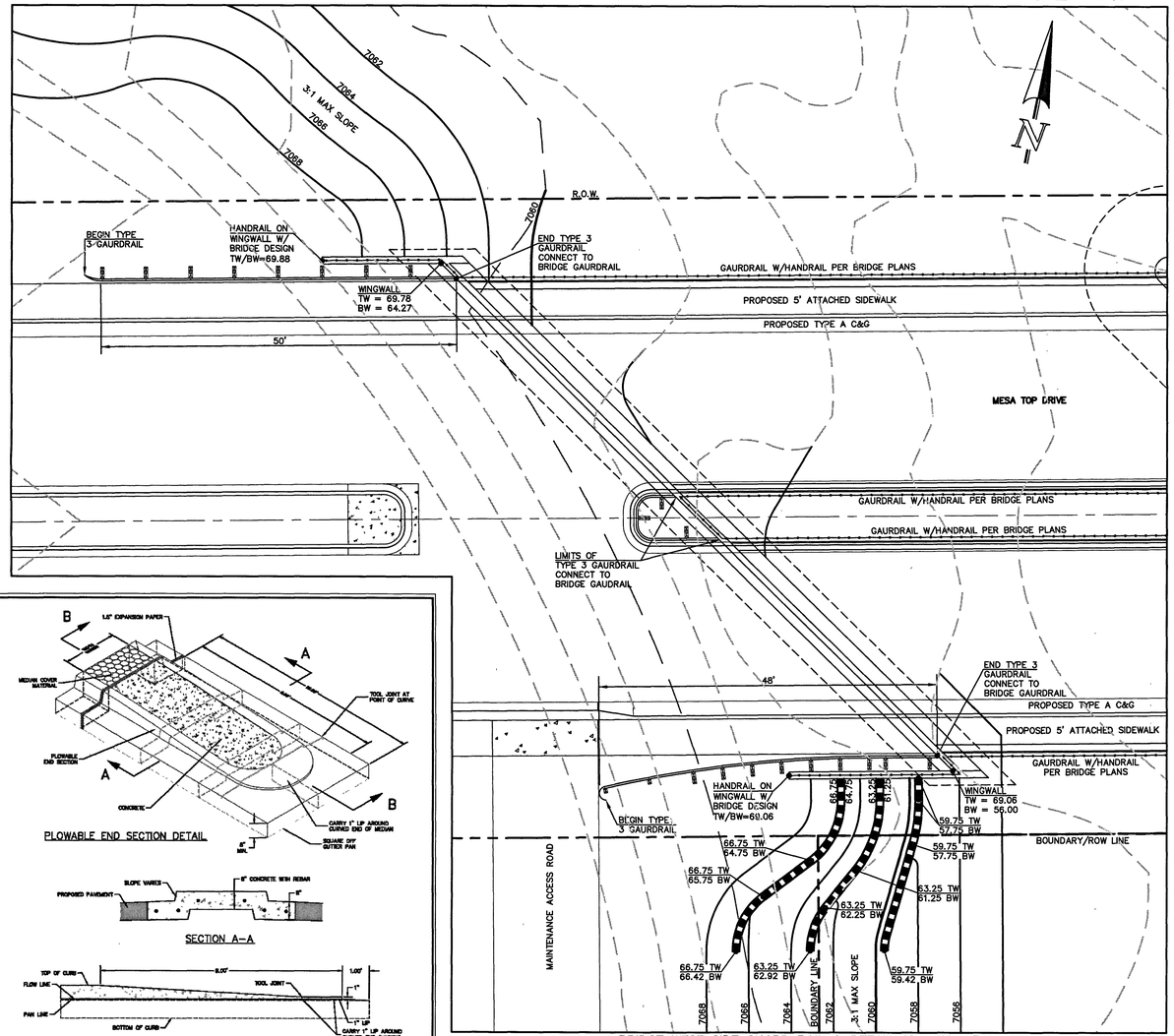
MESA TOP DRIVE MEDIAN DESIGN

30 15 0 30 60

SCALE: 1" = 30'

FLOWLINE LINE TABLE		
LINE #	LENGTH	DIRECTION
L6	2.00	N11°27'50"W
L7	2.00	S11°27'50"E
L8	2.00	N11°27'50"W
L9	2.00	S11°27'50"E
L10	215.39	S78°32'10"W
L11	215.48	N78°32'10"E
L12	2.00	S14°00'50"E
L13	2.17	S13°59'00"E
L14	43.81	S76°14'10"W
L15	43.86	N76°01'00"E

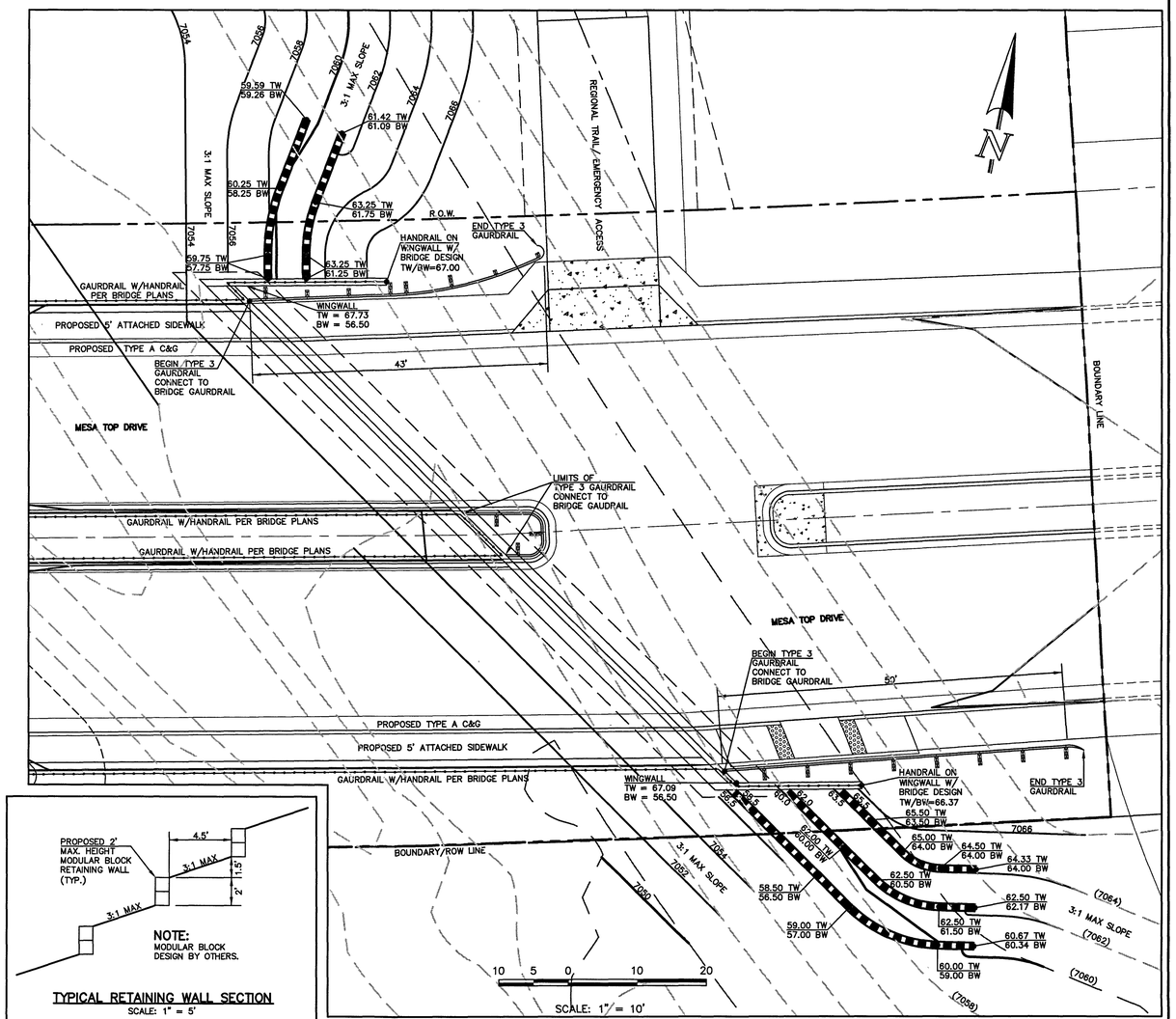
FLOWLINE CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C10	9.16	3.00	174°52'43"
C11	4.71	3.00	90°00'00"
C12	4.71	3.00	90°00'00"
C13	4.71	3.00	90°00'00"
C14	4.71	3.00	90°00'00"
C15	4.71	3.00	90°00'00"
C16	4.71	3.00	90°00'00"
C17	4.71	3.00	90°00'00"
C18	4.71	3.00	90°00'00"
C19	4.58	3.00	87°27'07"
C20	4.85	3.00	92°32'53"
C21	4.72	3.00	90°13'04"
C22	4.71	3.00	90°00'00"



BRIDGE WEST SIDE GUARD RAIL & RETAINING WALL DESIGN

10 5 0 10 20

SCALE: 1" = 10'



BRIDGE EAST SIDE GUARD RAIL & RETAINING WALL DESIGN

10 5 0 10 20

SCALE: 1"= 10'

NOTES:
1. MEDIAN NOSE CONCRETE AND CURB & GUTTER SHALL BE PLACED MONOLITHIC WITH NON-COLORED CONCRETE REINFORCED #4 REBAR AT 18" E.W.
2. MEDIANS GREATER THAN 10' WIDE (BOC TO BOC) DO NOT REQUIRE MEDIAN NOSE.

SCALE: NOT TO SCALE

TYPICAL RETAINING WALL SECTION

SCALE: 1" = 5'

PCD FILE # SF-20-027

1/12/16	Plowable Median Nose Detail Standard Drawing
DATE APPROVED: 1/12/16	REVISION DATE: 1/12/16
André P. Brackin, DEPARTMENT OF TRANSPORTATION	FILE NAME: SD_2-22

EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
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NO.	REVISION	DATE

REVIEW:

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4/9/21

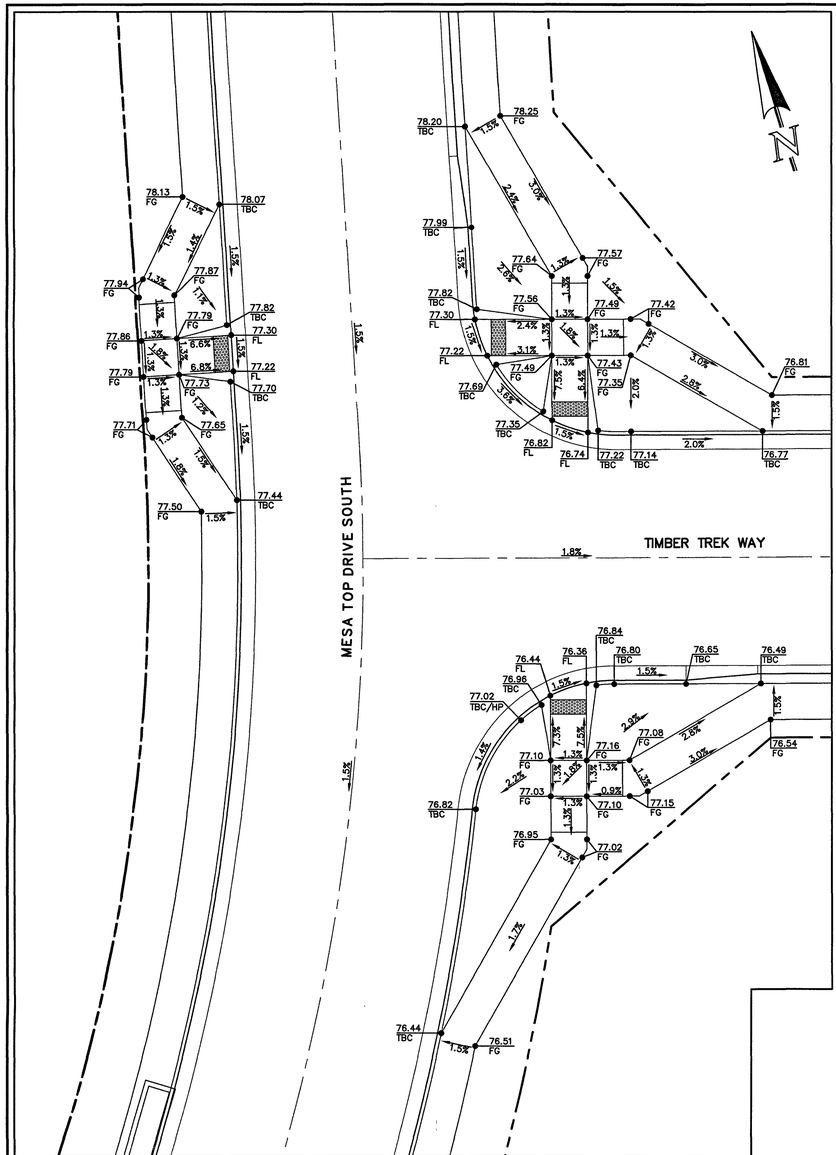
CLASSIC CONSULTING

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

FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVOEMENT PLAN
MEDIAN DESIGN, GUARD RAIL AND RETAINING WALL DESIGN

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=VARIES		SHEET 16	OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.60

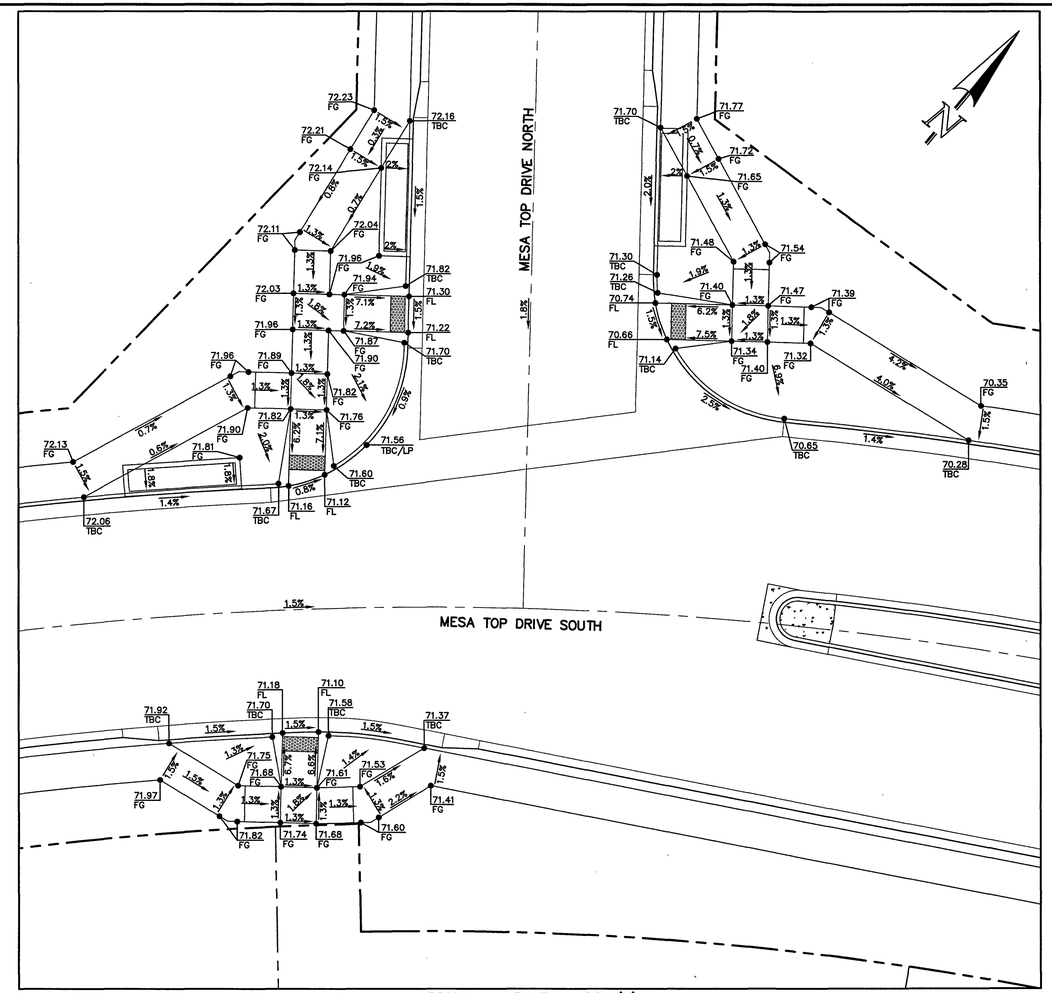
N:\1175GO\DRAWINGS\CONSTRUCTION\STREETS\16-117560-SD-08.dwg, 4/5/2021 2:17:16 PM, 1:1



PEDESTRIAN RAMP SECTION 'A'

10 5 0 10 20

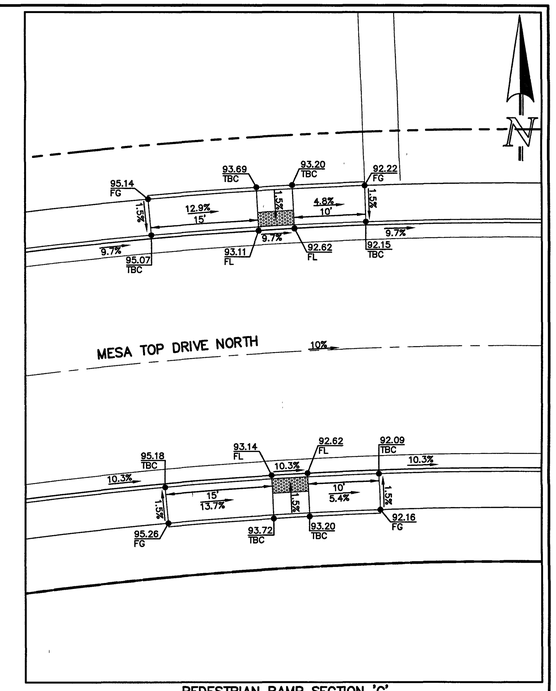
SCALE: 1" = 10'



PEDESTRIAN RAMP SECTION 'B'

10 5 0 10 20

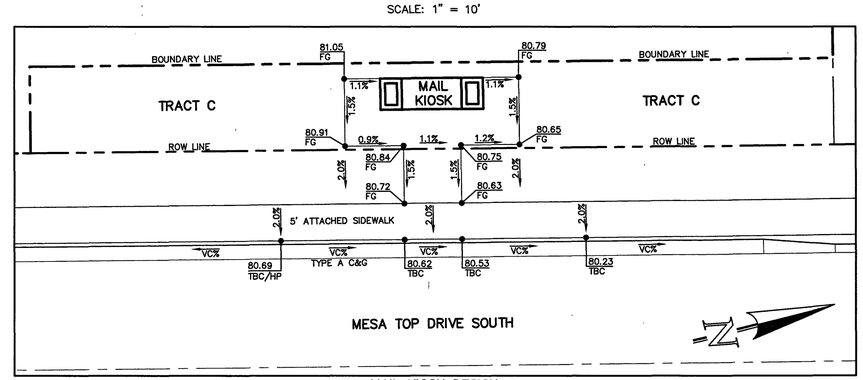
SCALE: 1" = 10'



PEDESTRIAN RAMP SECTION 'C'

10 5 0 10 20

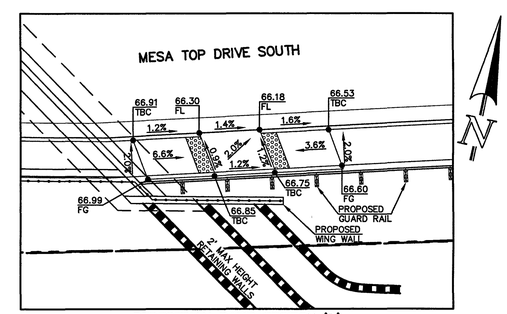
SCALE: 1" = 10'



MAIL KIOSK DESIGN

10 5 0 10 20

SCALE: 1" = 10'



PEDESTRIAN RAMP SECTION 'D'

10 5 0 10 20

SCALE: 1" = 10'

PCD FILE # SF-20-027

48 HOURS BEFORE YOU DIG,
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NO.	REVISION	DATE

REVIEW:

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

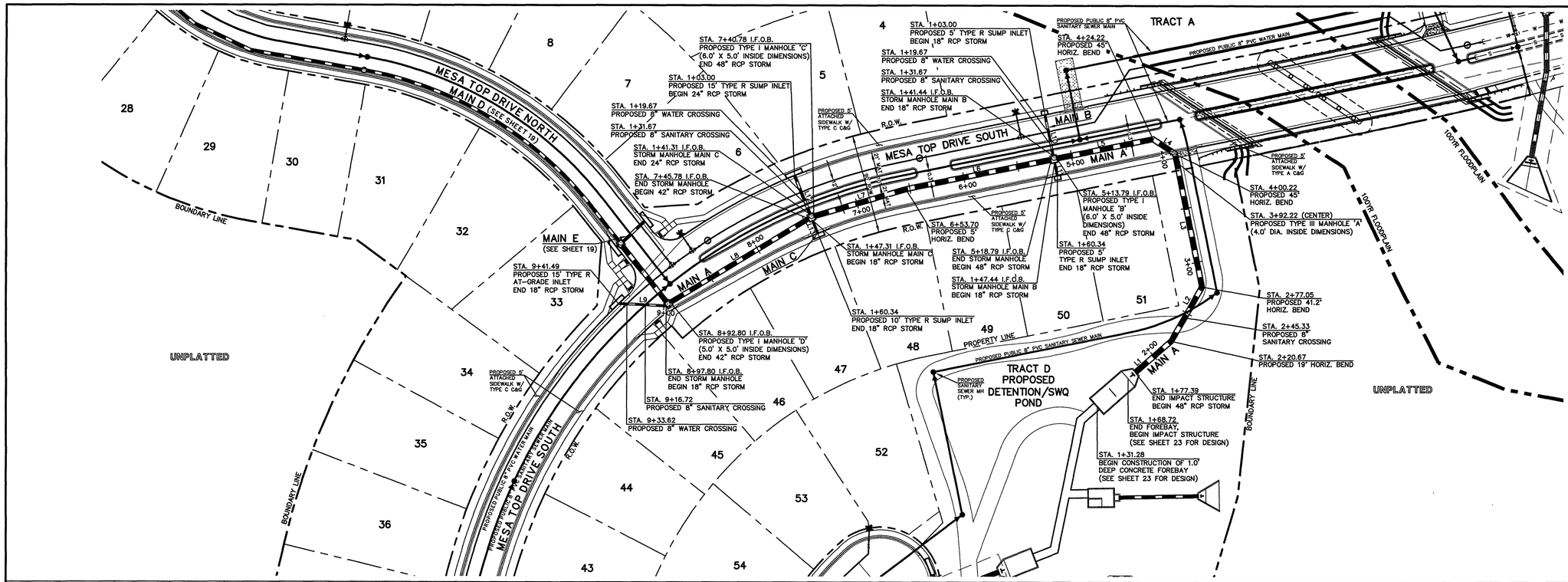
KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE

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

FOREST LAKES FILING NO. 6
PUBLIC STREET IMPROVOEMENT PLAN
PEDESTRIAN RAMP & MAIL KIOSK DESIGN

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"=VARIES	SHEET 17	OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

N:\1175GO\DRAWINGS\CONSTRUCTION\STREETS\17-1175GO-S1-09.dwg, 4/5/2021 2:19:03 PM, 1:1

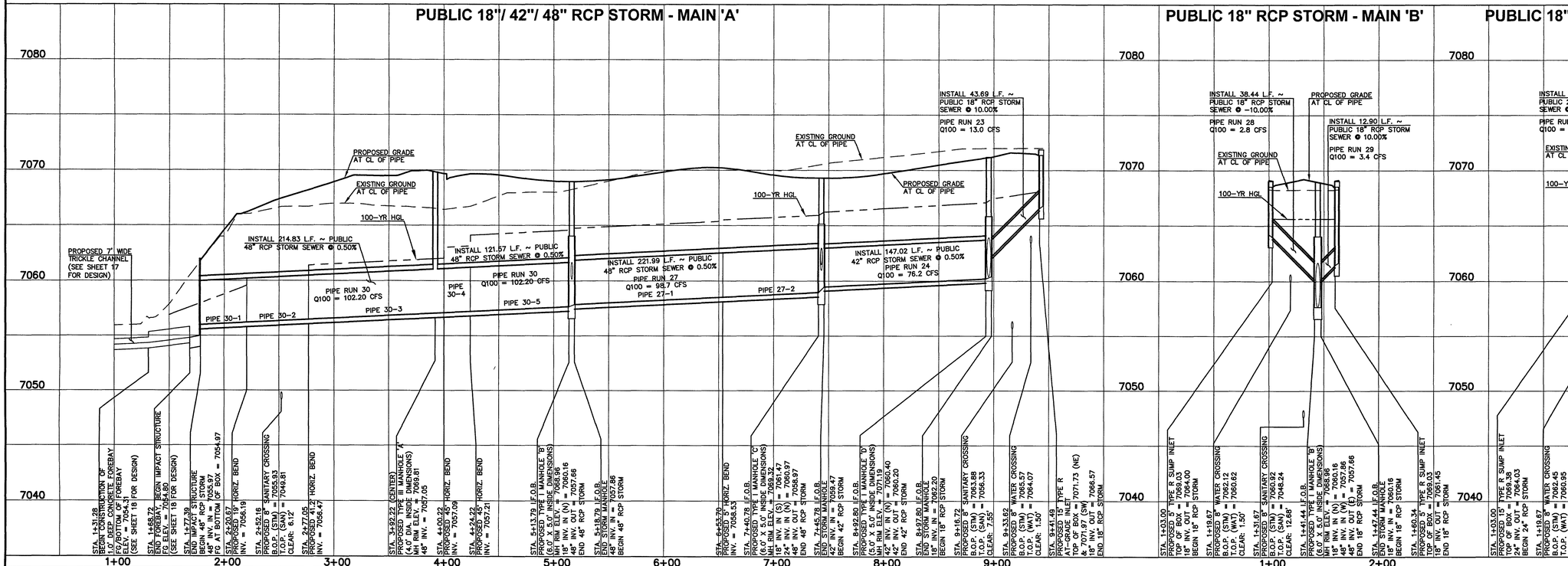


STORM LINE TABLE		
Line #	Length	Direction
L1	43.28	S48°43'13"W
L2	56.38	S29°45'33"W
L3	123.17	S11°27'50"E
L4	24.00	S56°27'50"E
L5	89.57	N78°32'10"E
L6	134.91	N78°32'10"E
L7	87.08	N73°32'00"E
L8	147.02	N58°49'20"E
L9	43.67	S87°16'10"E
L10	38.44	S11°27'50"E
L11	12.90	S11°27'50"E
L12	38.31	N22°00'30"W
L13	13.02	N22°00'30"W

NOTES:
ALL STORM FACILITIES WITHIN R.O.W. ARE PUBLIC, UNLESS OTHERWISE NOTED.

ALL STORM SEWER WITH 100-YR HGL ABOVE THE TOP OF PIPE SHALL BE INSTALLED WITH PRESSURE PIPE AND WATERTIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.

STORM MANHOLE AND INLET DETAILS ARE LOCATED ON SHEETS 29-30.



LEGEND

PROPOSED FIRE HYDRANT	EXISTING FIRE HYDRANT
PROPOSED WATER MAIN	EXISTING WATER MAIN
PROPOSED SANITARY SEWER MAIN	EXISTING SANITARY SEWER MAIN
PROPOSED STORM SEWER	EXISTING STORM SEWER
PROPOSED STORM INLET	EXISTING STORM INLET
ROW/BOUNDARY LINE	EXISTING GAS MAIN
	EXISTING ELECTRIC

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE

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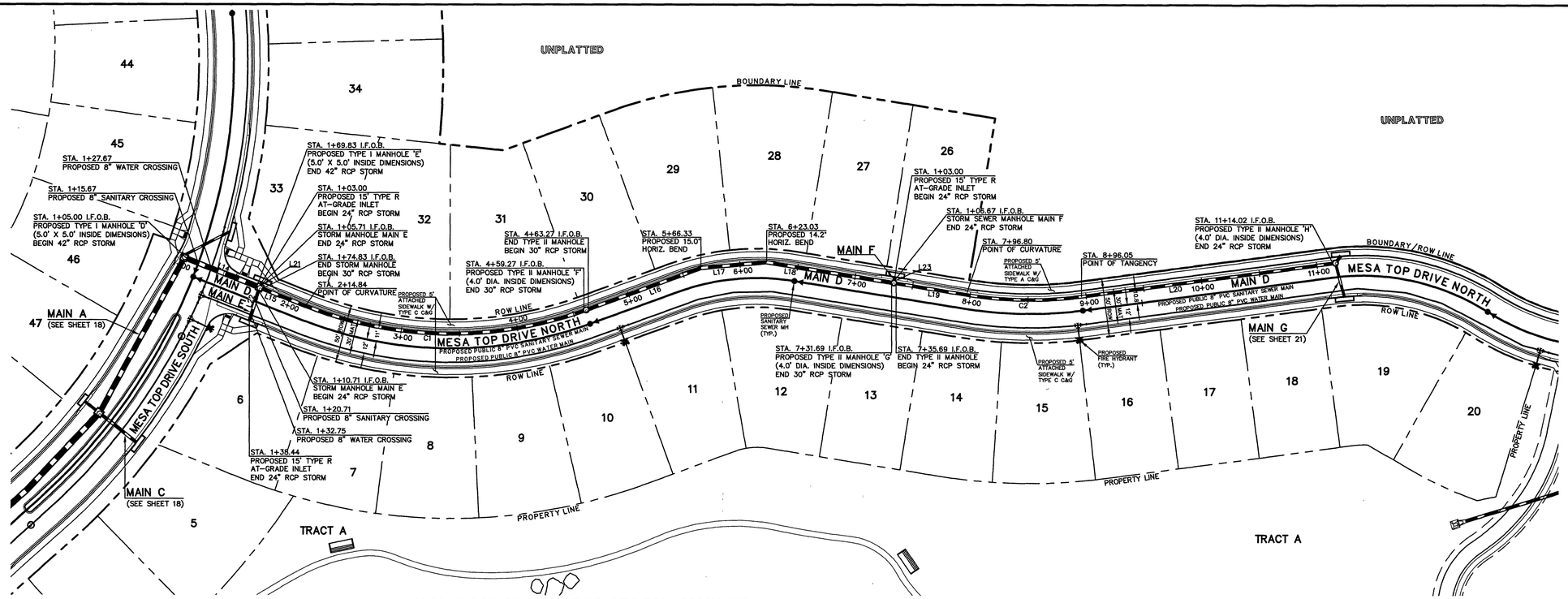
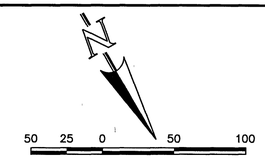
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
PUBLIC STORM SEWER PLAN
MAIN 'A'/ MAIN 'B'/ MAIN 'C'

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"=	50'	SHEET 18	OF 30
CHECKED BY		(V) 1"=	5'	JOB NO.	1175.60

N:\117560\DRAWINGS\CONSTRUCTION\STORM\18-117560-STM-01.dwg, 4/5/2021 2:22:49 PM, 1:1





SCALE: 1" = 50'

STORM LINE TABLE		
Line #	Length	Direction
L14	64.83	N38°29'40"W
L15	40.01	N38°29'40"W
L16	103.06	N80°01'10"W
L17	56.70	N65°01'10"W
L18	108.66	N50°49'40"W
L19	61.11	N50°49'40"W
L20	217.97	N67°33'10"W
L21	2.71	S51°30'20"W
L22	27.73	S46°31'40"W
L23	3.67	N39°10'20"E

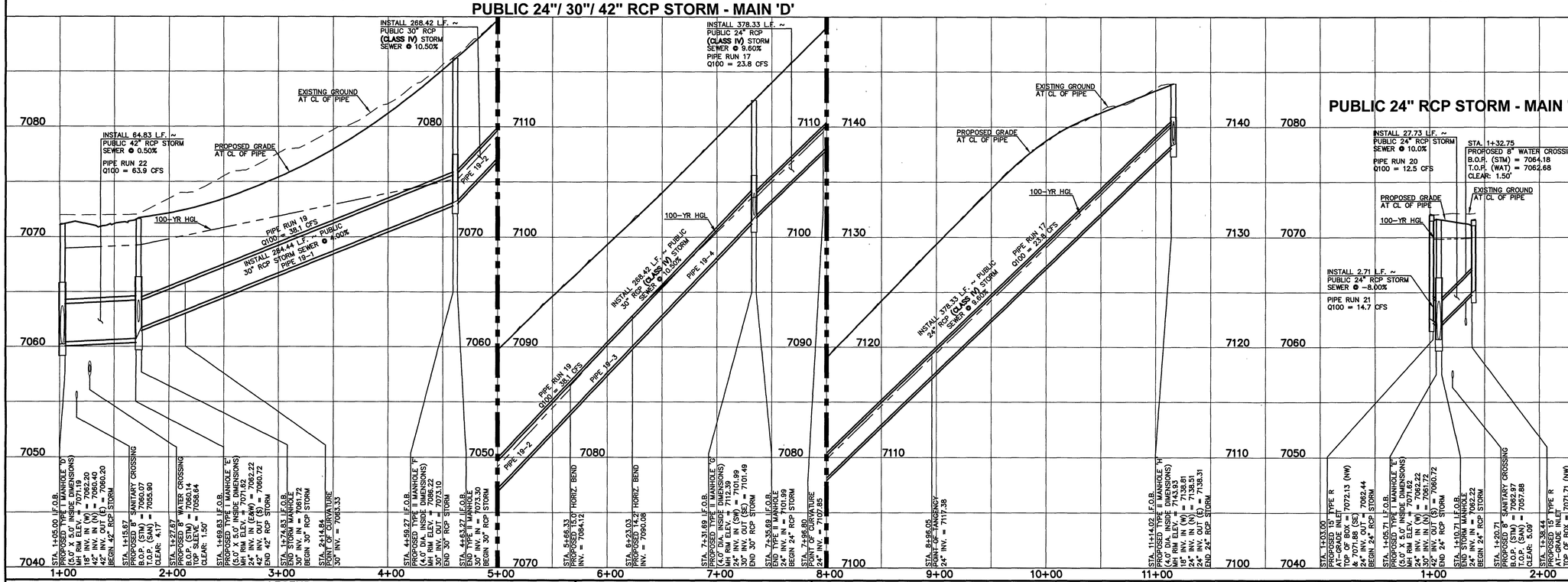
STORM CURVE TABLE			
Curve #	Length	Radius	Delta
C1	244.43	340.00	41°11'20"
C2	99.25	340.00	16°43'30"

NOTES:
ALL STORM FACILITIES WITHIN R.O.W. ARE PUBLIC, UNLESS OTHERWISE NOTED.

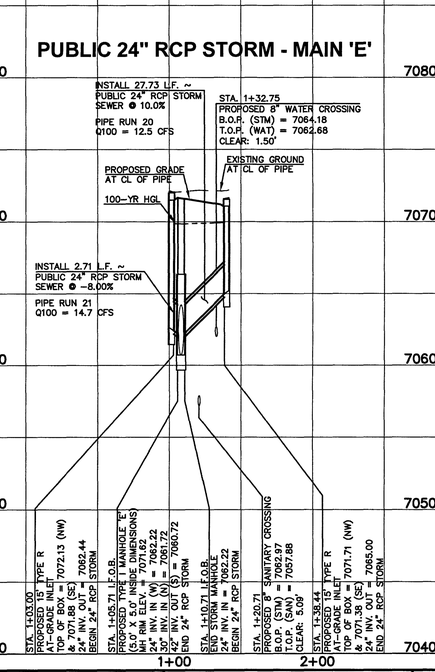
ALL STORM SEWER WITH 100-YR HGL ABOVE THE TOP OF PIPE SHALL BE INSTALLED WITH PRESSURE PIPE AND WATERTIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.

STORM MANHOLE AND INLET DETAILS ARE LOCATED ON SHEETS 29-30.

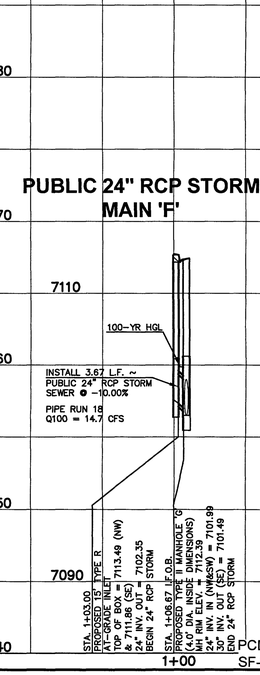
PUBLIC 24"/ 30"/ 42" RCP STORM - MAIN 'D'



PUBLIC 24" RCP STORM - MAIN 'E'



PUBLIC 24" RCP STORM MAIN 'F'



PCD FILE # SF-20-027

LEGEND

PROPOSED FIRE HYDRANT	EXISTING FIRE HYDRANT
PROPOSED WATER MAIN	EXISTING WATER MAIN
PROPOSED SANITARY SEWER MAIN	EXISTING SANITARY SEWER MAIN
PROPOSED STORM SEWER	EXISTING STORM SEWER
PROPOSED STORM INLET	EXISTING STORM INLET
ROW/BOUNDARY LINE	EXISTING GAS MAIN
	EXISTING ELECTRIC

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NO.	REVISION	DATE

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

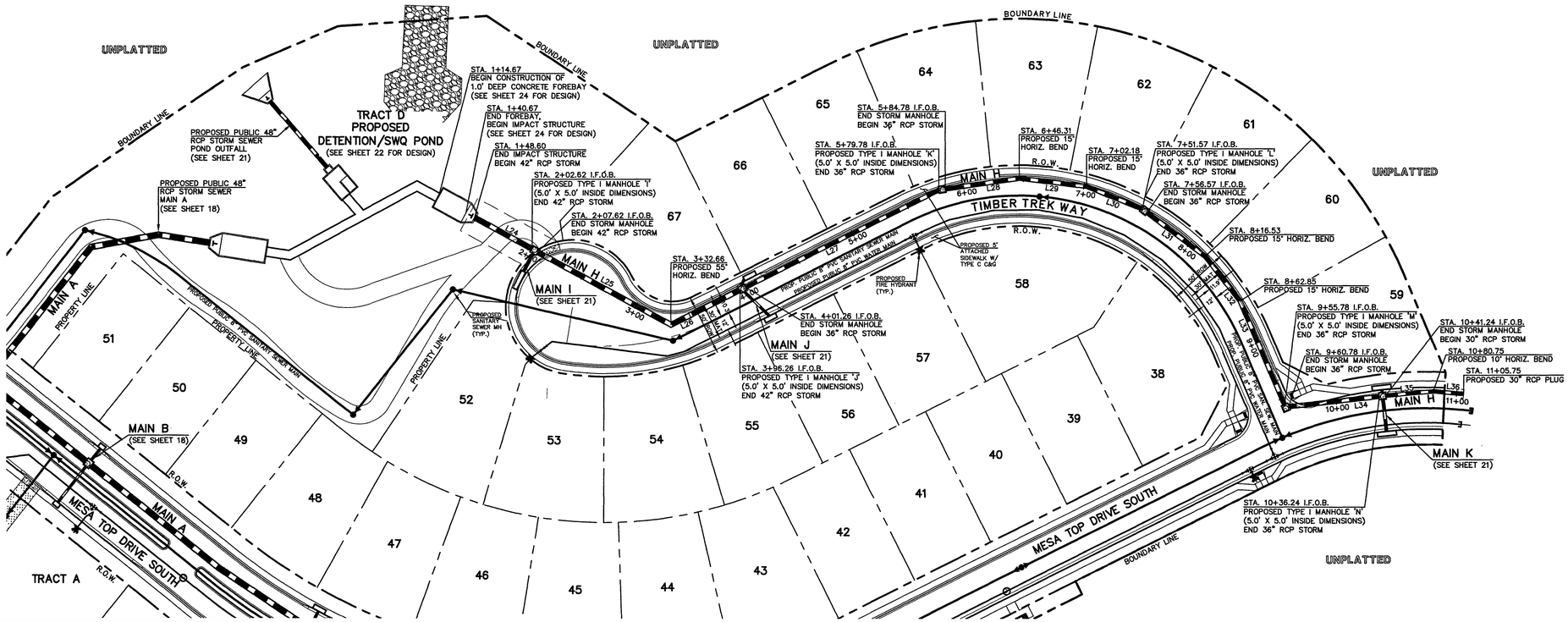
KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4/6/21

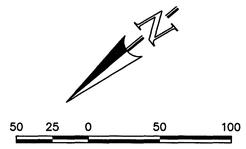
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
PUBLIC STORM SEWER PLAN
MAIN 'D'/ MAIN 'E'/ MAIN 'F'

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'	SHEET 19	OF 30
CHECKED BY		(V) 1"= 5'	JOB NO.	1175.60

N:\1175.60\DRAWINGS\CONSTRUCTION\STORM\19-117560-STM-02.dwg, 4/5/2021 2:24:42 PM, 1:1





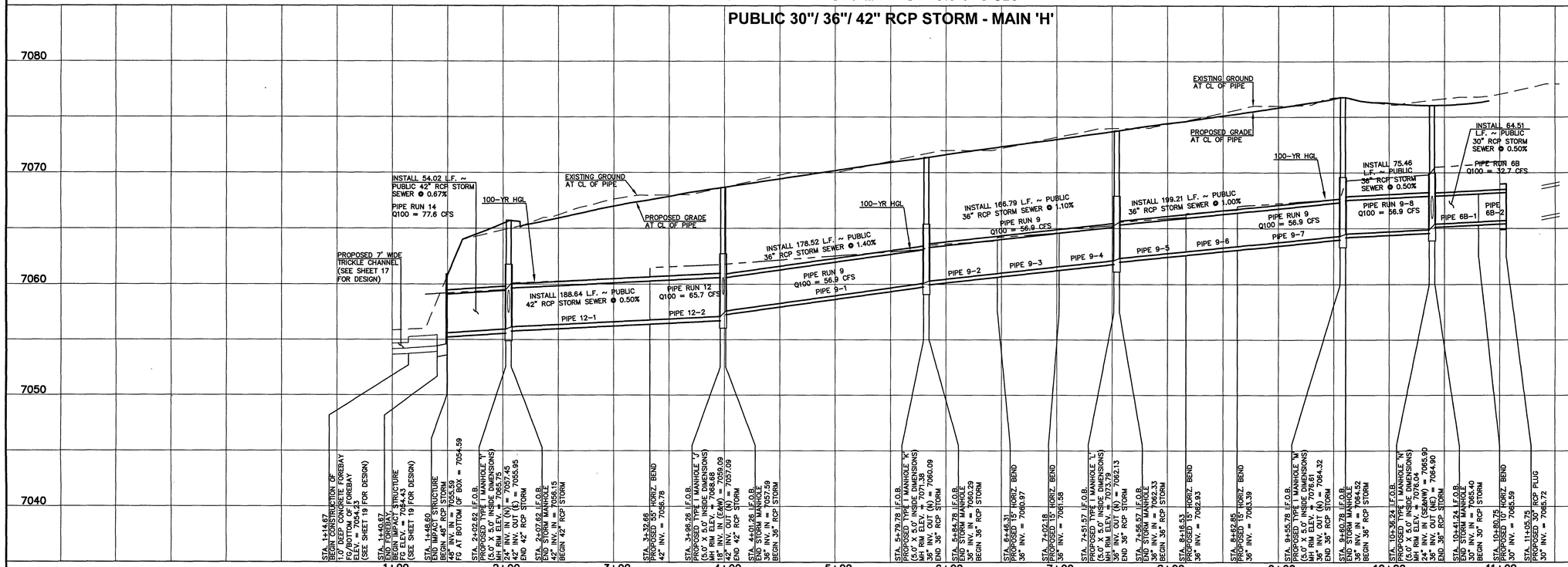
STORM LINE TABLE		
Line #	Length	Direction
L24	54.02	N68°23'20"E
L25	125.04	N68°23'20"E
L26	63.60	N13°23'20"E
L27	178.51	N13°23'20"E
L28	61.53	N31°45'20"E
L29	55.87	N46°45'20"E
L30	49.39	N61°45'20"E
L31	59.96	N76°45'20"E
L32	46.32	S88°14'40"E
L33	92.93	S73°14'40"E
L34	75.46	N33°26'30"E
L35	39.51	N35°00'20"E
L36	25.00	N45°00'20"E

NOTES:
ALL STORM FACILITIES WITHIN R.O.W. ARE PUBLIC, UNLESS OTHERWISE NOTED.

ALL STORM SEWER WITH 100-YR HGL ABOVE THE TOP OF PIPE SHALL BE INSTALLED WITH PRESSURE PIPE AND WATERTIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.

STORM MANHOLE AND INLET DETAILS ARE LOCATED ON SHEETS 29-30.

PUBLIC 30"/ 36"/ 42" RCP STORM - MAIN 'H'



PCD FILE # SF-20-027

LEGEND

PROPOSED FIRE HYDRANT	EXISTING FIRE HYDRANT
PROPOSED WATER MAIN	EXISTING WATER MAIN
PROPOSED SANITARY SEWER MAIN	EXISTING SANITARY SEWER MAIN
PROPOSED STORM SEWER	EXISTING STORM SEWER
PROPOSED STORM INLET	EXISTING STORM INLET
ROW/BOUNDARY LINE	EXISTING GAS MAIN
	EXISTING ELECTRIC

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NO.	REVISION	DATE

REVIEW:

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE: Aug 21

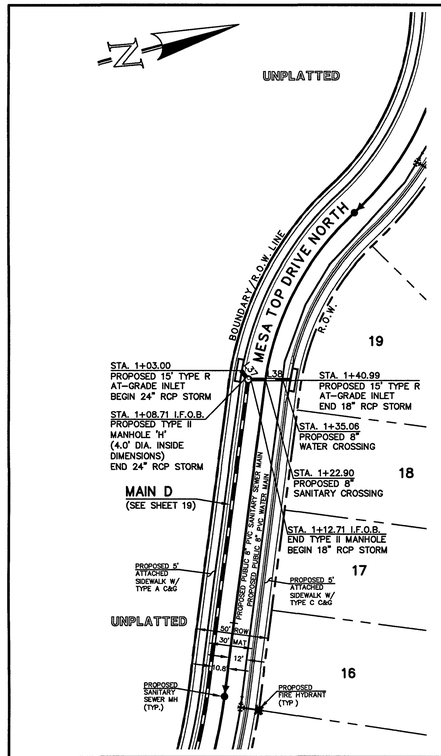
CLASSIC CONSULTING

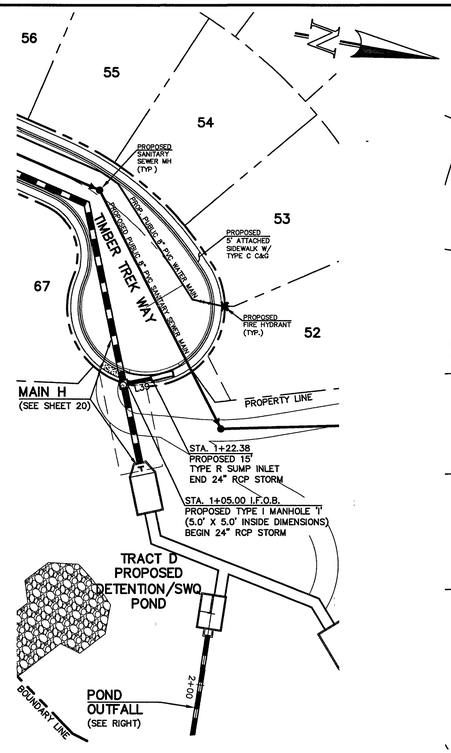
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

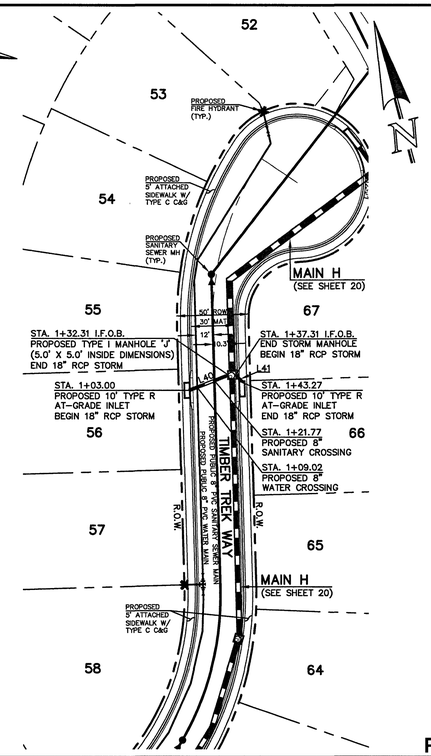
FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
PUBLIC STORM SEWER PLAN
MAIN 'H'

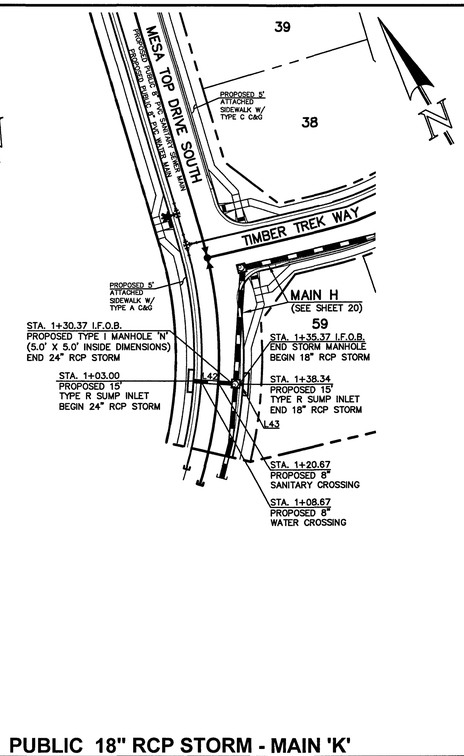
DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'	SHEET	20 OF 30
CHECKED BY		(V) 1"= 5'	JOB NO.	1175.60

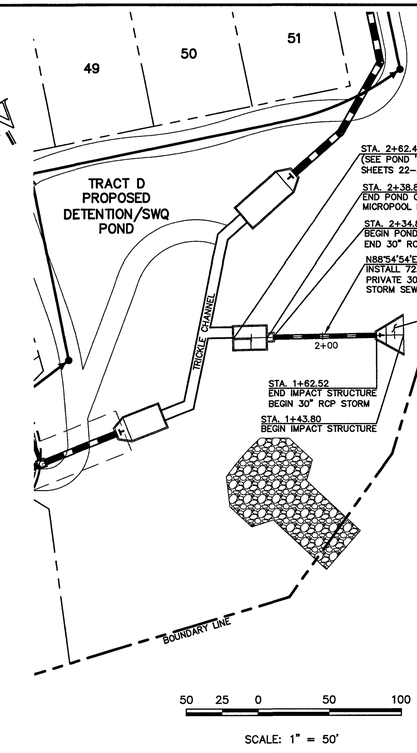
N:\1175.60\DRAWINGS\CONSTRUCTION\STORM\20-117560-STM-03.dwg, 4/5/2021 2:27:10 PM, 1:1











STORM LINE TABLE		
Line #	Length	Direction
L37	5.71	N67°26'50"E
L38	28.28	N15°06'40"E
L39	17.38	S21°36'40"E
L40	29.31	N83°40'40"E
L41	5.96	S21°36'40"E
L42	27.37	N56°33'30"W
L43	2.97	N56°33'30"W

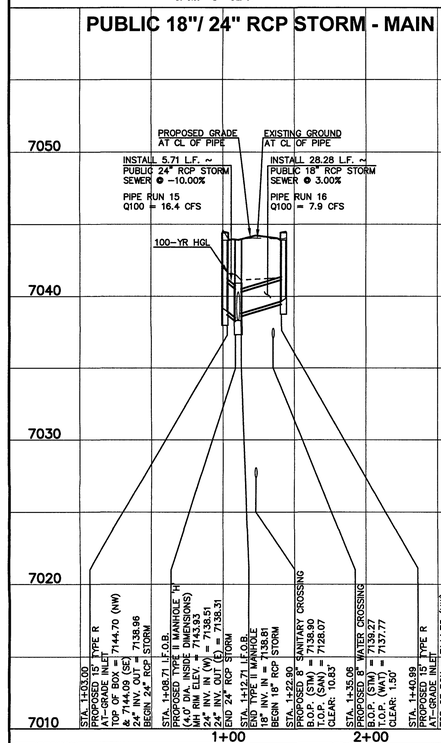
NOTES:
ALL STORM FACILITIES WITHIN R.O.W. ARE PUBLIC, UNLESS OTHERWISE NOTED.

ALL STORM SEWER WITH 100-YR HGL ABOVE THE TOP OF PIPE SHALL BE INSTALLED WITH PRESSURE PIPE AND WATERTIGHT JOINTS WITH A 100-YEAR SERVICE LIFE.

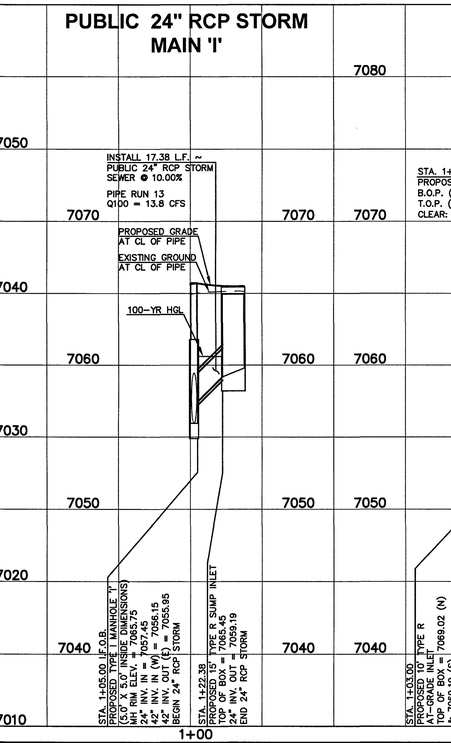
STORM MANHOLE AND INLET DETAILS ARE LOCATED ON SHEETS 29-30.

50 25 0 50 100
SCALE: 1" = 50'

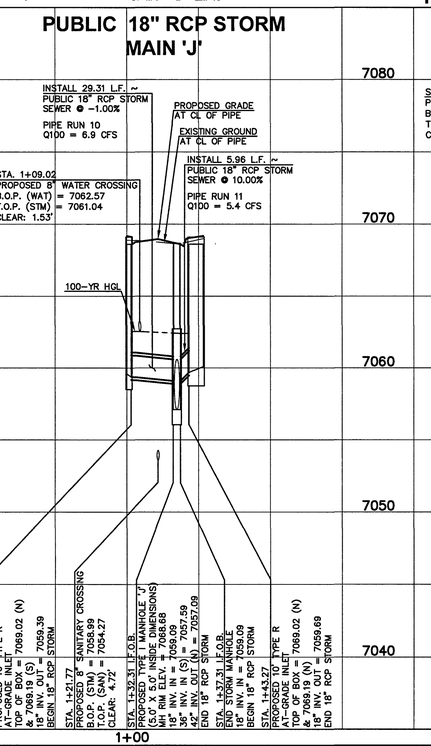
PUBLIC 18"/ 24" RCP STORM - MAIN 'G'



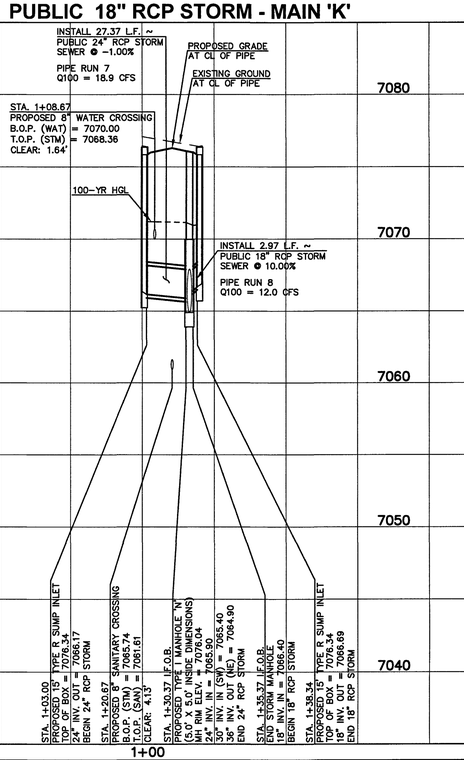
PUBLIC 24" RCP STORM MAIN 'I'



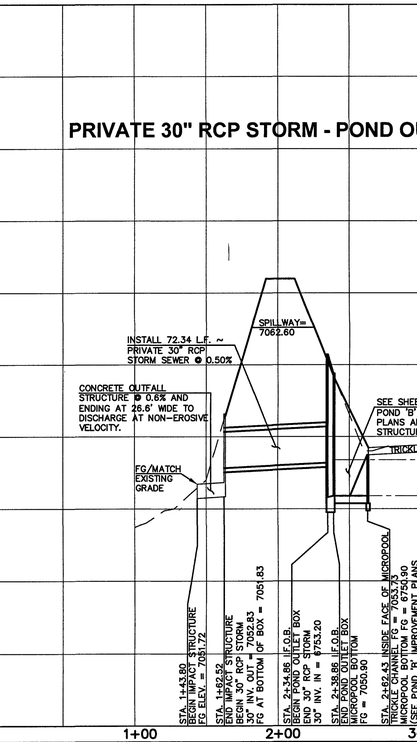
PUBLIC 18" RCP STORM MAIN 'J'



PUBLIC 18" RCP STORM - MAIN 'K'



PRIVATE 30" RCP STORM - POND OUTFALL



PCD FILE # SF-20-027

LEGEND

PROPOSED FIRE HYDRANT	EXISTING FIRE HYDRANT
PROPOSED WATER MAIN	EXISTING WATER MAIN
PROPOSED SANITARY SEWER MAIN	EXISTING SANITARY SEWER MAIN
PROPOSED STORM SEWER	EXISTING STORM SEWER
PROPOSED STORM INLET	EXISTING STORM INLET
ROW/BOUNDARY LINE	EXISTING GAS MAIN
	EXISTING ELECTRIC

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
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UTILITY NOTIFICATION CENTER OF COLORADO
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NO.	REVISION	DATE

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

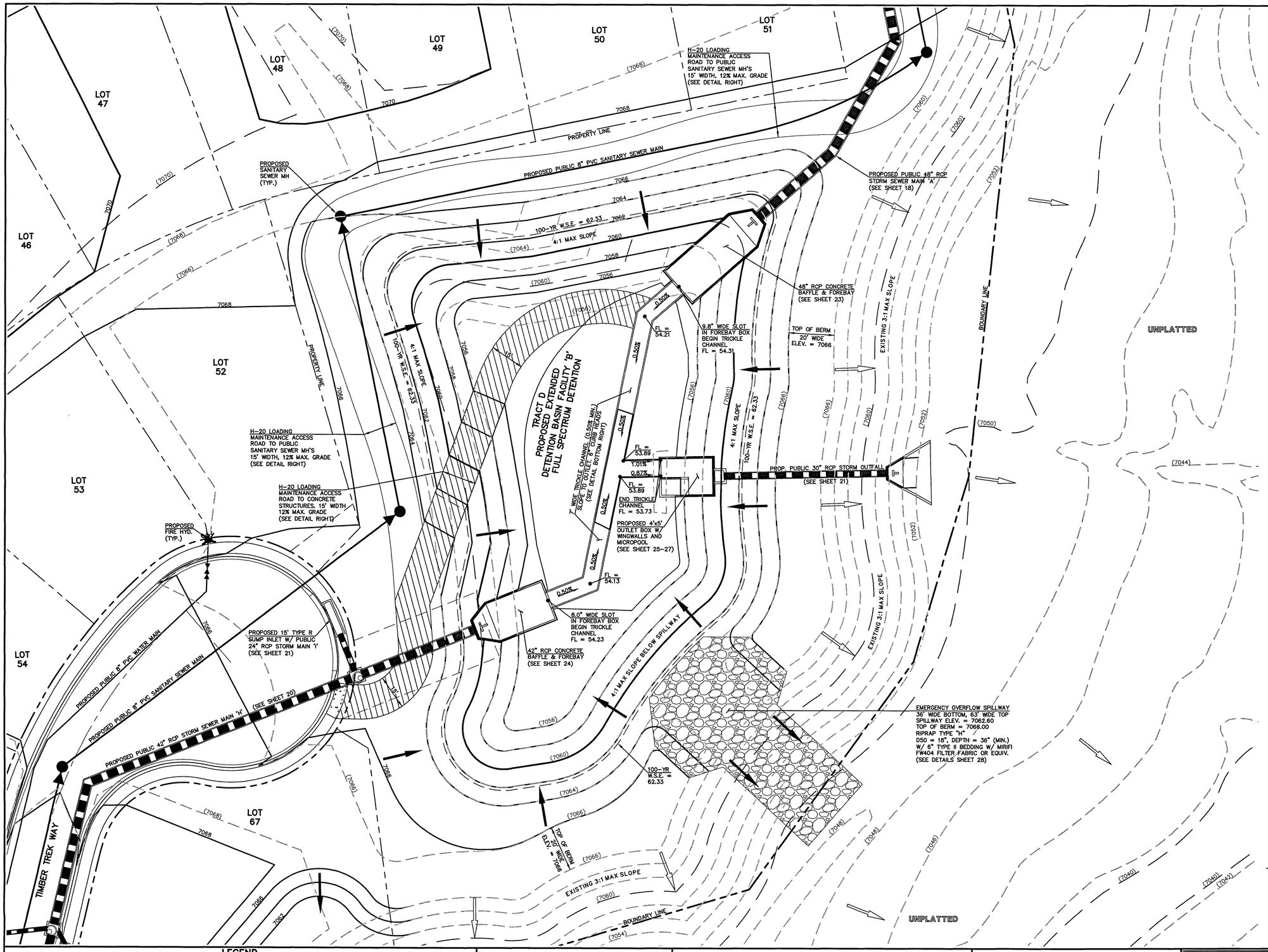
29704
KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
PUBLIC STORM SEWER PLAN
MAIN 'G'/ 'I'/ 'J'/'K'/ POND OUTFALL

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 50'		SHEET	21 OF 30
CHECKED BY		(V) 1"= 5'		JOB NO.	1175.60

N:\1175.60\DRAWINGS\CONSTRUCTION\STORM\21-1175.60-STM-04.dwg, 4/5/2021 2:28:56 PM, 1:1



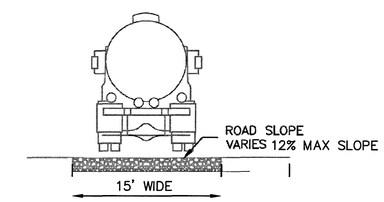
N

20 10 0 20 40

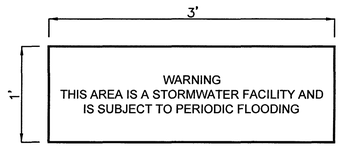
SCALE: 1" = 20'

NOTE:
POND BOTTOM TO SLOPE TOWARD TRICKLE CHANNEL AT 4% FOR FIRST 25' AND 1% THEREAFTER TO EDGE OF POND BOTTOM

ACCESS ROAD

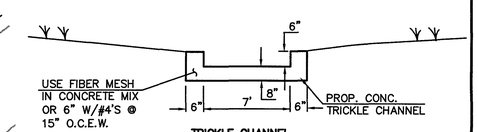


12" LAYER OF AGGREGATE BASE COURSE OR CRUSHED GRAVEL OVER COMPACTED SUBGRADE TO ELEVATION 7035.00 (EURV ELEVATION)
8" LAYER OF AGGREGATE BASE COURSE OR CRUSHED GRAVEL ABOVE 7035.00.



SIGN A

NOTES:
PROPOSED SIGN SHALL BE FABRICATED OF DURABLE MATERIALS, SUCH AS METAL OR PLASTIC, USING RED LETTERING ON A WHITE BACKGROUND



TRICKLE CHANNEL TYPICAL SECTION
N.T.S.

PCD FILE # SF-20-027

LEGEND

PROPOSED FIRE HYDRANT	EXISTING FIRE HYDRANT
PROPOSED WATER MAIN	EXISTING WATER MAIN
PROPOSED SANITARY SEWER MAIN	EXISTING SANITARY SEWER MAIN
PROPOSED STORM SEWER	EXISTING STORM SEWER
PROPOSED STORM INLET	EXISTING STORM INLET
ROW/BOUNDARY LINE	EXISTING GAS MAIN
	EXISTING ELECTRIC

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NO.	REVISION	DATE

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4/5/21

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLANS
PRIVATE POND 'B'
EDB - FULL SPECTRUM DETENTION

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 20'	SHEET	22 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

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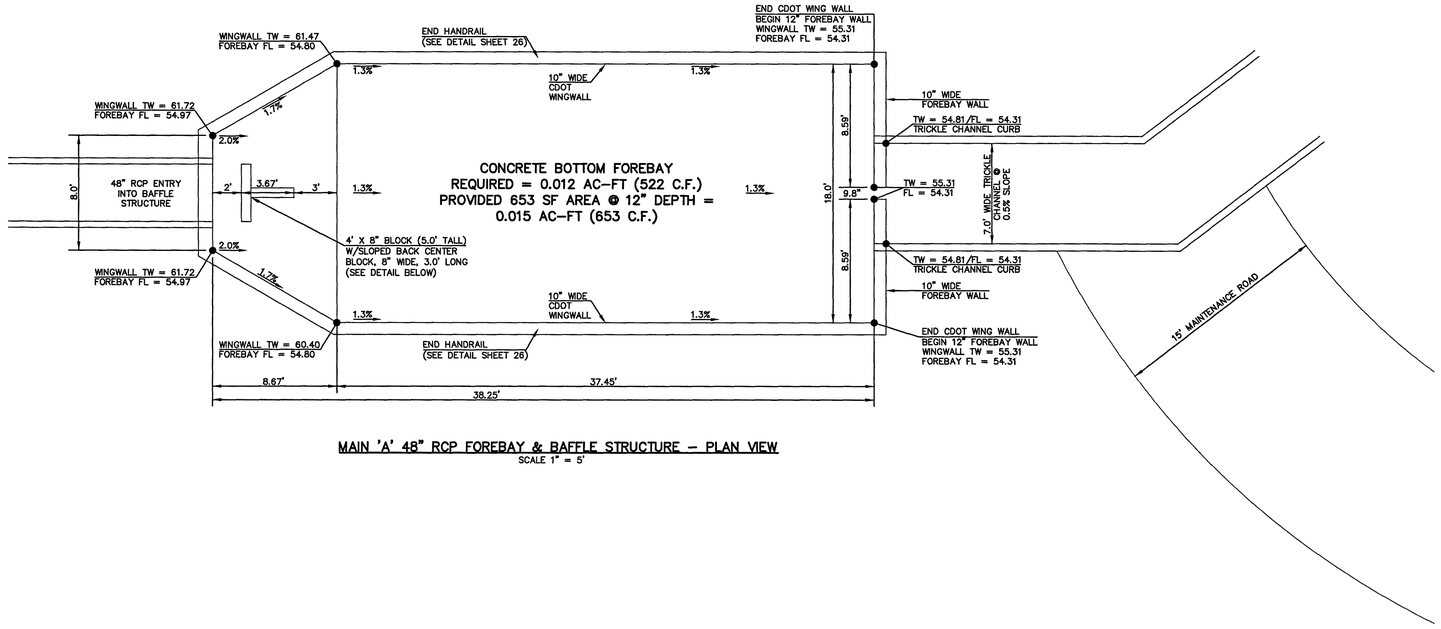
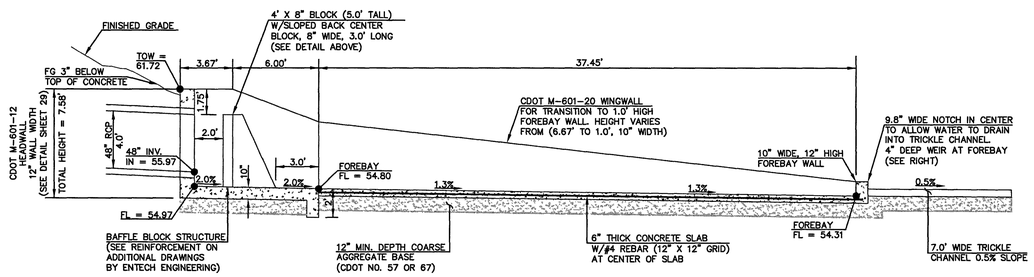
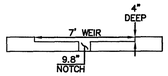


MAIN 'A' 48" RCP FOREBAY & BAFFLE STRUCTURE – PLAN VIEW
SCALE 1" = 5'



MAIN 'A' 48" RCP FOREBAY & BAFFLE STRUCTURE – PROFILE VIEW
SCALE 1" = 5'



FOREBAY WEIR DETAIL
SCALE 1" = 5'

PCD FILE # SF-20-027

48 HOURS BEFORE YOU DIG,
CALL UTILITY LOCATORS
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NO.	REVISION	DATE

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 8/9/24

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

MAIN 'A' – 48" IMPACT STRUCTURE

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 5'	SHEET 23	OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

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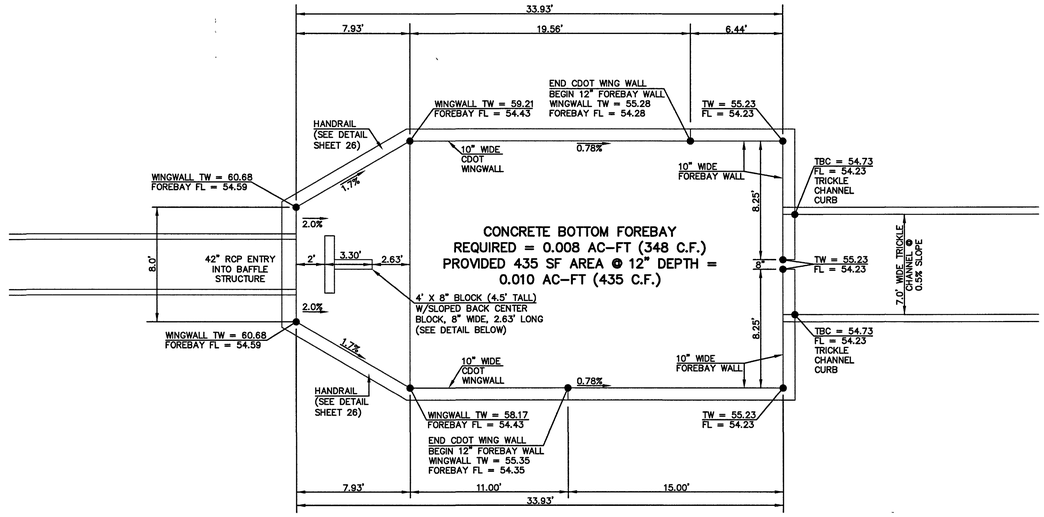
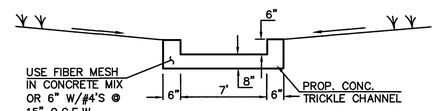


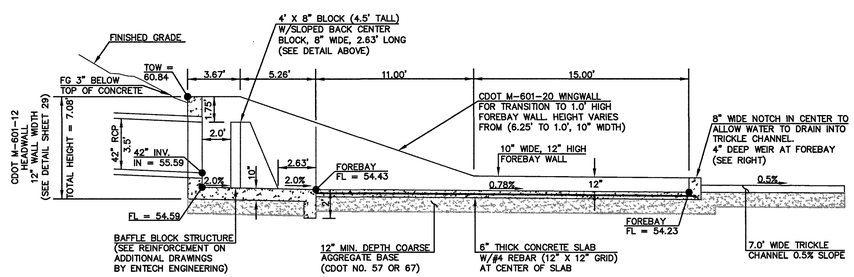
MAIN 'H' 42" RCP FOREBAY & BAFFLE STRUCTURE – PLAN VIEW

SCALE 1" = 5'

NOTE:
POND BOTTOM TO SLOPE TOWARD TRICKLE CHANNEL AT 4% FOR FIRST 25' AND 1% THEREAFTER TO EDGE OF POND BOTTOM

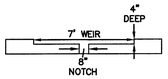


TRICKLE CHANNEL
TYPICAL SECTION
N.T.S.



MAIN 'H' 42" RCP FOREBAY & BAFFLE STRUCTURE – PROFILE VIEW

SCALE 1" = 5'



FOREBAY WEIR DETAIL

PCD FILE # SF-20-027

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REVIEW:

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4-9-21

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

MAIN 'H' – 42" IMPACT STRUCTURE

DESIGNED BY	MAL	SCALE		DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 5'		SHEET 24	OF 30
CHECKED BY		(V) 1"= N/A		JOB NO.	1175.60

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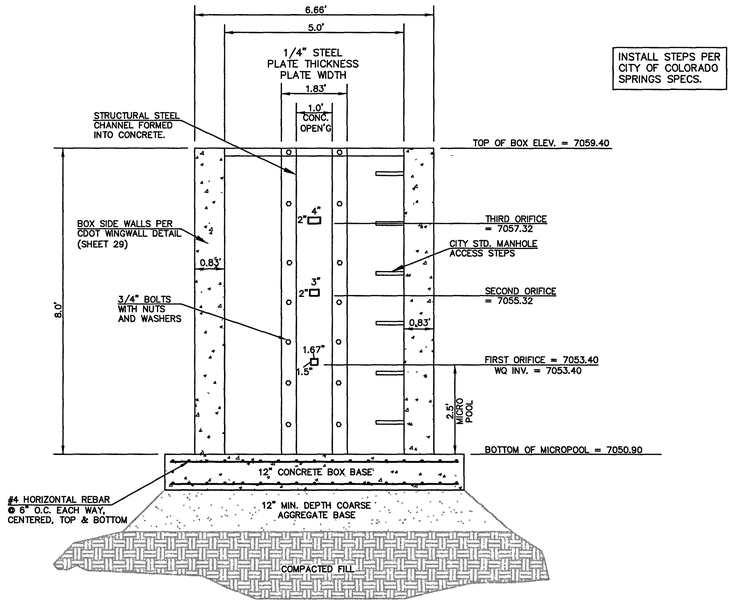
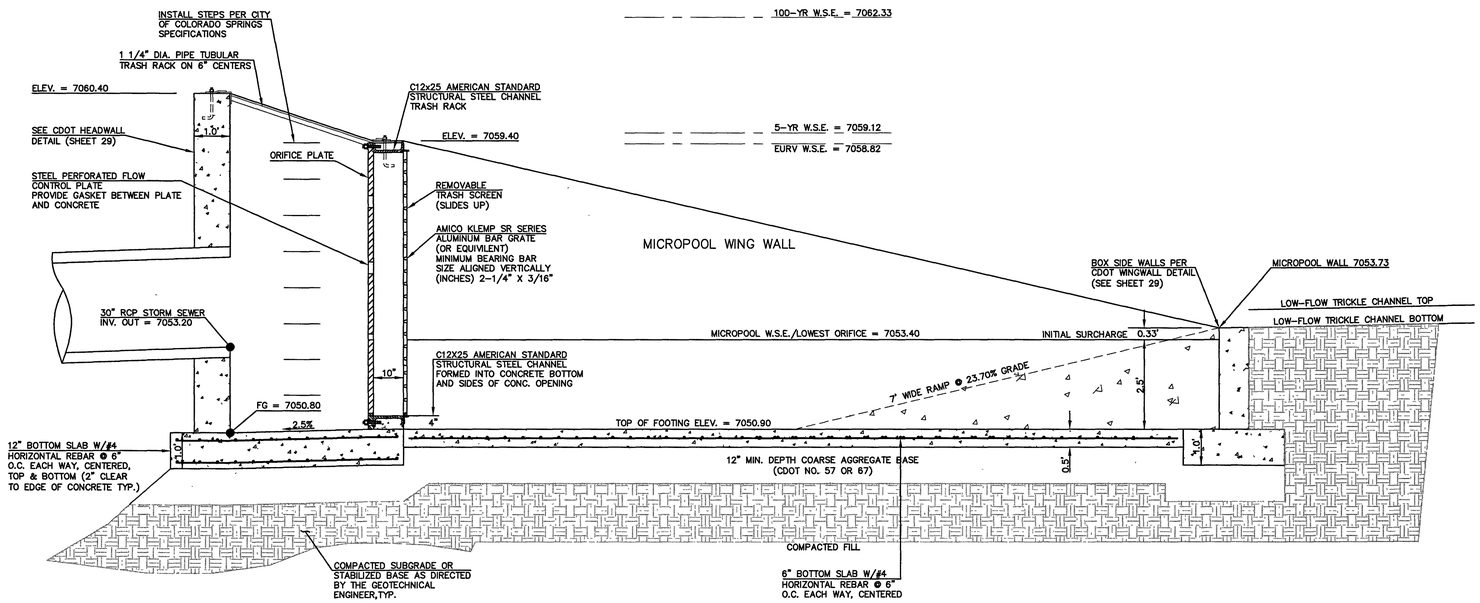


INSTALL STEPS PER CITY OF COLORADO SPRINGS SPECS.

5'X4' OUTLET BOX ORIFICE PLATE

SCALE 1" = 2'



5'X4' OUTLET BOX MICRO POOL

SCALE 1" = 2'

PCD FILE # SF-20-027

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NO.	REVISION	DATE

REVIEW:

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

COLORADO LICENSED KYLE RAYE CAMPBELL 29794

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4/6/21

CLASSIC CONSULTING

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

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

POND OUTLET BOX - PROFILE VIEW

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 2'	SHEET	25 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

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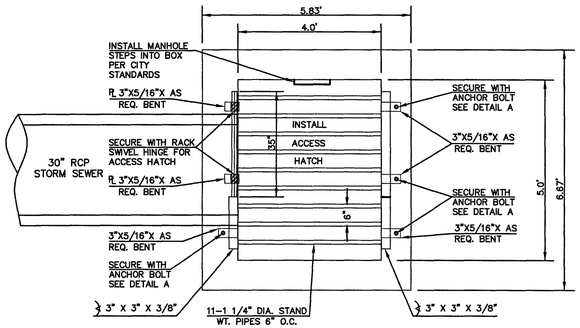
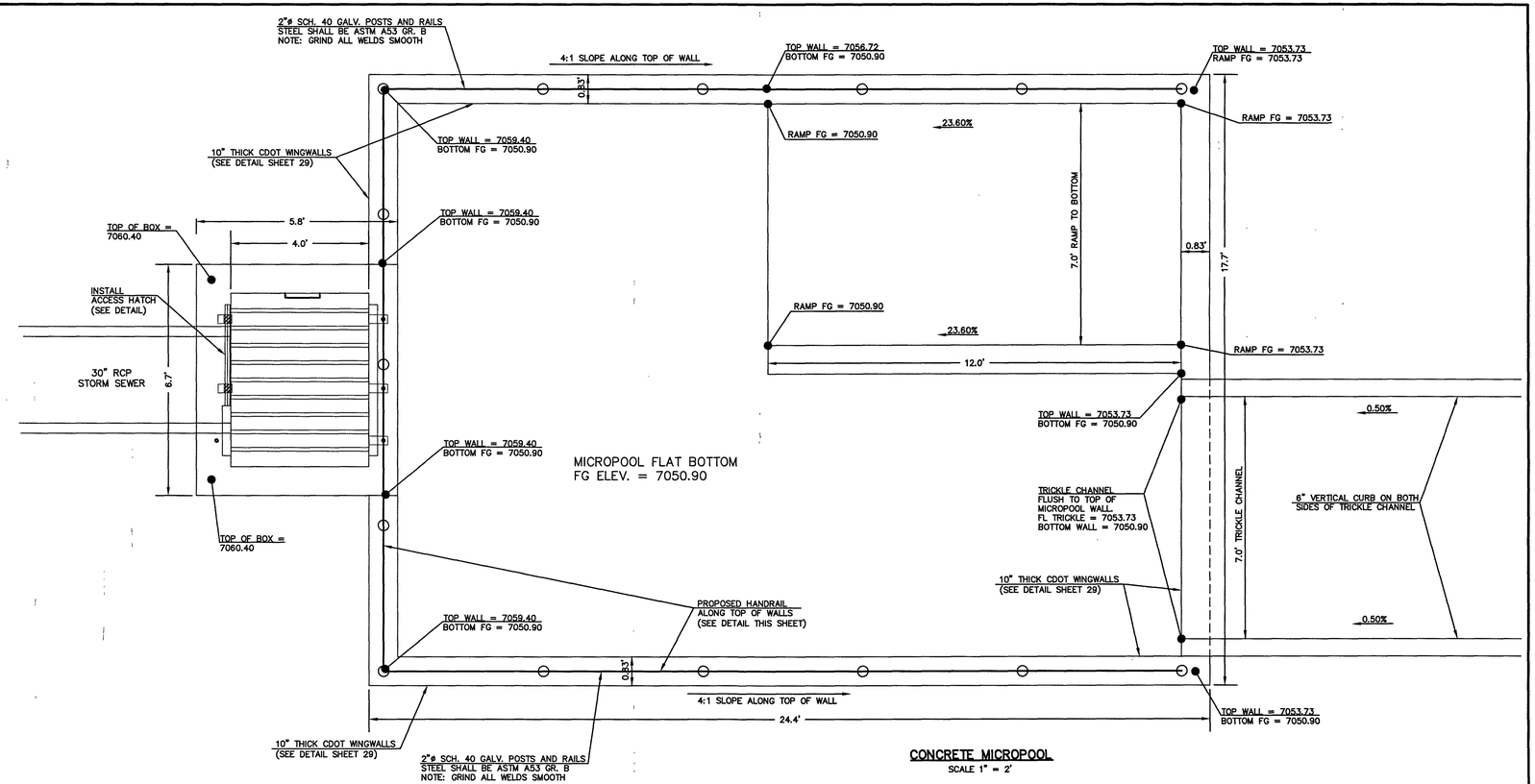


5'X4' OUTLET BOX OVERFLOW TRASH RACK

SCALE 1" = 2'



CONCRETE MICROPOOL

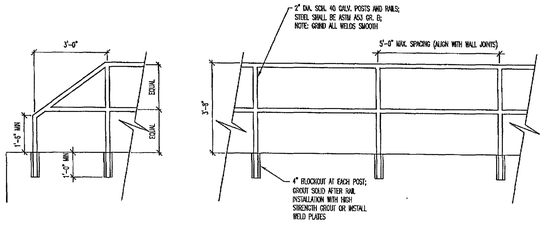
SCALE 1" = 2'

STEEL FABRICATION NOTES:

1. FABRICATED STEEL STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS.
2. THE OUTLET STRUCTURE BARGRATE IS DESIGNED FOR A VERTICAL LOAD OF 300 LBS./SQ. FT.
3. ALL STRUCTURAL STEEL SHAPES TO INCLUDE: ANGLE, PLATE, AND BAR SHALL MEET ASTM A36 SPECIFICATIONS, FY = 36 KSI MINIMUM. STRUCTURAL TUBING SHALL MEET ASTM A500 GRADE B SPECIFICATIONS, FY = 46 KSI MINIMUM. STEEL PIPE SHALL BE STANDARD WEIGHT PIPE ASTM A53 GRADE B, FY = 35 KSI MINIMUM.
4. WELDS NOT INDICATED SHALL BE 1/8" MINIMUM FILLET OR GROOVE, CONTINUOUS SO FAR AS POSSIBLE, CONSIDER VANDALISM LOADS, WELD ACCORDINGLY AT CRITICAL LOCATIONS.
5. PRIOR TO PAINTING REMOVE ALL OIL, SCALE, AND SLAG, GRIND OFF BURRS AND SHARP EDGES.
6. PAINT WITH ONE SHOP COAT OF ZINC RICH PRIMER AND TWO COATS OF ALUMINUM PAINT, AASHTO M-69

OVERFLOW TRASH RACKS:

1. ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED AND LOCKABLE ACCESS PANELS (AS SHOWN)
2. 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.
3. TRASH RACKS SHALL BE DESIGNED SUCH THAT THE DIAGONAL DIMENSION OF EACH OPENING IS SMALLER THAN THE DIAMETER OF THE OUTLET PIPE.
4. STRUCTURAL DESIGN OF THE TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.



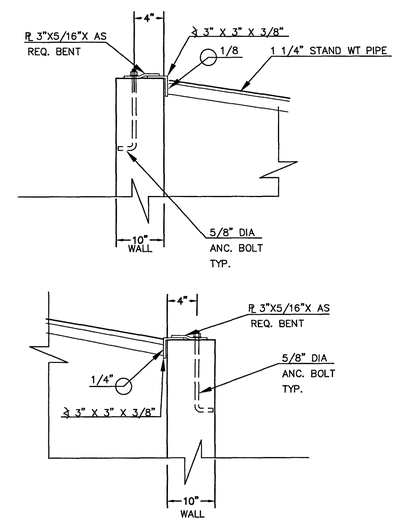
MICROPOOL RAILING

NOTES:

1. WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDDMENT.
2. DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH AASHTO STANDARDS.
3. HANDRAIL DESIGN SHALL BE COMPATIBLE WITH THE DESIGN OF THE WINGWALLS AND HEADWALLS.
4. RAILING POSTS SHALL BE SET TO NORMAL TO GRADE. RAILS SHALL RUN PARALLEL TO THE SLOPES OF TOPS OF THE WALLS.
5. ALL RAILS SHALL HAVE EXPANSION JOINTS SPACED AT 40'-0 MAX. JOINT ENDS SHALL BE FREE OF ANY SHARP EDGES OR CORNERS.
6. HANDRAIL FINISH SHALL BE ONE COAT RED METAL PRIMER AND TWO COATS ENAMEL (RUSTOLEUM OR EQUIVALENT). COLOR SHALL BE APPROVED BY ENGINEER PRIOR TO APPLICATION.

INLET/OUTLET BOX RAILING

N.T.S.



ANCHOR BOLT/GRATE DETAIL

N.T.S.

PCD FILE # SF-20-027

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NO.	REVISION	DATE

REVIEW:

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE: 4/6/21

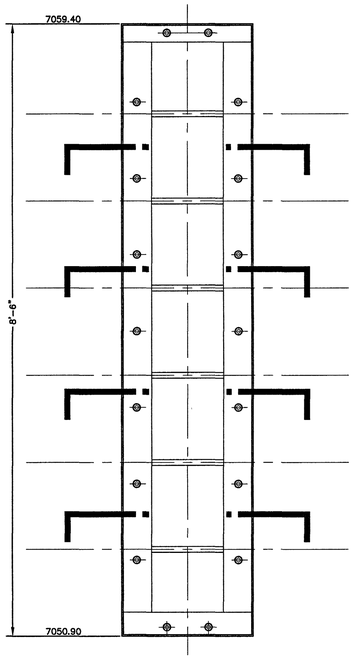
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

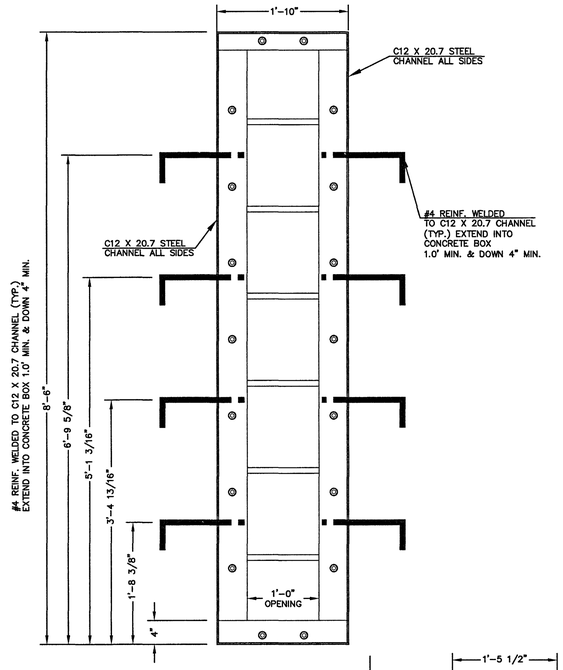
POND OUTLET BOX AND MICROPOOL DETAILS

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"= 2'	SHEET 26 OF 30	
CHECKED BY		(V) 1"= N/A	JOB NO. 1175.60	

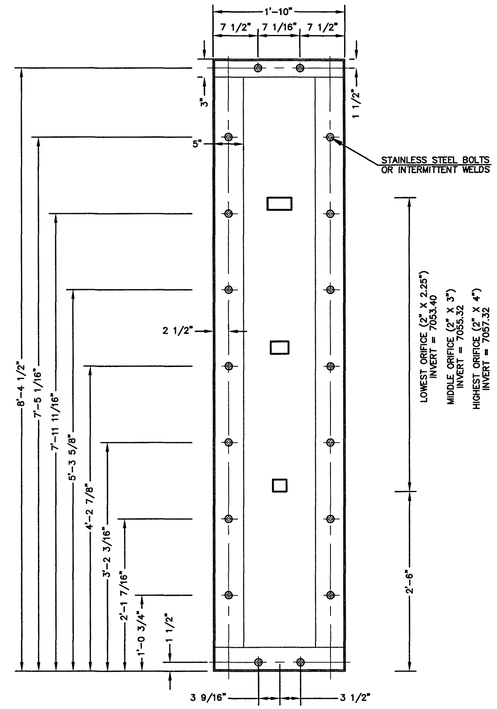
N:\117560\DRAWINGS\CONSTRUCTION\SIGNA\26-117560-STM-09-outlet box-micropool dwg, 4/5/2021 2:34:20 PM, 1:1



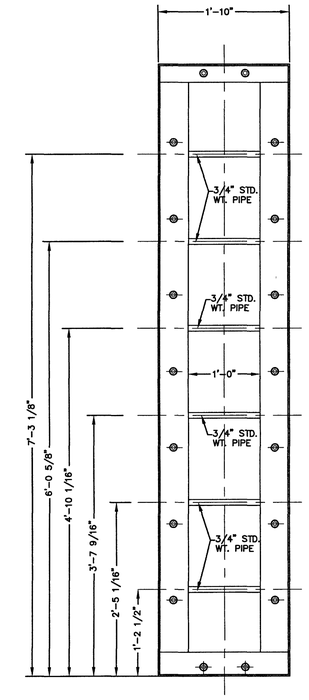
OUTLET CONTROL PLATE AND FRAME
SCALE: 1"=1'



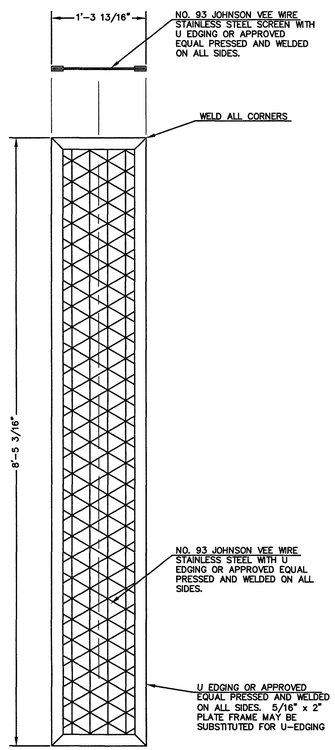
CHANNEL FRAME WITH WALL ANCHORS
SCALE: 1"=1'



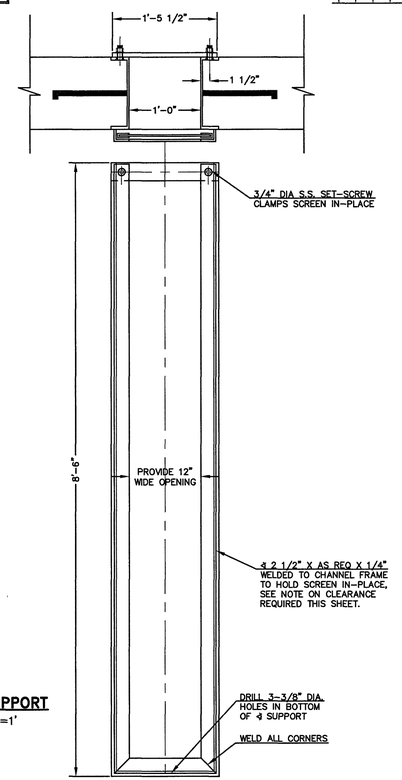
1/4" THICK ORIFICE PLATE
SCALE: 1"=1'



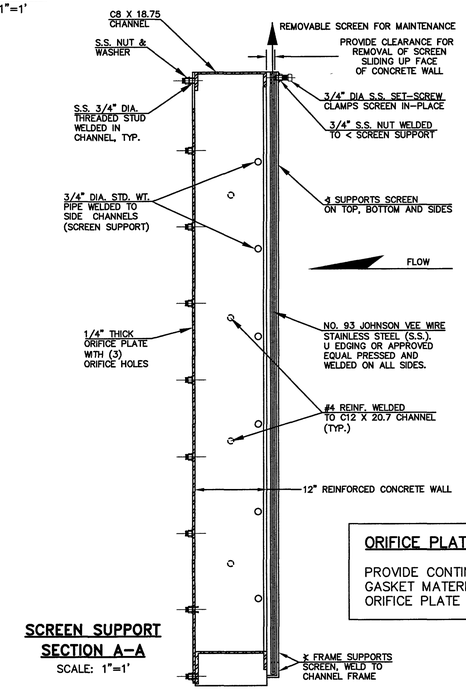
CHANNEL FRAME
SCALE: 1"=1'



TRASH SCREEN
SCALE: 1"=1'



SCREEN SUPPORT
SCALE: 1"=1'



SCREEN SUPPORT SECTION A-A
SCALE: 1"=1'

ORIFICE PLATE NOTE:

PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE

PCD FILE # SF-20-027

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

REVIEW:

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

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

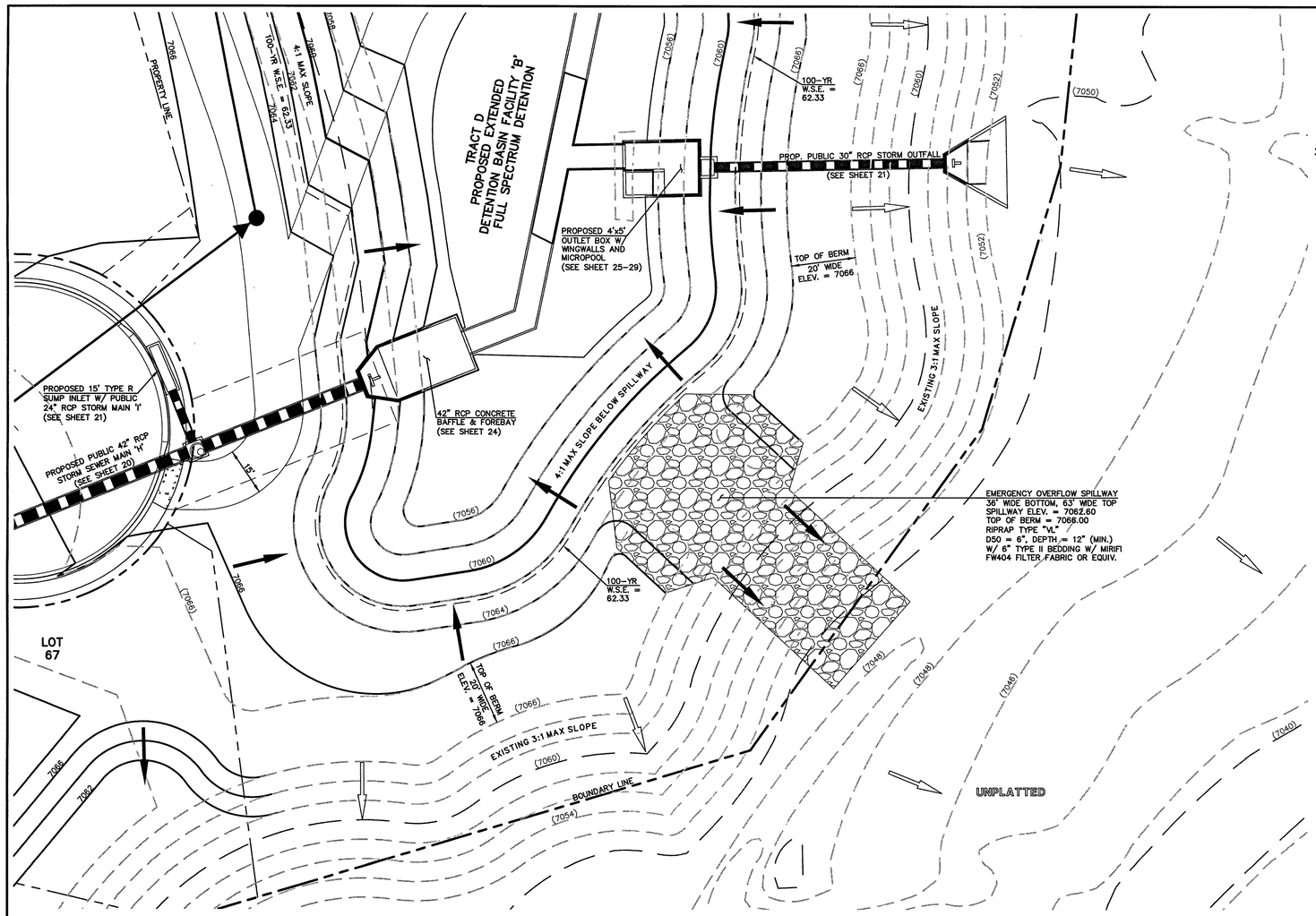
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

OUTLET BOX DETAILS

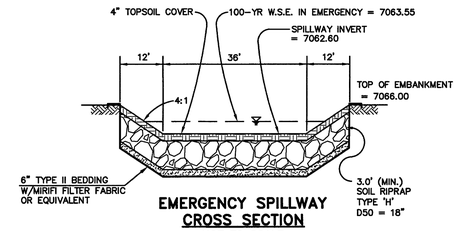
DESIGNED BY	MAL	SCALE	DATE 08/04/2020
DRAWN BY	MES	(H) 1"= 1'	SHEET 27 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO. 1175.60

N:\11760\DRAWINGS\CONSTRUCTION\STORM\27-11760-STM-10-outlet box details.dwg, 4/5/2021 2:35:08 PM, 1:1



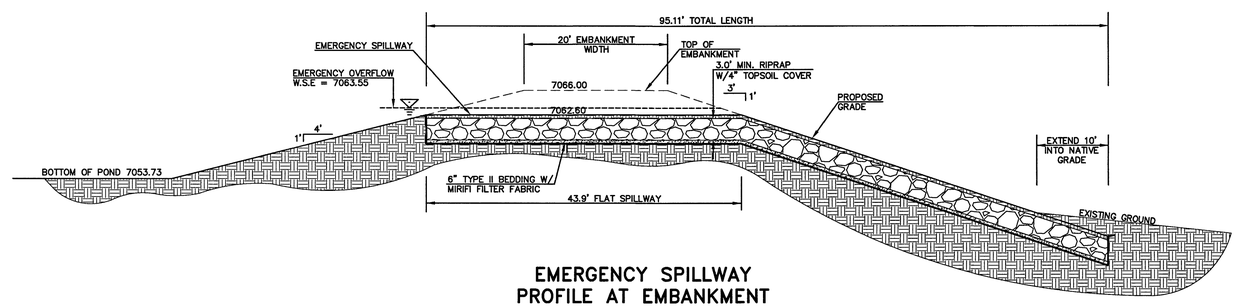
EMERGENCY SPILLWAY, EMBANKMENT, AND RUNDOWN PLAN VIEW

SCALE: 1" = 20'



EMERGENCY SPILLWAY CROSS SECTION

NOT TO SCALE



EMERGENCY SPILLWAY PROFILE AT EMBANKMENT SECTION A-A

SCALE: 1" = 10'

PCD FILE # SF-20-027

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NO.	REVISION	DATE

REVIEW:

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

COLORADO REGISTERED KYLE RAYE CAMPBELL 29794

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.21

CLASSIC CONSULTING

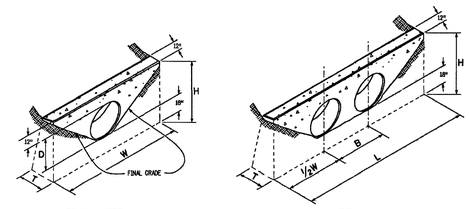
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

FOREST LAKES FILING NO. 6
CONSTRUCTION PLAN

POND SPILLWAY DETAILS

DESIGNED BY	MAL	SCALE	DATE	08/04/2020
DRAWN BY	MES	(H) 1"=VARIES	SHEET	28 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO.	1175.60

N:\1175.60\DRAWINGS\CONSTRUCTION\STORM\28-1175.60-SN-11-spillway details.dwg, 4/5/2021 2:36:18 PM, 1:1



SINGLE PIPE

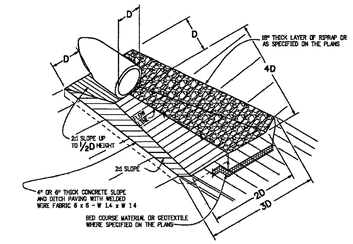
DOUBLE PIPE

CONCRETE HEADWALL INSTALLATIONS

SEE STANDARD PLAN M-601-10 FOR REINFORCING DETAILS

GENERAL NOTES

1. FOR SIZE AND LOCATION OF PIPES, SEE THE PLANS.
2. ALL CONCRETE SHALL BE CLASS B
3. FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED IN ACCORDANCE WITH SUBSECTION 601.09(b).
4. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾". IN
5. HEADWALL SHALL HAVE REINFORCING STEEL INSTALLED IN A PATTERN SIMILAR TO STANDARD PLAN M-601-10.
6. THE COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE WORK UNLESS THE STEEL QUANTITIES ARE LISTED IN THE PLANS AND ARE PAID FOR SEPARATELY.



PIPE OUTLET PAVING

MAY BE USED WITH MULTIPLE PIPES

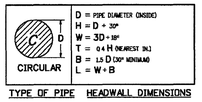
PIPE		PIPE DIAMETER (AND EQUIVALENT DIAMETER) (IN.)											
		18		24		30		36		42		48	
TYPE	MATERIAL	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
CIRCULAR	RIGID	1.0	1.3	1.5	2.0	2.0	2.7	2.8	3.8	3.6	4.5	4.6	6.0
	FLEXIBLE	1.1	1.4	1.6	2.1	2.2	3.0	3.0	4.0	3.9	5.3	5.0	6.8
ELLIPTICAL	RIGID	23 x 14		30 x 19		38 x 24		45 x 29		53 x 34		60 x 38	
		0.9	1.2	1.3	1.6	1.7	2.2	2.3	2.9	2.9	3.7	3.5	4.4
ARCH	METAL	22 x 13		29 x 18		36 x 22		43 x 27		50 x 31		58 x 36	
		0.9	1.3	1.4	1.9	1.8	2.4	2.4	3.4	3.2	4.4	3.4	5.0

CONCRETE QUANTITIES FOR ONE CONCRETE HEADWALL (CUBIC YARDS)

THICKNESS	MATERIAL	PIPE DIAMETER (IN.)					
		18	24	30	36	42	48
4"	CONCRETE	0.4	0.6	1.2			
6"	CONCRETE				2.6	3.6	4.7
18"	RIPRAP	2.0	3.5	5.4	7.6	10.7	13.9

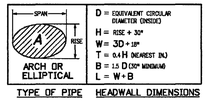
PIPE OUTLET PAVING (CUBIC YARDS)

NOTE: VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED.



D = PIPE DIAMETER (INSIDE)
H = D + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE — HEADWALL DIMENSIONS



D = EQUIVALENT CIRCULAR DIAMETER (INSIDE)
H = RISE + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE — HEADWALL DIMENSIONS

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12 Initials: DD		Date:	Comments
Last Modification Date: 07/04/12 Initials: LTA	(REV)		
FullPath:www.coloradodot.info/business/design-support	(REV)		
Drawing File Name: 601012D101.dgn	(REV)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(REV)		

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA

HEADWALLS AND PIPE OUTLET PAVING

Issued By: Project Development Branch July 4, 2012

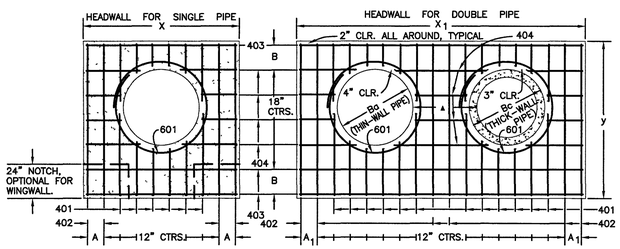
STANDARD PLAN NO.
M-601-12
Sheet No. 1 of 1

CDOT M-601-12 HEADWALL DETAIL

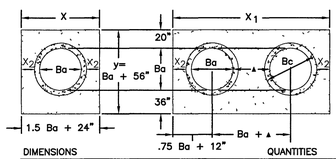
GENERAL NOTES

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾".
2. WINGWALL FOOTINGS AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
3. DIMENSIONS "W", "Ba", "RISE", "X", "Y", "B" AND ANGLES FOR WINGWALLS SHALL BE AS SHOWN ON THE PLANS.
4. REINFORCING STEEL SHALL BE GRADE 60.
5. THE MINIMUM SPLICE LENGTH FOR COMMON BAR SIZES SHALL BE:

BAR	#4	#5	#6
SPLICE LENGTH	1'-3"	1'-7"	2'-0"



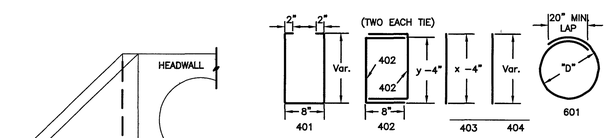
TYPICAL BAR LAYOUT FOR CONCRETE HEADWALLS



DIMENSIONS — QUANTITIES

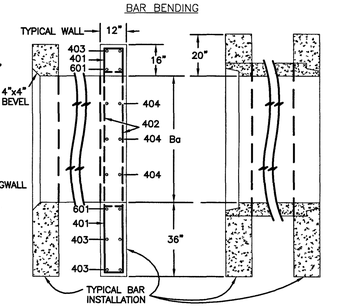
Ba in.	Bc in.	X ft.-in	A in.	X_1 ft.-in	A_1 in.	y ft.-in	B in.	X_2 in.	CONCRETE SGL. cu.yd	CONCRETE DBL. cu.yd	STEEL■ SGL. lbs.	STEEL■ DBL. lbs.
54	65	8-9	8½	15-6	7	9-2	17	20	2.12	3.55	209	364
60	72	9-6	7	17-0	10	9-8	11	21	2.35	3.99	236	414
66	79	10-3	11½	18-6	7	10-2	14	22	2.60	4.44	249	453
72	86	11-0	10	20-0	10	10-8	17	23	2.85	4.91	270	476
78	93	11-9	8½	21-3	11	11-2	11	24	3.11	5.29	306	527
84	100	12-6	7	22-6	7	11-8	14	25	3.38	5.68	333	572
90	107	13-3	11½	23-9	8½	12-2	17	26	3.66	6.08	335	593
96	114	14-0	10	25-0	10	12-8	11	27	3.94	6.48	379	649
102	121	14-9	8½	26-3	11½	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 THICK - WALL ROUND PIPE



"D" FOR
THICK-WALL PIPE, = Bc + 6"
THIN-WALL PIPE, = Ba + 8"
THIN-WALL PIPE-ARCH = SPAN + 8"
STRUCTURAL PLATE-ARCH = RISE + 8"

BAR BENDING



ENDS OF THIN-WALL PIPE — ENDS OF THICK-WALL PIPE

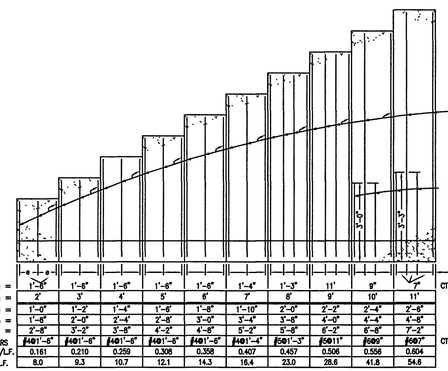
CDOT M-601-10 - HEADWALL DETAIL

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B.
2. HEADWALL SHALL BE PERPENDICULAR TO THE CULVERT ℄ UNLESS OTHERWISE SHOWN ON THE PLANS. TABULATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATIONS.
3. FOR WINGWALL DETAILS, SEE STANDARD M-601-20.
4. VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
6. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE.

▲ WHEN TWO OR MORE CONDUITS ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE 1/2 INSIDE DIAMETER OR 1/2 INSIDE SPAN OR 3 FEET APART (INCLUDING WALL THICKNESS) WHICHEVER IS LESS.

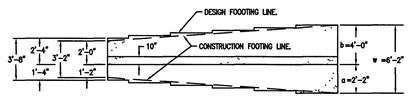
■ ADD 0.89 X (X OR X_1) (LB.) WHEN APRON IS REQUIRED.

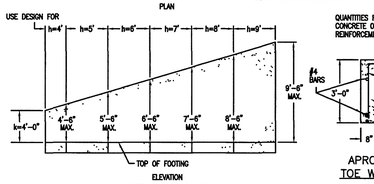


e =	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"	1'-3"	11"	9"	7"
h =	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'
a =	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"
b =	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"
w =	2'-8"	3'-2"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"	6'-2"	6'-8"	7'-2"
c & d BARS	#401'-6"	#401'-6"	#401'-6"	#401'-6"	#401'-6"	#401'-4"	#501'-3"	#5011"	#609"	#607"
* CONC.CU.YD./L.F.	0.161	0.210	0.259	0.308	0.358	0.407	0.457	0.506	0.556	0.604
* REINF. LB./L.F.	8.0	9.3	10.7	12.1	14.3	16.4	23.0	28.6	41.8	54.6

* DOES NOT INCLUDE TOE WALL QUANTITIES

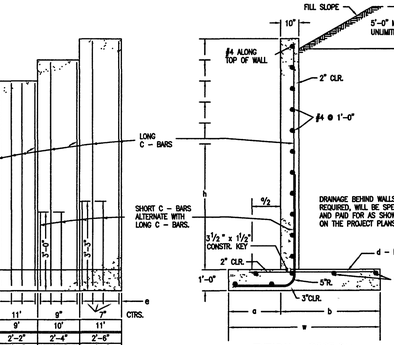
DESIGN TABLE



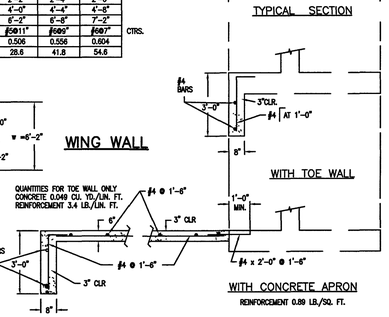


DESIGN EXAMPLE

WING WALL

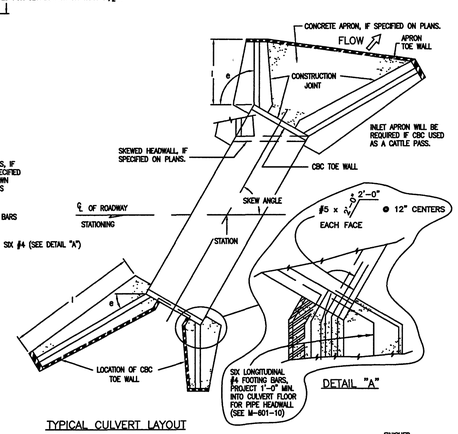


TYPICAL SECTION



APRON TOE WALL

CDOT M-601-20 WINGWALL DETAIL



TYPICAL CULVERT LAYOUT

DETAIL "A"

DESIGN DATA:
UNIT STRESSES: f_s = 24,000 PSI
f_c = 1,200 PSI
n = 9

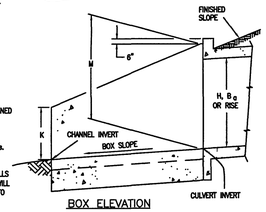
EQUIVALENT FLUID PRESSURE = 36 LBS./CU. FT.
MAXIMUM TOE PRESSURE = 1 TON/SQ. FT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE CONCRETE IS POURED.

WINGWALL AND APRON CONCRETE SHALL BE:
CONCRETE CLASS B, OR D (BOX CULVERT) FOR CBC's.
CONCRETE CLASS B, OR D (WALL) FOR PIPES.

LIVE LOAD SURCHARGE HAS NOT BEEN CONSIDERED. WALLS WITHIN ½ OF THE EDGE OF THE ROADWAY SHOULDER WILL REQUIRE A SPECIAL DESIGN IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

APRON REQUIRED AT INLET OF THE CBC, IF USED FOR CATTLE PASSAGE.



BOX ELEVATION

M = H, Ba OR RISE + (1'-4") UNLESS OTHERWISE SHOWN ON PLANS.

PCD FILE # SF-20-027

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NO.	REVISION	DATE

REVIEW:

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KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE 4.9.24

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

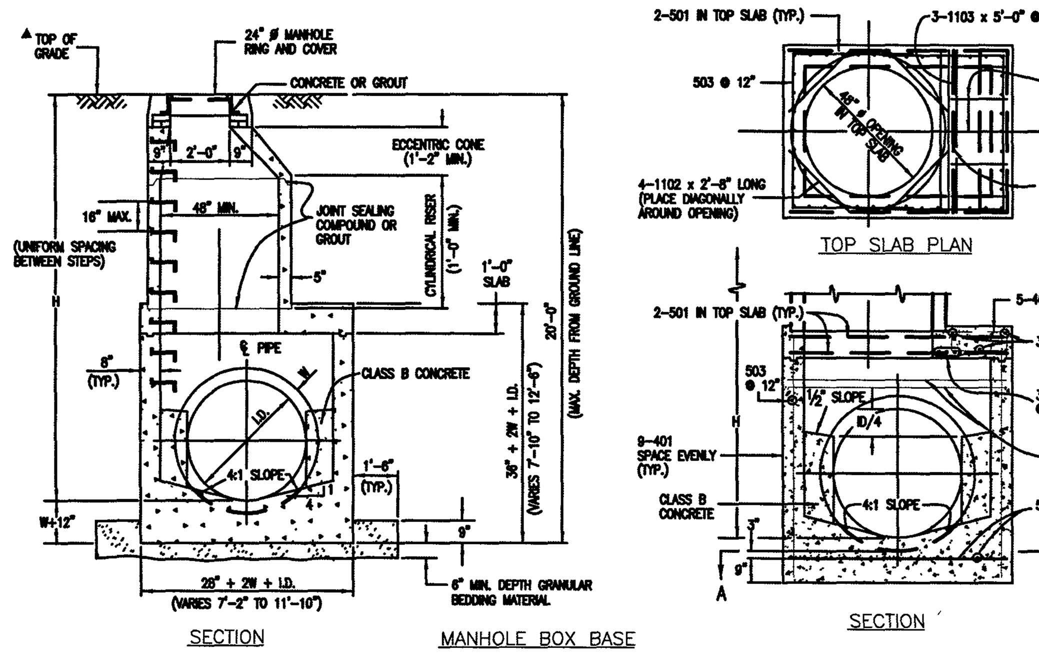
FOREST LAKES FILING NO. 6
CONSTRUCTION DRAWINGS

DETAILS SHEET

DESIGNED BY	MAL	SCALE	DATE 08/04/2020
DRAWN BY	MES	(H) 1"= N/A	SHEET 29 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO. 1175.60

N:\1175.60\DRAWINGS\CONSTRUCTION\STORM\29-1175.60-DETAILS.dwg, 4/5/2021 2:37:18 PM, 1:1

CDOT MANHOLES
STD. PLAN NO: M-604-20

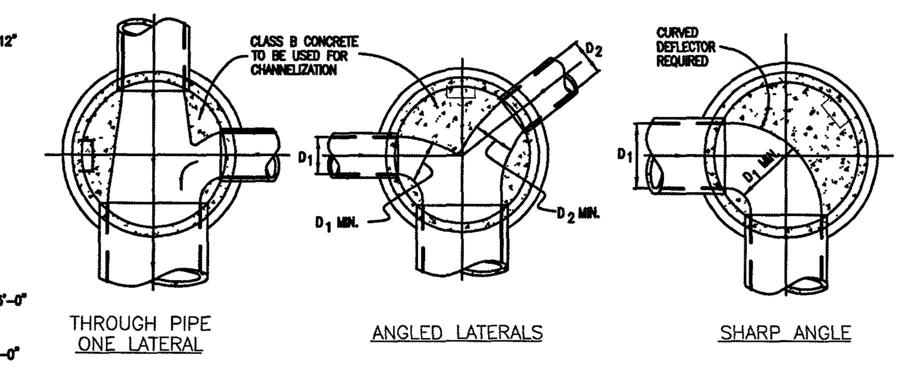


SECTION — MANHOLE BOX BASE — SECTION

QUANTITIES FOR CONCRETE MANHOLE BOX BASE

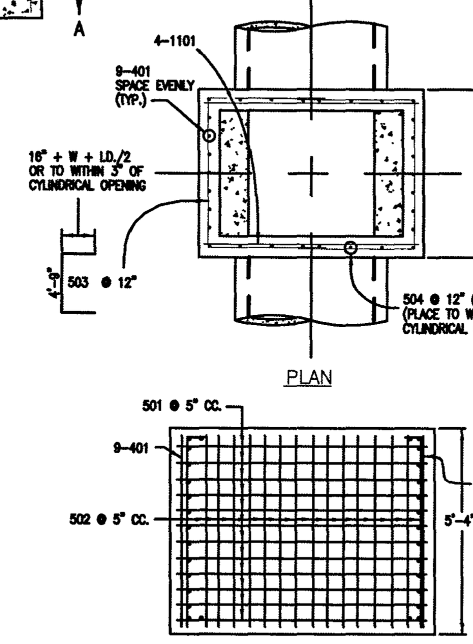
MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 54"	60"	66"	72"	84"	96"	FORMULAS
401	4	I	0.668	NO. REQ'D. / LENGTH / WEIGHT *	18 / 8'-1" / 97.2	18 / 8'-8" / 104.2	18 / 9'-3" / 111.2	18 / 9'-10" / 118.2	18 / 11'-0" / 132.3	18 / 12'-2" / 146.3	401 BAR LENGTH = 32"+2W+I.D.
402	4	III	0.668	NO. REQ'D. / LENGTH / WEIGHT *	5 / 5'-5" / 18.1	5 / 6'-0" / 20.0	5 / 6'-7" / 22.0	5 / 7'-2" / 23.9	5 / 8'-4" / 27.8	5 / 9'-6" / 31.7	402 BAR LENGTH = I.D. + 2W
501	5	I	1.043	NO. REQ'D. / LENGTH / WEIGHT *	17 / 7'-5" / 131.5	17 / 8'-0" / 141.8	17 / 8'-7" / 152.2	17 / 9'-2" / 162.5	17 / 10'-4" / 183.2	17 / 11'-6" / 203.9	501 BAR LENGTH = 24" + I.D. + 2W
502	5	I	1.043	NO. REQ'D. / LENGTH / WEIGHT *	22 / 5'-0" / 114.7	23 / 5'-0" / 119.9	25 / 5'-0" / 130.4	26 / 5'-0" / 135.8	29 / 5'-0" / 151.2	32 / 5'-0" / 166.9	502 NUMBER BARS REQ'D. = $3 + \left(\frac{24+I.D.+2W}{@\,5}+1\right)$
503	5	II	1.043	NO. REQ'D. / LENGTH / WEIGHT *	16 / 12'-10" / 214.2	16 / 13'-5" / 223.9	18 / 14'-0" / 262.8	18 / 14'-7" / 273.8	20 / 15'-9" / 328.5	24 / 16'-11" / 423.5	503 NUMBER BARS REQ'D. = $2\left(\frac{13+I.D.+2W}{@\,12}+1\right)$; BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	NO. REQ'D. / LENGTH / WEIGHT *	12 / 8'-1" / 101.2	14 / 8'-8" / 126.6	14 / 9'-3" / 135.1	16 / 9'-10" / 164.1	18 / 11'-0" / 206.5	20 / 12'-2" / 253.8	504 NUMBER BARS REQ'D. = $2\left(\frac{2W+I.D.-4}{@\,12}+1\right)$; BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	NO. REQ'D. / LENGTH / WEIGHT *	4 / 7'-2" / 152.3	4 / 7'-9" / 164.7	4 / 8'-4" / 177.1	4 / 8'-11" / 189.5	4 / 10'-1" / 214.3	4 / 11'-3" / 239.1	1101 BAR LENGTH = 21" + I.D. + 2W
1102	11	I	5.313	NO. REQ'D. / LENGTH / WEIGHT *	4 / 2'-8" / 56.7	4 / 2'-8" / 56.7	4 / 2'-8" / 56.7	4 / 2'-8" / 56.7	4 / 2'-8" / 56.7	4 / 56.7 / 2'-8"	BENDING: TYPE I — STRAIGHT
1103	11	I	5.313	NO. REQ'D. / LENGTH / WEIGHT *	3 / 5'-0" / 79.7	3 / 5'-0" / 79.7	3 / 5'-0" / 79.7	3 / 5'-0" / 79.7	3 / 5'-0" / 79.7	3 / 5'-0" / 79.7	TYPE II — 4'-9", 16"+W+I.D./2
REINFORCING STEEL TOTAL *					985.6	1,037.5	1,127.2	1,204.0	1,380.2	1,601.6	TYPE III — 12", 12", 7", I.D.+2W-38"
CONCRETE – CUBIC YARDS – TOTAL					6.0	6.6	7.3	8.0	9.5	11.1	

NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM, BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.



THROUGH PIPE ONE LATERAL — ANGLED LATERALS — SHARP ANGLE

TYPICAL CHANNELIZATION DETAILS

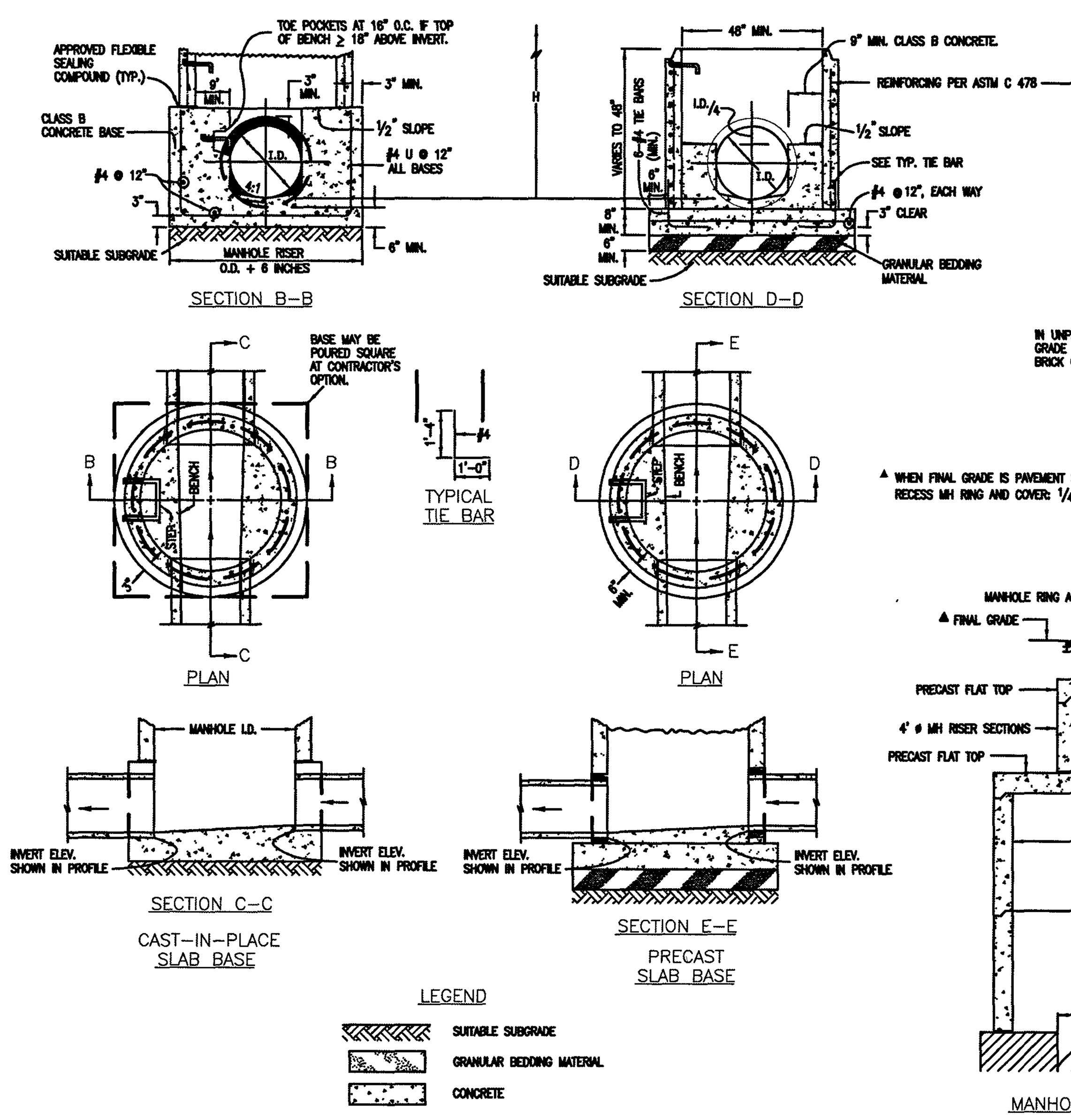


PLAN

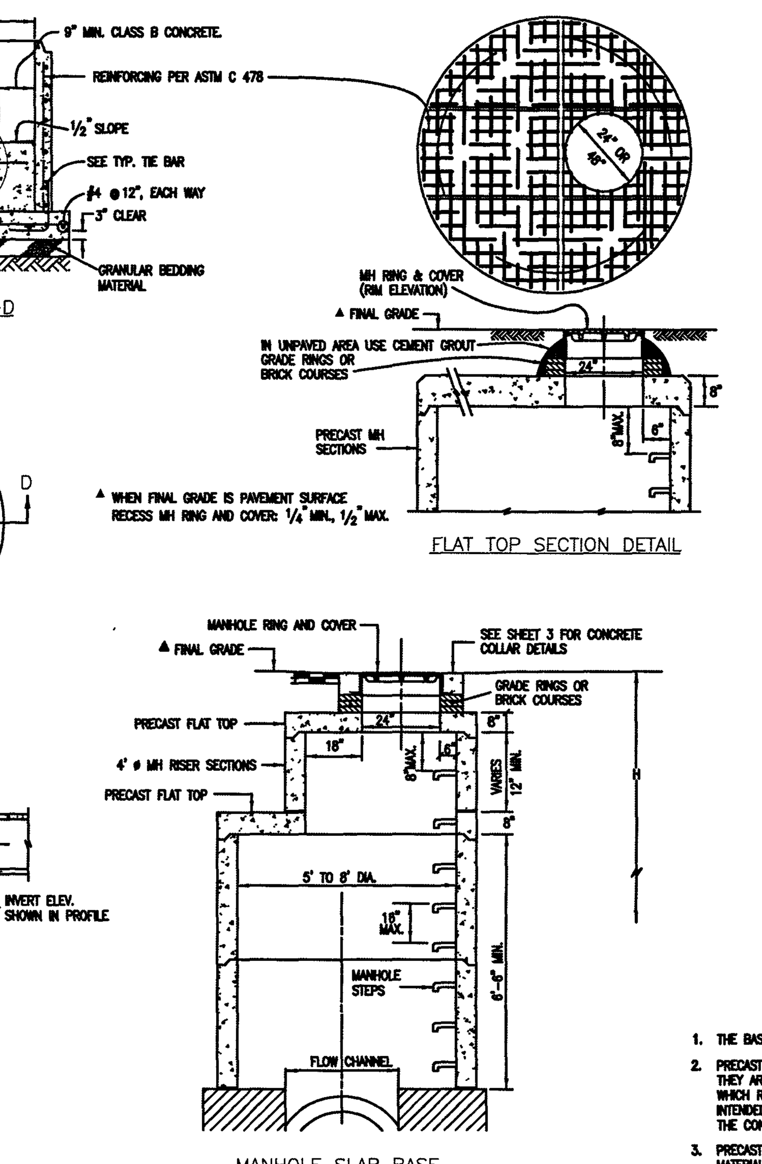
SECTION A–A
(STEEL IN BOTTOM OF BASE)

GENERAL NOTES

1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
3. THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF CONDUIT OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
6. CAST-IN-PLACE MANHOLES SHALL BE CLASS B CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3 FT.–6 IN. AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
8. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT ℄ OF WALL. ALL BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
9. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONNECTED BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
10. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
11. STUB-OUTS SHALL EXTEND 2 FT. MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
12. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL SANITARY SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
13. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.

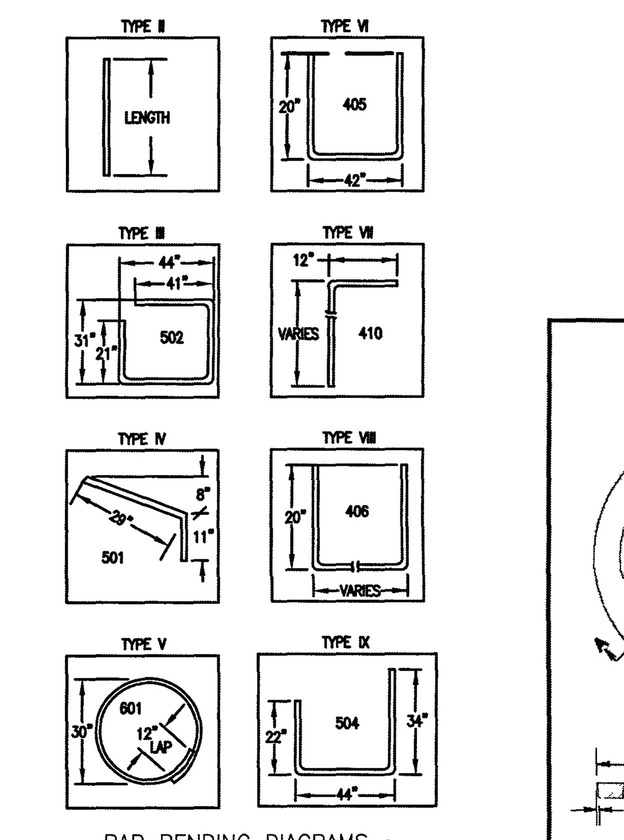


SECTION B–B — SECTION D–D — PLAN — PLAN — SECTION C–C — SECTION E–E



FLAT TOP SECTION DETAIL

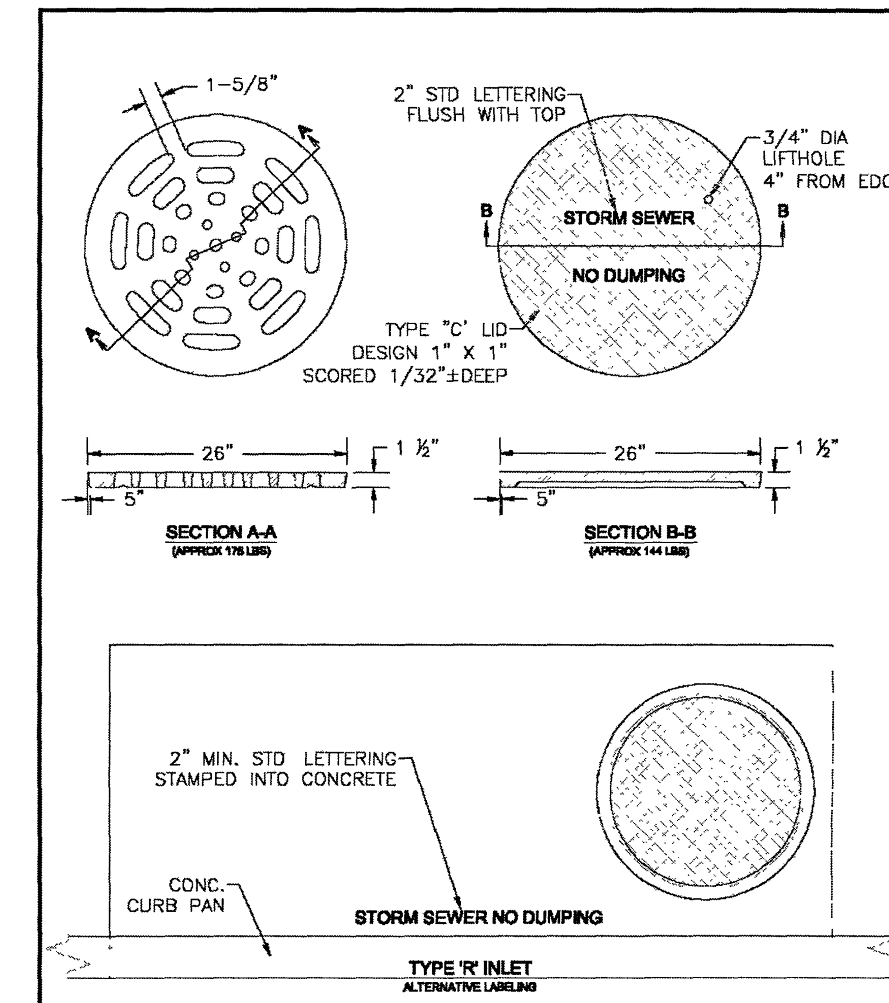
MANHOLE SLAB BASE



BAR BENDING DIAGRAMS ~ (Dimensions are Out–to–Out of bar)

PRECAST MANHOLE BASES:

1. THE BASE SLAB SHALL BE POURED MONOLITHICALLY WITH BOTTOM RISER SECTION.
2. PRECAST MANHOLE BASES SHALL FIT THE CONDITIONS AND LOCATIONS FOR WHICH THEY ARE INTENDED WITHOUT ANY FIELD MODIFICATIONS. ANY MANHOLE BASE WHICH REQUIRES FIELD CUTTING OR MODIFICATION IN ORDER TO FIT THE LOCATIONS INTENDED WILL BE REJECTED BY THE ENGINEER AND REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE DEPARTMENT.
3. PRECAST MANHOLE BASES SHALL BE BEDDED ON AN APPROVED GRANULAR BEDDING MATERIAL AS SHOWN ABOVE.



SCALE: NOT TO SCALE

9/16/10 DATE APPROVED: André P. Brackin DEPARTMENT OF TRANSPORTATION	Storm Sewer Manhole Details Standard Drawing	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
	REVISION DATE: 9/16/10	FILE NAME: SD_3-5

CDOT TYPE R INLET
STD. PLAN NO: M-604-12

TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

MARK	DIA IN.	O.C. SPACING	TYPE	ALL INLETS L= → 5' NO.REQ'D.	LENGTH	INLETS. H ≤ 5' 10' NO.REQ'D.	LENGTH	15' NO.REQ'D.	LENGTH	INLETS, H > 5' 10' NO.REQ'D.	LENGTH	15' NO.REQ'D.	LENGTH
401		11"	II	15	*	21	*	26	*	11	*	11	*
402		11"	II	7	*	13	*	18	*	7	*	7	*
403		9"	II	*	4'-10"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-10"
405		6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10
406		6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	1/2"	9"	II	*	5'-10"	*	10'-10	*	15'-10"	*	5'-10"	*	5'-10"
408		12"	II	3	6'-10"	3	11'-0"	3	16'-0"	3	11'-0"	3	16'-0"
409		8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410		11"	VII							3	*	3	*
411		11"	II							3	5'-2"	3	10'-2"
412		11"	II							3	2'-9"	3	2'-9"
413		9"	II							7	10'-10"	7	15'-10"
501		5 1/2"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5/8"	5 1/2"	III							11	11'-5"	17	11'-5"
503		5 1/2"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504		5 1/2"	IX									5	8'-4"
	3/4"												
601		2 1/2"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
#8[8.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2BARS,1ROD	—	4BARS,3RODS	—	8BARS,5RODS	—	4BARS,3RODS	—	8BARS,5RODS	—

* VARIABLE, REFER TO TABLE TWO.
# INCLUDE 18" NO. 4 BARS (SEE CHANNEL LAYOUT DETAIL).
▼ SEE CURB FACE ASSEMBLY ON SHEET 1 AND CHANNEL LAYOUT DETAILS ON THIS SHEET.

REGULAR INLETS (INLETS H ≤ 5') — DROP BOX INLETS (INLETS H > 5')

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

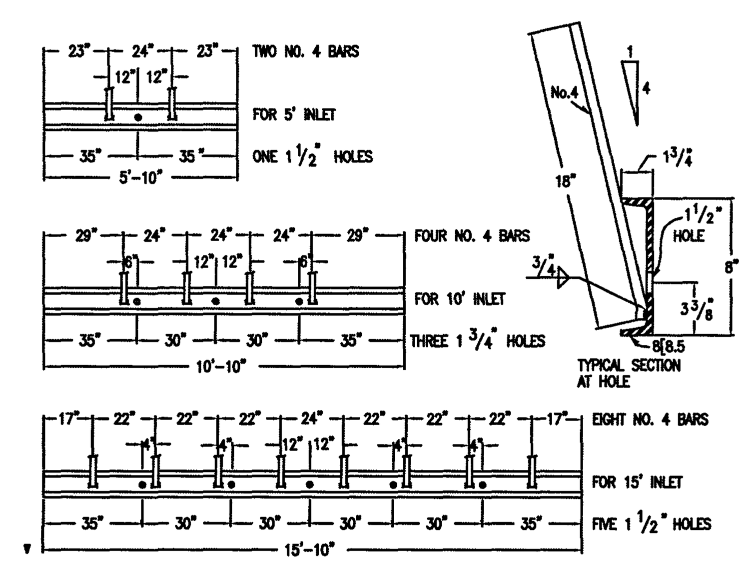
'H'	LENGTH 401	402	410	NO. REQ'D. REGULAR 403	407	NO. REQ'D. DROP BOX 403	407	L=5' CU.YD.CONC.	LB.STEEL	L=10' CU.YD.CONC.	LB.STEEL	L=15' CU.YD.CONC.	LB.STEEL
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTE: FOR L=5', L=10' AND L=15' REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE OF THE HEAVY BLACK LINE. DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE OF THE HEAVY BLACK LINE

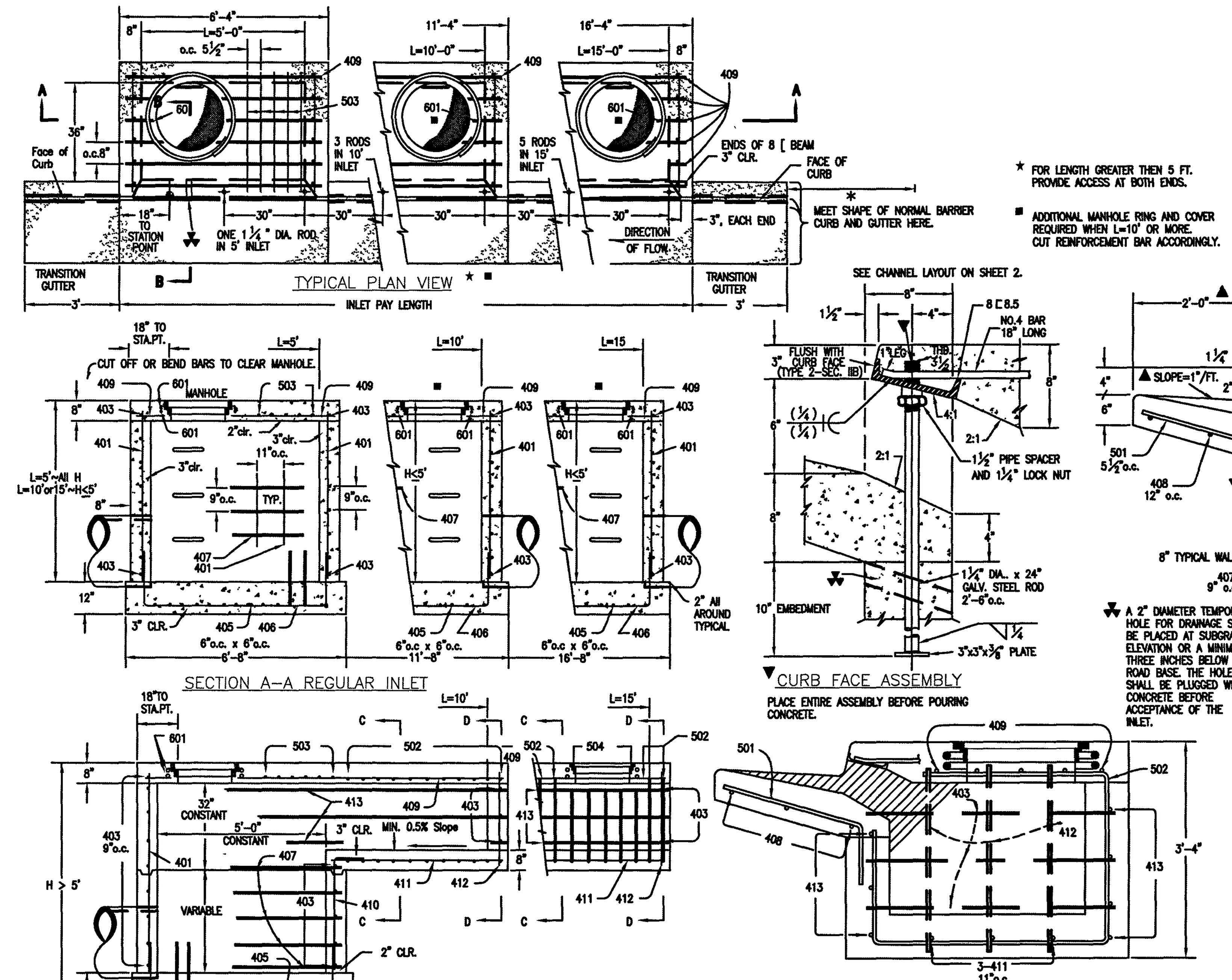
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL.

GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS B.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
3. INLET STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 IN. CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
6. REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO 712.06.
9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL CONFORM TO THE REQUIREMENTS OF 712.06.



CHANNEL LAYOUT DETAILS



TYPICAL PLAN VIEW ★ ■

SECTION A–A REGULAR INLET

CURB FACE ASSEMBLY

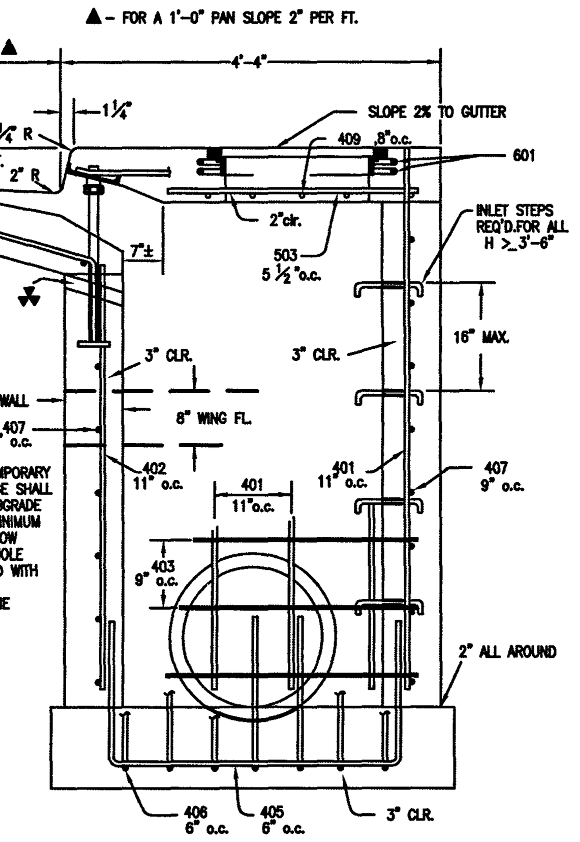
SECTION A–A INLET WITH DROP BOX~H>5'

SECTIONS C–C & D–D
(DOTTED BARS ARE IN SECTION D–D)

★ FOR LENGTH GREATER THEN 5 FT. PROVIDE ACCESS AT BOTH ENDS.

■ ADDITIONAL MANHOLE RING AND COVER REQUIRED WHEN L=10' OR MORE. CUT REINFORCEMENT BAR ACCORDINGLY.

▲ – FOR A 1'-0" PAN SLOPE 2" PER FT.



SECTION B–B
TYPICAL END VIEW

A 2" DIAMETER TEMPORARY HOLE FOR DRAINAGE SHALL BE PLACED AT SUBGRADE ELEVATION OR A MINIMUM THREE INCHES BELOW ROAD BASE. THE HOLE SHALL BE PLUGGED WITH CONCRETE BEFORE ACCEPTANCE OF THE INLET.

NOTE: MANHOLE RING & COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.

PCD FILE # SF-20-027

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

REVIEW:

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

COLORADO LICENSED KYLE RAY CAMPBELL 29794

KYLE R. CAMPBELL, COLORADO P.E. #29794 — 4.9.21 DATE

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

FOREST LAKES FILING NO. 6
CONSTRUCTION DRAWINGS

DETAILS SHEET

DESIGNED BY	MAL	SCALE	DATE 08/04/2020
DRAWN BY	MES	(H) 1"= N/A	SHEET 30 OF 30
CHECKED BY		(V) 1"= N/A	JOB NO. 1175.60

\117560\DRAWINGS\CONSTRUCTION\STORM\30-117560-DETAILS.dwg, 4/5/2021 2:38:07 PM, 1:1