VOLLMER RV STORAGE

SECTION 34, TOWNSHIP 12 SOUTH AND RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF EL PASO
STATE OF COLORADO

GRADING AND EROSION CONTROL PLAN

EPC STORMWATER REVIEW COMMENTS IN ORANGE BOXES WITH BLACK TEXT

JR response in green boxes with black text

Know what's below. Call before you dig.

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

GRADING AND EROSION CONTROL STANDARD 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.

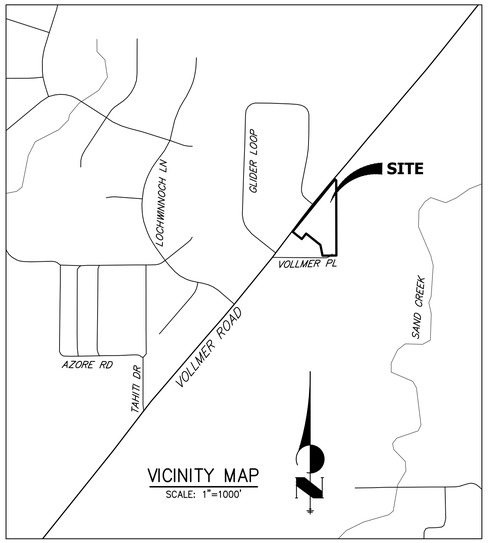
26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

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.

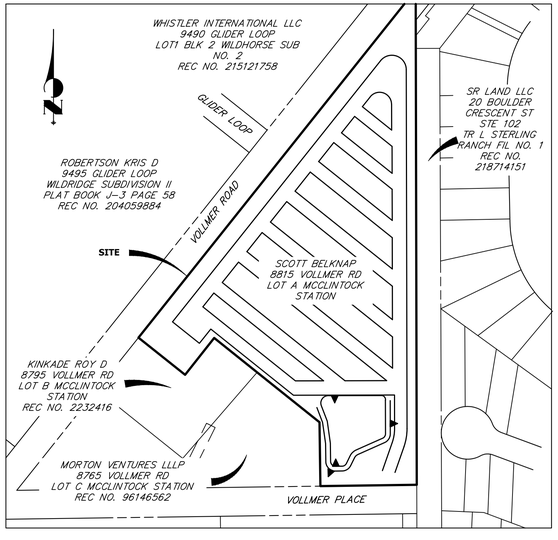
28. A SOILS AND GEOLOGY HAZARD LETTER HAS BEEN PREPARED BY JR ENGINEERING AND SHALL BE CONSIDERED A PART OF THESES PLANS.

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



VICINITY MAP
SCALE: 1"=1000'



SITE MAP
SCALE: 1"=150'

CONTACTS:

OWNER/DEVELOPER	ATTN: SCOTT BELKNAP 3603 FIRST LIGHT DRIVE CASTLE ROCK, CO 80109 P~(719) 322-3556
ENGINEER/SURVEYOR	JR ENGINEERING LLC ATTN: RYAN E. BURNS 5475 TECH CENTER DRIVE, SUITE 235 COLORADO SPRINGS, CO 80919 P~(303) 267-6178
ELECTRIC DEPARTMENT	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMAN ROAD FALCON, CO 80831 (719) 495-2283

SHEET INDEX:

PPR-22-045

EL PASO COUNTY STATEMENT

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

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

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JOSHUA PALMER, P.E. — DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENT OF THE GRADING AND EROSION CONTROL PLANS.

SCOTT BELKNAP — DATE

3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

COLORADO REGISTERED RYAN E. BURNS 0054412 PROFESSIONAL ENGINEER

RYAN E. BURNS, P.E. — DATE
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

PREPARED FOR
SCOTT BELKNAP
3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109
(719)-322-3556
SCOTT.BELKNAP@YAHOO.COM

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	N/A
V-SCALE	N/A
DATE	05/15/23
DESIGNED BY	PAL
DRAWN BY	PAL
CHECKED BY	

VOLLMER RV STORAGE
COVER SHEET

SHEET 1 OF 13

JOB NO. 25251.00

LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE	A	A
CENTERLINE		
CITY LIMITS		
WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
MASONRY FENCE		
GUARDRAIL		
CONC. BARRIER		
CABLE TV	TV	TV
ELECTRIC	E	E
FIBER OPTIC	FO	FO
GAS MAIN	G	G
IRRIGATION MAIN	IRR	IRR
OIL/PETRO. MAIN	O	O
OVERHEAD UTILITY	OHU	OHU
SANITARY SEWER	S	
STORM DRAIN		
TELEPHONE	T	T
WATER MAIN	W	
RAW WATER LINE	RWL	RWL
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)	6100	6100
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		C/F
SILT FENCE	SF	SF
100 YEAR FLOODPLAIN	100YR	100YR
500 YEAR FLOODPLAIN	500YR	500YR
FLOODWAY	FLDWY	FLDWY
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		

LANDSCAPE LEGEND

	EXISTING	PROPOSED
TREE – CONIFEROUS		
TREE – DECIDUOUS		
SHRUB/BUSH		
SHRUBS AND BUSHES		
IRRIGATION BOX		
IRRIGATION SPRINKLER		
IRRIGATION VALVE		
BOLLARD		
FLAGPOLE		FP

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

UTILITIES LEGEND

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

MONUMENTATION LEGEND

ALUMINUM CAP – FOUND	AC
BRASS CAP – FOUND	BC
BENCHMARK – FOUND	
CROSS – FOUND	
MONUMENT – SET	
MONUMENT – FOUND (DEFAULT)	
MONUMENT – FOUND (ALTERNATE 1)	
MONUMENT – FOUND (ALTERNATE 2)	
MONUMENT – FOUND (ALTERNATE 3)	
MONUMENT – FOUND (ALTERNATE 4)	
MONUMENT – FOUND (ALTERNATE 5)	
MONUMENT – FOUND (ALTERNATE 6)	
MONUMENT – FOUND (ALTERNATE 7)	
NAIL & WASHER – FOUND	NAIL & WASHER
PANEL – FOUND	
PK NAIL – FOUND	PK NAIL
ROW MONUMENT – FOUND	
ROW MARKER – FOUND	
SECTION CORNER – FOUND	
SECTION CORNER – SET	
QUARTER–SECTION CORNER – FOUND	
QUARTER–SECTION CORNER – SET	
SECTION CENTER – FOUND	
SECTION CENTER – FOUND	
CONTROL/TRAVERSE POINT – SET	

STORM WATER MANAGEMENT

	KEY	SYMBOL
CHECK DAM	CD	
CONSTRUCTION ROAD STABILIZATION	CRS	
CURB SOCK INLET PROTECTION	CS	
CONCRETE WASHOUT AREA	CWA	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
DIVERSION CHANNEL, TEMPORARY	DV	
DEWATERING	DW	
EROSION CONTROL BLANKET	ECB	
INLET FILTER	IF	
INLET PROTECTION	IP	
MULCHING	MU	
OUTLET PROTECTION	OP	
PAVED FLUME	PF	
PERMENENT SEEDING	PS	
REINFORCED CONCRETE DAM	RCD	
ROUGH CUT STREET CONTROL	RCS	
SEDIMENT BASIN	SB	
SEDIMENT CONTROL LOG	SCL	
SILT FENCE	SF	
SURFACE ROUGHENING	SR	
STABILIZED STAGING AREA	SSA	
SEDIMENT TRAP	ST	
STRAW BALE BARRIER	STB	
TERRACING	TER	
TEMPORARY SEEDING	TS	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE	TSC C	
TEMPORARY STREAM CROSSING FORD TYPE	TSC F	
TEMPORARY SLOPE DRAIN	TSD	
VEHICLE TRACKING CONTROL	VTC	
VEHICLE TRACKING CONTROL WITH WASH RACK	WR	

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

COLORADO REGISTERED RYAN E. BURNS PROFESSIONAL ENGINEER 0054412

RYAN E. BURNS, P.E. DATE
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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

PREPARED FOR
SCOTT BELKNAP
3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109
(719)-322-3556
SCOTT.BELKNAP@YAHOO.COM

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A Westrian Company
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Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	N/A
V–SCALE	N/A
DATE	05/15/23
DESIGNED BY	PAL
DRAWN BY	PAL
CHECKED BY	

VOLLMER RV STORAGE

LEGEND

SHEET 2 OF 13

JOB NO. 25251.00

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

Know what's below. Call before you dig.

WILDRIDGE SUBDIVISION II PLAT BOOK J-3 PAGE 58 LOT 1, BLOCK 2

WILDRIDGE SUBDIVISION II PLAT BOOK J-3 PAGE 58 LOT 1, BLOCK 1

EXISTING SWALE

EX. GAS MAIN (TYP.)

GLIDER LOOP

EX. 24" RCP CULVERT

PROPOSED SWALE SECTION A-A SEE DETAIL THIS SHEET

PROPOSED OFFSITE GRADING BETWEEN SITE BOUNDARY AND EX EDGE OF ASPHALT

VOLLMER ROAD (60.00' R.O.W. RURAL LOCAL ROADWAY)

EX. TELEPHONE LINE (TYP.)

RECYCLED ASPHALT PARKING (TYP.)

SITE BOUNDARY (TYP.)

15.00' LANDSCAPE SETBACK

PROPOSED 18" RCP (PUBLIC) ACCESS CULVERT (SEE SHEET 5)

DRIVEWAY GRADING TO BE COORDINATED W/ HOME OWNER

PROPOSED OFFSITE GRADING BETWEEN VOLLMER R.O.W. AND EX EDGE OF ASPHALT

2.46 AC OF PERMANENT SEEDING & MULCHING (SITE TOTAL)

SILT FENCE (J- HOOK INSTALLATION MAY BE REQUIRED IN SOME AREAS, INSTALL PER DETAIL)

TRACT L

HOMESTEAD AT STERLING RANCH FILING NO. 1 REC. NO. 2197142?9

20.00' PUE

EXISTING SWALE

30.00' RECYCLED ASPHALT DRIVE AISLE (TYP)

MC CLINTOCK STATION PLAT BOOK H-3 PAGE 9 LOT A

2011 LF OF SILT FENCE (SITE TOTAL)

MC CLINTOCK STATION PLAT BOOK H-3 PAGE 9 LOT C

PR. RCP STORM SEWER (SEE SHEET 4-5)

TEMPORARY SEDIMENT BASIN TO BE CONVERTED TO PROPOSED FULL-SPECTRUM EDB POND SEE DETAILS SHEETS 8-11

EX. 8" PVC WATER MAIN (PUBLIC)

EX. 8" PVC SANITARY MAIN (PUBLIC)

PROPOSED 18" RCP (PUBLIC) ACCESS CULVERT (SEE SHEET 5)

PROPOSED SWALE SECTION C-C SEE DETAIL THIS SHEET

MC CLINTOCK STATION PLAT BOOK H-3 PAGE 9 LOT B

UTILITY EASEMENT BK 2274, PG 905

10.00' PUE

PROPOSED OFFSITE GRADING BETWEEN SITE BOUNDARY AND EX EDGE OF DIRT ROAD

PROPOSED SWALE SECTION B-B SEE DETAIL THIS SHEET

PROPOSED OFFSITE GRADING BETWEEN SITE BOUNDARY AND EX EDGE OF DIRT ROAD

It is the opinion of the engineer that Vollmer Place meets the intentions of the rural gravel local roadway cross-section. While there are no well defined ditches present along the road, this is consistent with the Drainage reports in the area. There are no noted negative impacts to the roadway in its current condition. Therefore it is believed to be in well working and operating condition, acceptable for the existing and proposed business access as shown in the Traffic Impact Study preformed for this site.

Roadway will need to meet ECM Standard SD_2-10 for Rural Gravel Local Roadway.

Addressed: See updated note 3

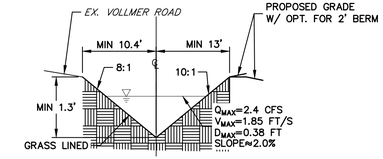
Work in ROW permit will be required to any work done within County ROW.

LEGEND

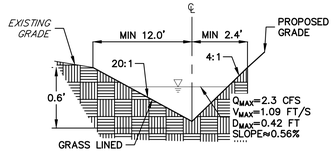
SILT FENCE	SF	PROPOSED FLOW PATH	
CUT/FILL BOUNDARY	C/F	EXISTING FLOW PATH	
STABILIZED STAGING AREA	SSA	LIMITS OF CONSTRUCTION/ DISTURBANCE	LOD
VEHICLE TRACKING CONTROL	VTC	PERMANENT SEEDING AND MULCHING	SM
CONCRETE WASHOUT AREA	CWA	TEMPORARY SEDIMENT BASIN	TSB
OUTLET PROTECTION	OP	TEMPORARY CHECK DAM	CD
INLET PROTECTION	IP		

GEC NOTES:

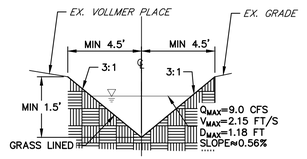
1. THE EXISTING VEGETATION IS NATIVE MEADOW GRASSES AND COVERS APPROXIMATELY 60% OF THE SITE.
2. NO BATCH PLANTS WILL BE UTILIZED ON THIS SITE.
3. OFFSITE GRADING IS REQUIRED FOR THE DEVELOPMENT OF THIS SITE IN ORDER TO SAFELY ROUTE PROPOSED FLOWS. GRADING HAS BEEN LIMITED TO THE VOLLMER ROAD R.O.W. AND VOLLMER PLACE R.O.W.
4. THE INITIAL BMPS INCLUDE: SF, VTC, SSA, CD, AND TSB
   THE INTERIM BMPS INCLUDE: OP AND IP
   THE FINAL PHASE BMPS INCLUDE: SM AND REMOVAL OF TEMPORARY BMPS ONCE FINAL STABILIZATION IS COMPLETE
5. REFER TO LANDSCAPE PLANS FOR FINAL STABILIZATION.



SWALE SECTION A-A
TYPICAL DETAIL
SCALE: NTS



SWALE SECTION B-B
TYPICAL DETAIL
SCALE: NTS



SWALE SECTION C-C
TYPICAL DETAIL
SCALE: NTS

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COLORADO REGISTERED RYAN E. BURNS 0054412 PROFESSIONAL ENGINEER

RYAN E. BURNS, P.E. DATE
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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No.	REVISION	BY	DATE

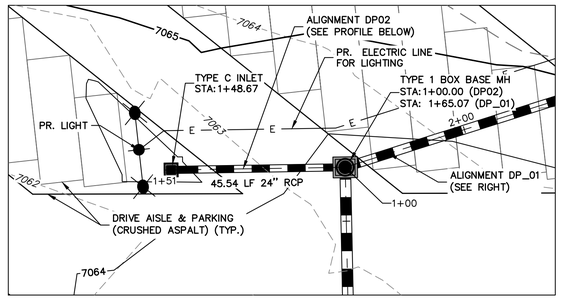
H-SCALE	1"=40'
V-SCALE	N/A
DATE	05/15/23
DESIGNED BY	APL
DRAWN BY	PAL
CHECKED BY	

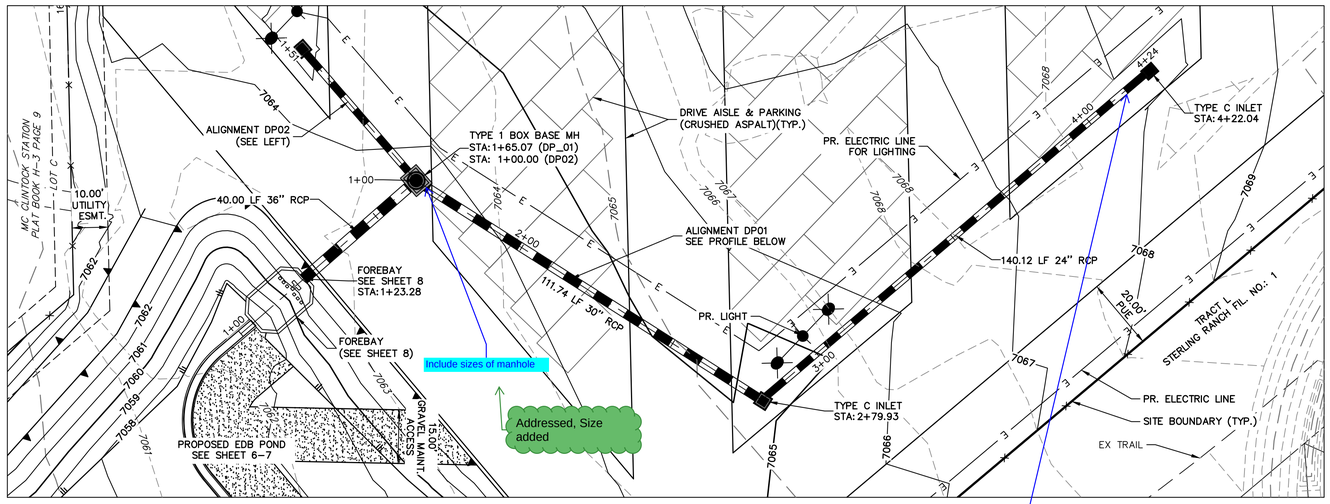
VOLLMER RV STORAGE

EROSION CONTROL PLAN

SHEET 3 OF 13

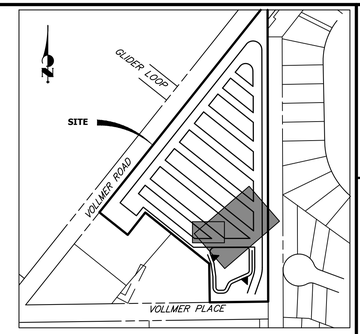
JOB NO. 25251.00





Include sizes of manhole

Addressed, Size added



KEY MAP

SCALE: NTS

DP02 PROFILE
STA 1+00.00 TO 1+50.63

Addressed, label added

Provide a label for structure so know what it corresponds with in other profile

DP_01 PROFILE
STA 1+00.00 TO 4+24.00

Grading plan does not indicate an elevation 7068 on this side of area inlet

Addressed, Grading revised to show 7068 contour around inlet

20 10 0 20 40

HORIZONTAL
ORIGINAL SCALE: 1" = 20'

VERTICAL
ORIGINAL SCALE: 1" = 2'

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STORM SEWER NOTES

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

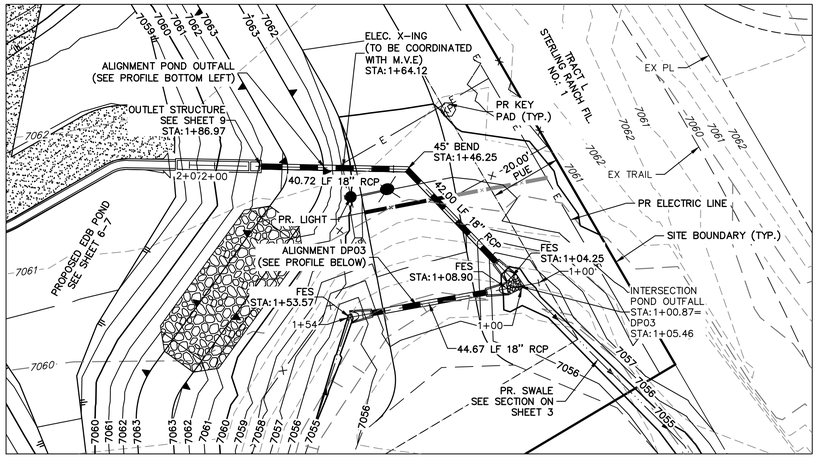
H-SCALE	1"=20'
V-SCALE	1"=2'
DATE	05/15/23
DESIGNED BY	QNL
DRAWN BY	QNL
CHECKED BY	

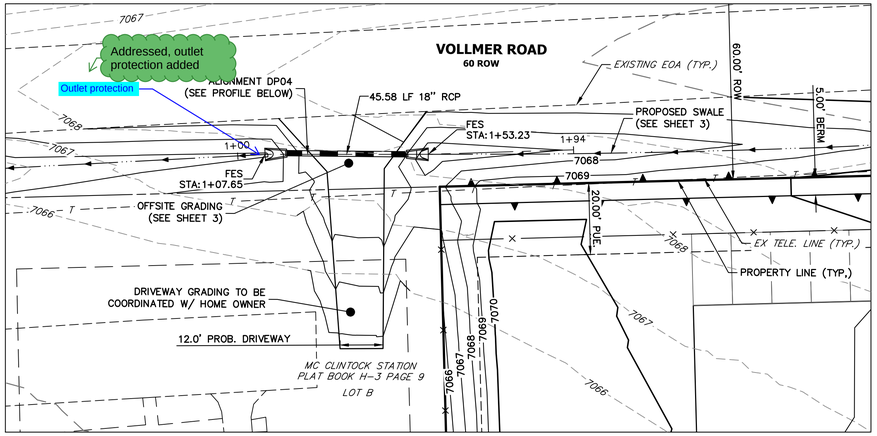
VOLLMER RV STORAGE

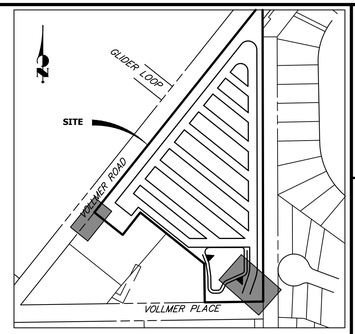
STORM SEWER PLAN AND PROFILE

SHEET 4 OF 13

JOB NO. 25251.00







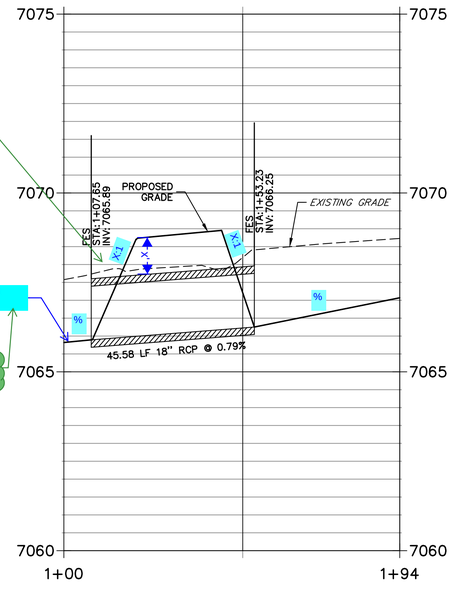
KEY MAP

SCALE: NTS

POND OUTFALL PROFILE
STA 1+00.00 TO 2+07.05

DP03 PROFILE
STA 1+00.00 TO 1+54.19

DP04 PROFILE
STA 1+00.00 TO 1+93.88



20 10 0 20 40

HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 2'

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No.	REVISION	BY	DATE

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V-SCALE	1"=2'	DRAWN BY	QNL	
DATE	05/15/23	CHECKED BY		

VOLLMER RV STORAGE

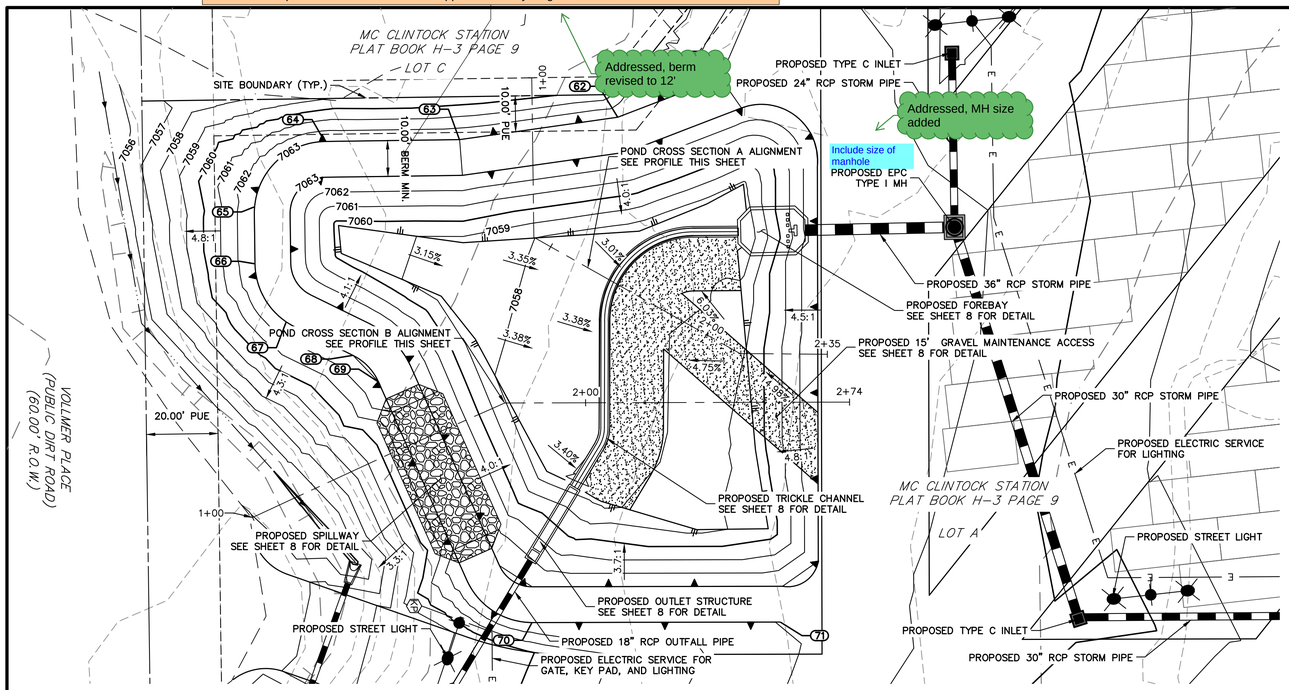
STORM SEWER PLAN AND PROFILE

SHEET 5 OF 13

JOB NO. 25251.00

Per DCMv1 11.3.3, adjust pond design to include a min. width of 12ft at top of embankment. unresolved.

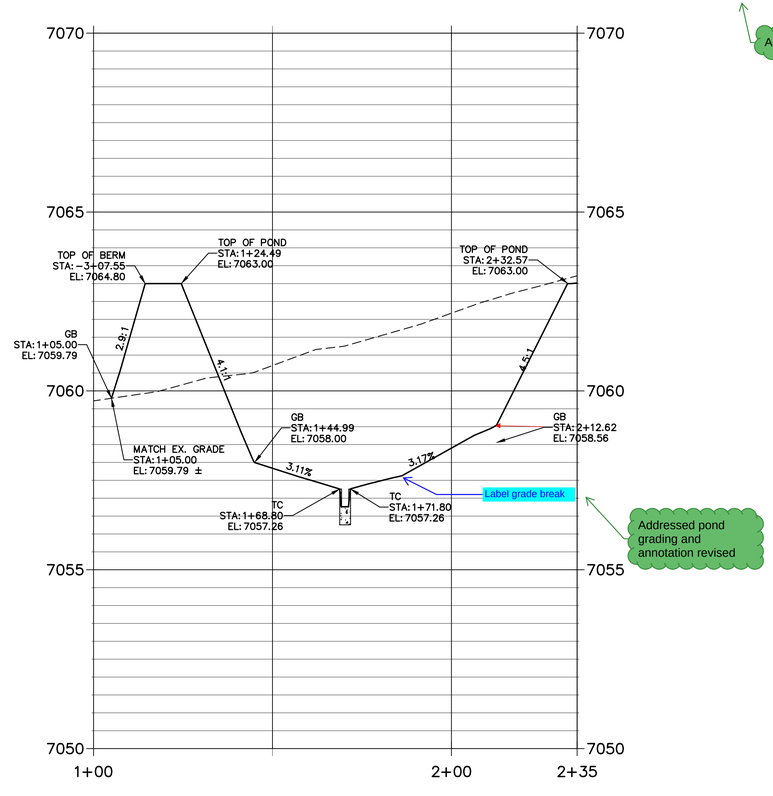
A Deviation request must be submitted and approved for anything less than 12 ft



POND CROSS SECTION A PROFILE
STA 1+00.00 TO 2+35.14

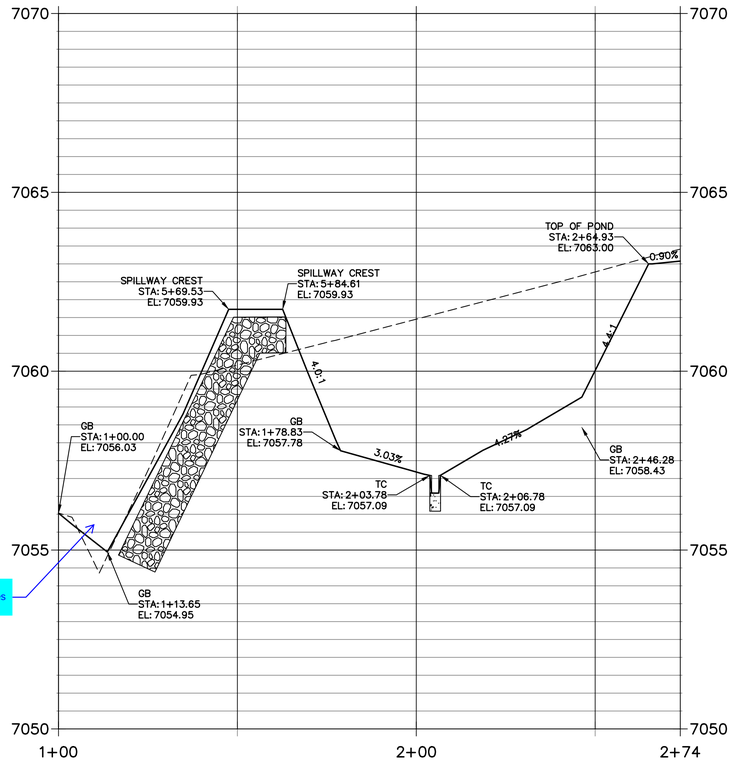
Assign a name/number (example: "Pond A" or "Pond 1")

Addressed, Pond V1



Addressed pond grading and annotation revised

POND CROSS SECTION B PROFILE
STA 1+00.00 TO 2+73.77



What happens to this swale if 100-yr flow comes over spillway?

Flows will stay in the proposed swale, see FDR Appendix C

LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
SWALE/WATERWAY FLOWLINE		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
TOE OF SLOPE		
TOP OF SLOPE		
FLARED END SECTION		
RIPRAP		
CONCRETE		
GRAVEL		

20 10 0 20 40

HORIZONTAL
ORIGINAL SCALE: 1" = 20'
VERTICAL
ORIGINAL SCALE: 1" = 2'

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DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	

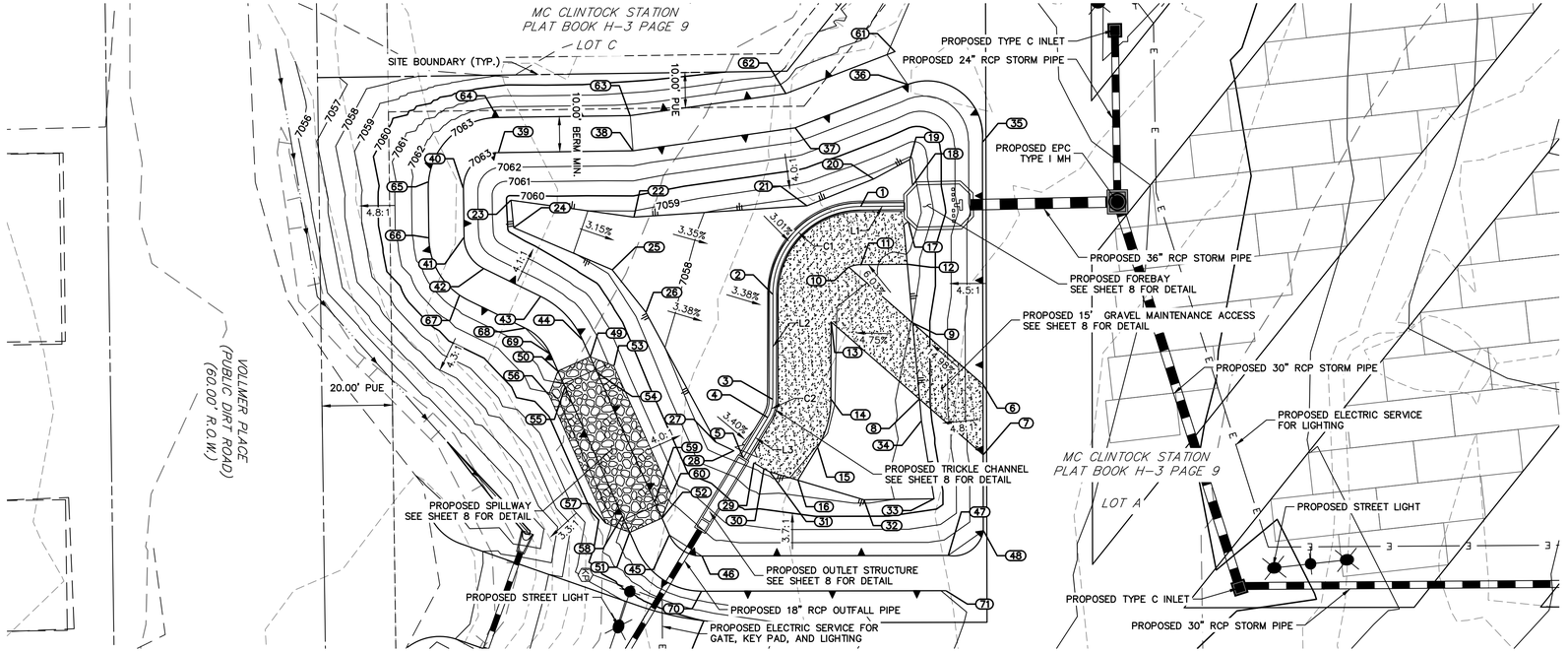
VOLLMER RV STORAGE

POND PLANS

SHEET 6 OF 13

JOB NO. 25251.00

X:\2520000.all\2525100\Drawings\Sheet Dwgs\GEC\2525100PG01.dwg, PD01, 5/15/2023 12:29:26 PM, CS



LINE TABLE		
LINE	BEARING	DISTANCE
L1	S00°25'00"E	12.38'
L2	S89°53'39"E	29.78'
L3	S58°52'17"E	13.39'

CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	CHORD
C1	89°28'39"	25.00'	39.04'	S45°09'20"E 35.19'
C2	31°01'22"	10.00'	5.41'	S74°22'58"E 5.35'

POINT TABULATION

ID NO.	DESCRIPTION	NORTHING/EASTING	ELEVATION
1	TRICKLE CHANNEL	N: 412949.04 E: 234999.68	7056.90
2	TRICKLE CHANNEL	N: 412924.22 E: 235024.63	7056.71
3	TRICKLE CHANNEL	N: 412924.17 E: 235054.41	7056.56
4	TRICKLE CHANNEL	N: 412922.73 E: 235059.56	7056.53
5	TRICKLE CHANNEL	N: 412915.80 E: 235071.02	7057.57
6	MAINT. ROAD/ TOP	N: 412983.70 E: 235050.05	7062.97
7	MAINT. ROAD/ TOP	N: 412983.89 E: 235070.14	7063.00
8	MAINT. ROAD/ TOE	N: 412965.82 E: 235054.35	7059.40
9	MAINT. ROAD/ TOE	N: 412963.86 E: 235032.72	7059.02
10	MAINT. ROAD	N: 412945.77 E: 235016.91	7057.77
11	MAINT. ROAD	N: 412949.16 E: 235016.18	7057.86
12	MAINT. ROAD	N: 412962.36 E: 235016.08	7058.17
13	MAINT. ROAD	N: 412940.71 E: 235032.40	7057.92
14	MAINT. ROAD	N: 412940.67 E: 235054.44	7057.94
15	MAINT. ROAD	N: 412936.85 E: 235068.09	7058.04
16	MAINT. ROAD	N: 412931.25 E: 235077.36	7058.15
17	TOE/ FOREBAY	N: 412962.57 E: 235003.99	7057.52
18	TOE/ FOREBAY	N: 412963.85 E: 234993.66	7057.65
19	TOE	N: 412963.02 E: 234986.36	7057.82
20	TOE	N: 412952.80 E: 234991.86	7057.60
21	TOE	N: 412933.89 E: 234999.48	7057.42
22	TOE	N: 412884.67 E: 235002.69	7058.59
23	TOE	N: 412849.84 E: 234997.90	7059.68
24	TOE	N: 412850.60 E: 235005.67	7059.60

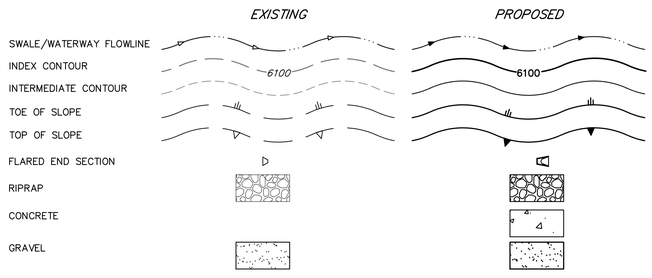
POINT TABULATION

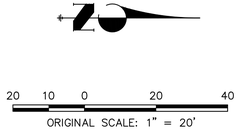
ID NO.	DESCRIPTION	NORTHING/EASTING	ELEVATION
25	TOE	N: 412878.55 E: 235017.64	7058.63
26	TOE	N: 412888.10 E: 235029.68	7058.27
27	TOE	N: 412908.06 E: 235066.61	7057.33
28	TOE	N: 412913.13 E: 235069.01	7057.31
29	TOE/ MAINT. ROAD	N: 412918.83 E: 235072.45	7057.61
30	TOE/ MAINT. ROAD	N: 412921.68 E: 235074.17	7057.75
31	TOE/ MAINT. ROAD	N: 412923.29 E: 235075.00	7057.79
32	TOE	N: 412949.99 E: 235082.91	7058.74
33	TOE	N: 412969.95 E: 235082.65	7059.34
34	TOE	N: 412966.38 E: 235060.54	7059.39
35	TOP	N: 412983.68 E: 234981.39	7063.00
36	TOP	N: 412962.47 E: 234965.04	7063.00
37	TOP	N: 412930.45 E: 234977.36	7063.00
38	TOP	N: 412884.47 E: 234983.87	7063.00
39	TOP	N: 412846.18 E: 234984.40	7063.00
40	TOP	N: 412836.32 E: 234994.53	7063.00
41	TOP	N: 412836.50 E: 235008.45	7063.00
42	TOP	N: 412842.11 E: 235017.31	7063.00
43	TOP	N: 412858.28 E: 235025.21	7063.00
44	TOP	N: 412870.14 E: 235037.50	7063.00
45	TOP	N: 412894.83 E: 235092.94	7063.00
46	TOP	N: 412903.99 E: 235098.88	7063.00
47	TOP	N: 412973.95 E: 235098.73	7063.00
48	TOP	N: 412983.94 E: 235091.70	7063.00

POINT TABULATION

ID NO.	DESCRIPTION	NORTHING/EASTING	ELEVATION
49	SPILLWAY/ TOP	N: 412872.28 E: 235042.31	7063.00
50	SPILLWAY/ TOP	N: 412863.15 E: 235046.38	7063.00
51	SPILLWAY/ TOP	N: 412883.55 E: 235092.20	7063.00
52	SPILLWAY/ TOP	N: 412892.69 E: 235088.13	7063.00
53	SPILLWAY CREST	N: 412878.99 E: 235044.89	7061.73
54	SPILLWAY CREST	N: 412874.35 E: 235046.95	7061.73
55	SPILLWAY CREST	N: 412865.21 E: 235051.02	7061.73
56	SPILLWAY	N: 412860.57 E: 235053.09	7060.82
57	SPILLWAY	N: 412876.85 E: 235089.63	7060.60
58	SPILLWAY CREST	N: 412881.49 E: 235087.56	7061.73
59	SPILLWAY CREST	N: 412890.62 E: 235083.49	7061.73
60	SPILLWAY CREST	N: 412895.26 E: 235081.43	7061.73
61	BERM	N: 412958.89 E: 234955.70	7063.04
62	BERM	N: 412927.92 E: 234967.62	7062.99
63	BERM	N: 412883.70 E: 234973.88	7063.00
64	BERM	N: 412846.05 E: 234974.40	7063.00
65	BERM	N: 412826.37 E: 234992.70	7063.00
66	BERM	N: 412826.50 E: 235008.58	7063.00
67	BERM	N: 412835.27 E: 235024.87	7063.00
68	BERM	N: 412853.89 E: 235034.19	7063.00
69	BERM	N: 412861.00 E: 235041.57	7063.00
70	BERM	N: 412904.01 E: 235108.88	7063.00
71	BERM	N: 412973.24 E: 235108.73	7063.02

LAYER LINETYPE LEGEND





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

ENGINEER'S STATEMENT

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COLORADO REGISTERED RYAN E. BURNS 0054412 PROFESSIONAL ENGINEER

RYAN E. BURNS, P.E. DATE
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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No.	REVISION	BY	DATE

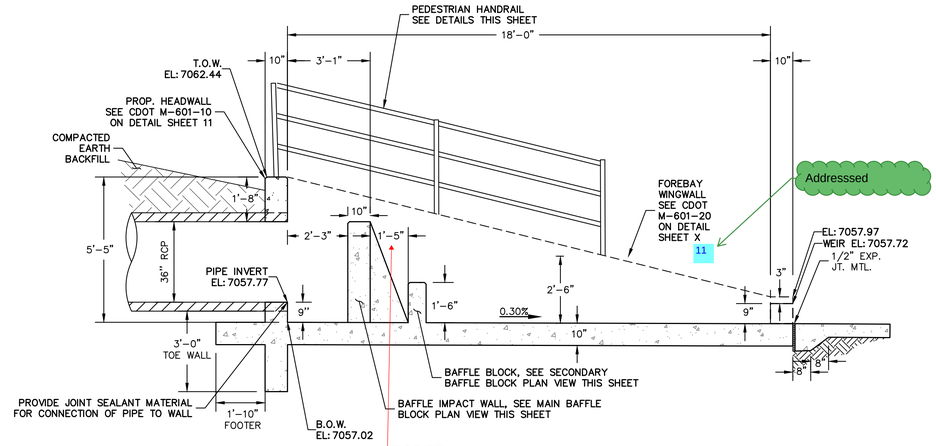
H-SCALE	1"=20'
V-SCALE	N/A
DATE	05/15/23
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	

VOLLMER RV STORAGE

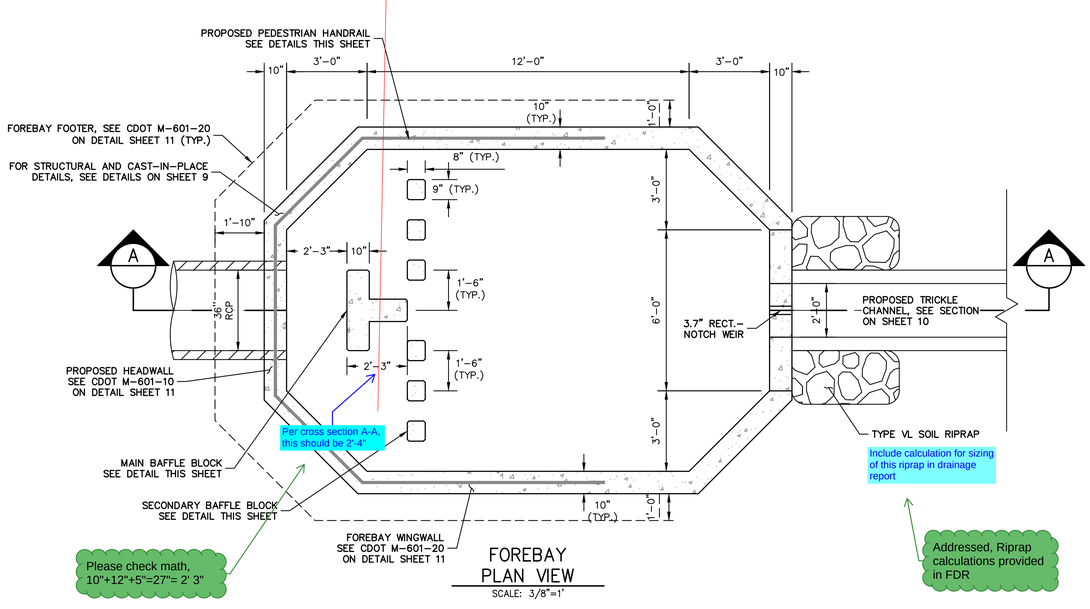
POND PLANS

SHEET 7 OF 13

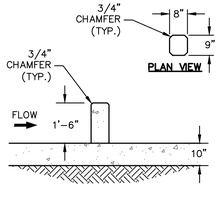
JOB NO. 25251.00



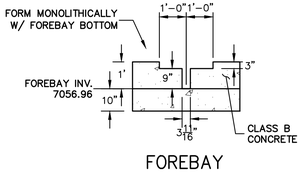
FOREBAY
CROSS SECTION A-A
SCALE: 3/8"=1'



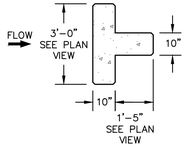
FOREBAY
PLAN VIEW
SCALE: 3/8"=1'



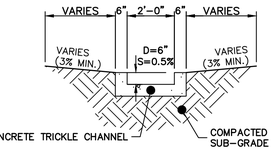
FOREBAY SECONDARY
BAFFLE BLOCK DETAILS
SCALE: 3/8"=1'



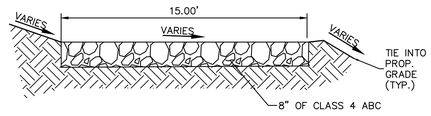
FOREBAY
SECTION AT WEIR
SCALE: 3/8"=1'



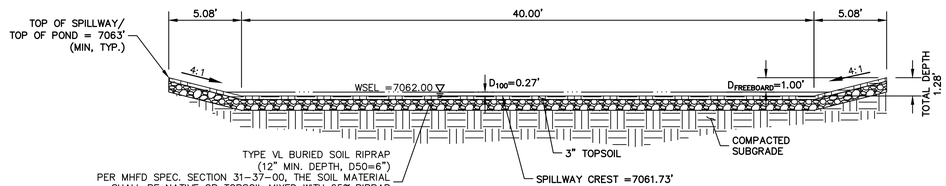
FOREBAY MAIN BAFFLE
BLOCK PLAN
SCALE: 3/8"=1'



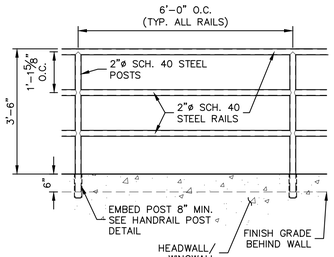
TRICKLE CHANNEL
SCALE: 1"=3'



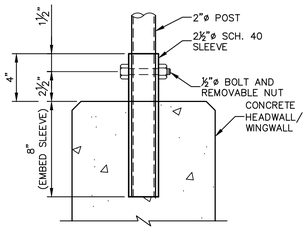
15' GRAVEL MAINTENANCE
ACCESS BERM TYPICAL SECTION
N.T.S.



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



PEDESTRIAN RAILING DETAIL
SCALE: 1/2"=1'



PEDESTRIAN RAILING
POST DETAIL
SCALE: 1"=6'

Know what's **below.**
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0054412
PROFESSIONAL ENGINEER

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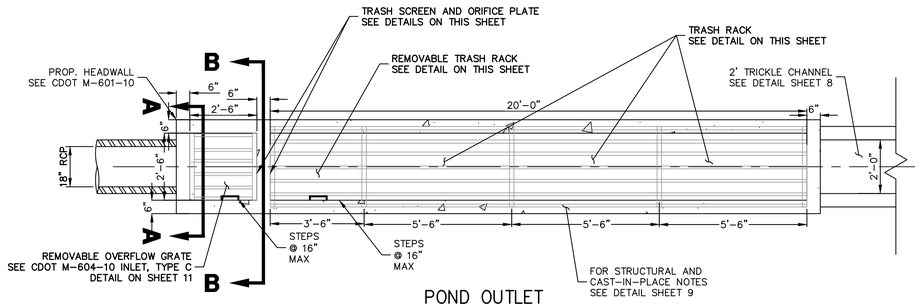
VOLLMER RV STORAGE

POND DETAILS

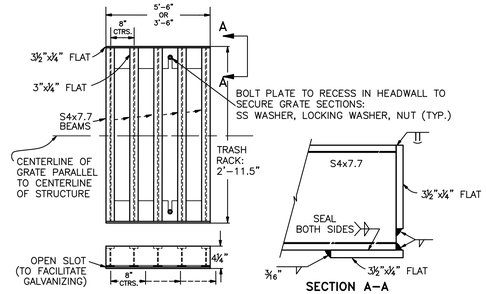
SHEET 8 OF 13

JOB NO. 25251.00



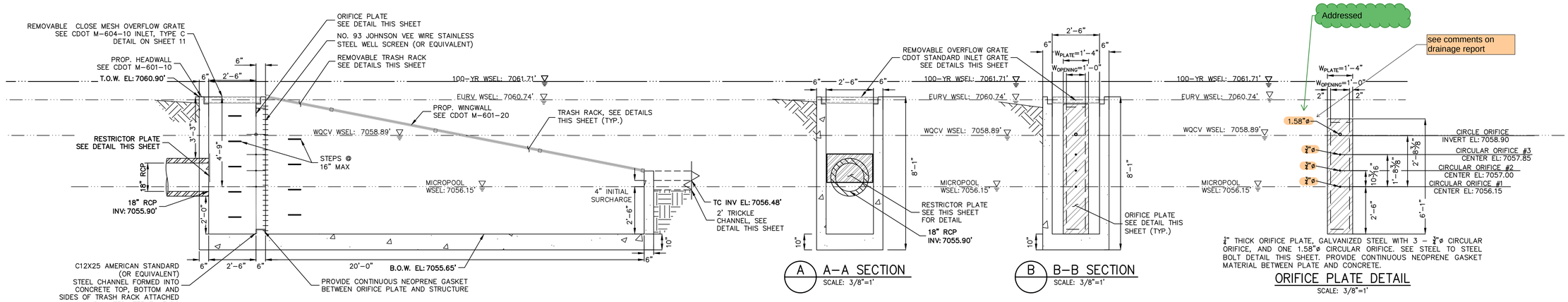
POND OUTLET STRUCTURE PLAN

SCALE: 3/8" = 1'



TRASH RACK DETAILS

N.T.S.



POND OUTLET STRUCTURE PROFILE

A A-A SECTION

SCALE: 3/8"=1'

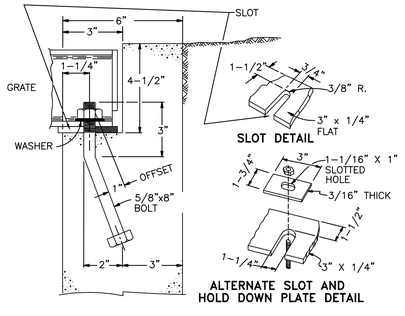
B B-B SECTION

SCALE: 3/8"=1'

1" THICK ORIFICE PLATE, GALVANIZED STEEL WITH 3 – ¾"ø CIRCULAR ORIFICE, AND ONE 1.58"ø CIRCULAR ORIFICE. SEE STEEL TO STEEL BOLT DETAIL THIS SHEET. PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN PLATE AND CONCRETE.

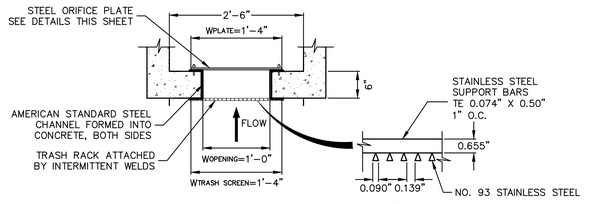
ORIFICE PLATE DETAIL

SCALE: 3/8"=1'



OVERFLOW GRATE/ TRASH RACK INSTALLATION DETAIL

N.T.S.



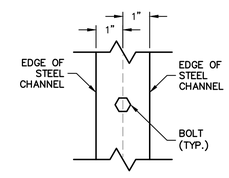
R VALUE=(NET OPEN AREA/(GROSS RACK AREA)=0.60

TRASH SCREEN DETAIL

N.T.S.

TRASH SCREEN AND PLATE DETAIL (PLAN)

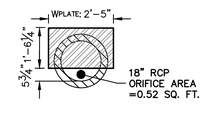
N.T.S.



BOLTS SPACED @ 12" O.C. MAX. PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN PLATE AND CONCRETE

BOLT DETAIL–STEEL TO STEEL

N.T.S.



¾" THICK RESTRICTOR PLATE, GALVANIZED STEEL. SEE STEEL TO STEEL BOLT DETAIL THIS SHEET. PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN PLATE AND CONCRETE.

RESTRICTOR PLATE DETAIL

SCALE: 3/8"=1'

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VOLLMER RV STORAGE

POND DETAILS

SHEET 9 OF 13

JOB NO. 25251.00

GENERAL STRUCTURE NOTES:

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

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

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

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

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

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

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

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

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

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

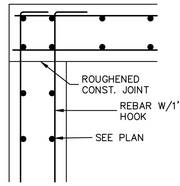
WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS. THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

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

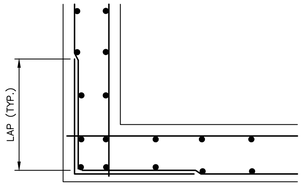
THE CONTRACTOR SHALL SUBMIT REINFORCING STEEL PLACING DRAWINGS (PRIOR TO CONSTRUCTION) TO THE ENGINEER FOR REVIEW FOR CONFORMANCE WITH THE DESIGN DRAWINGS. THE DESIGN DRAWINGS SHALL GOVERN OVER PLACING DRAWINGS IN ALL CASES UNLESS MODIFICATIONS ARE APPROVED IN WRITING BY ENGINEER.

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

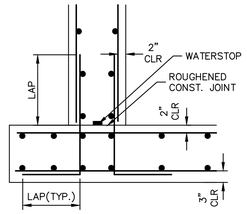
E.F.	= EACH FACE	O.F.	= OUTSIDE FACE
F.E.	= FAR FACE	T.&B.	= TOP AND BOTTOM
N.F.	= NEAR FACE	T.F.	= TOP FACE
I.F.	= INSIDE FACE	B.F.	= BOTTOM FACE
T.W.	= TWO WAY	T.F.	= TWO FACES
E.S.	= EACH SIDE	Lp	= LAP LENGTH



TYPICAL TOP CORNER WALL SECTION DETAIL



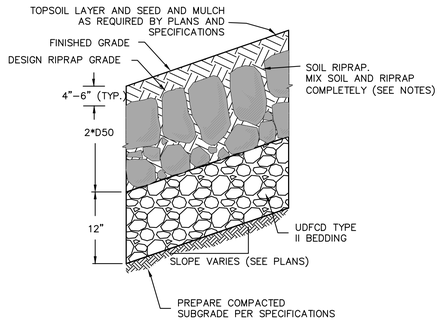
TYPICAL WALL CORNER PLAN VIEW



TYPICAL BOTTOM CORNER WALL SECTION DETAIL

CAST-IN-PLACE STRUCTURAL NOTES:

1. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.
2. ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE APPROVED BY THE ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
4. DO NOT BACKFILL UNTIL CONCRETE HAS REACHED DESIGN STRENGTH, F'c.
5. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾".
6. CONTRACTOR SHALL SUBMIT STEEL REINFORCING SHOP DRAWINGS FOR ALL CAST-IN-PLACE STRUCTURES FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
7. HEADWALLS FOR PIPES SHALL BE CONSTRUCTED PER CDOT M-601-10.
8. WINGWALLS SHALL BE CONSTRUCTED PER CDOT M-601-20.



SOIL RIPRAP EMBANKMENT PROTECTION WITH BEDDING TYP. SECTION
N.T.S.

TYPE VL RIPRAP

INTERMEDIATE ROCK DIMENSION (IN.)	PERCENT PASSING (%)
12	70-100
9	50-70
6	35-50
2	2-10

*TYPE VL RIPRAP D50=6".
D50 = MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.

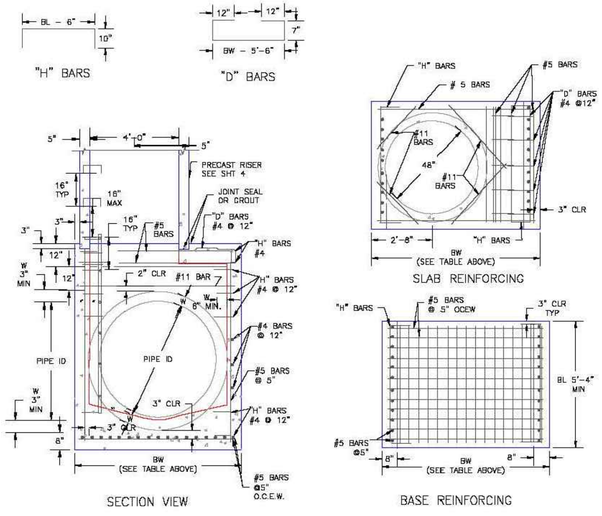
TYPE L RIPRAP

INTERMEDIATE ROCK DIMENSION (IN.)	PERCENT PASSING (%)
15	70-100
12	50-70
9	35-50
3	2-10

*TYPE L RIPRAP D50=9".
D50 = MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.

RIPRAP NOTES:

1. SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREAS. REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
2. MIX UNIFORMLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
3. PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
5. ROCK SHALL BE HARD, DURABLE, ANGULAR IN SHAPE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER.
6. NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHOULD BE LESS THAN ONE-THIRD ITS LENGTH, AND ROUNDED STONE SHOULD BE AVOIDED.
7. THE ROCK SHOULD SUSTAIN A LOSS OF NOT MORE THAN 40% AFTER 500 REVOLUTIONS IN AN ABRASION TEST (LOS ANGELES MACHINE ASTM C-535-69) AND SHOULD SUSTAIN A LOSS OF NOT MORE THAN 10% AFTER 12 CYCLES OF FREEZING AND THAWING (AASHTO TEST 103 FOR LEDGE ROCK PROCEDURE A).
8. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.65 IS PREFERRED; HOWEVER, IN NO CASE SHOULD ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50.



PIPE ID	BW
48" AND SMALLER	6'-4"
54"	6'-10"
60" AND LARGER	OD + 16"

NOTES

1. TYPE I MANHOLE SHALL BE USED WHEN APPROPRIATE AND TYPICALLY FOR PIPE SIZES LARGER THAN 30 INCHES I.D..

2. VIEW AND DETAILS SHOWN ARE TYPICAL FOR STRAIGHT THROUGH DESIGN ONLY. DESIGN ENGINEER SHALL DETERMINE MANHOLE BASE CONFIGURATION AND DIMENSIONS FOR PARTICULAR PIPE SIZES AND ALIGNMENT.

3. EITHER LADDER OR STEPS SHALL BE INSTALLED WHEN MANHOLE DEPTH EXCEEDS 30". LOWEST STEP SHALL BE BE A MAXIMUM OF 16" ABOVE THE FLOOR.

4. FLOOR OF THE MANHOLE SHALL BE TROWELLED TO A SMOOTH, HARD SURFACE AND SHALL SLOPE TOWARDS THE OUTLET (8:1 MAX., ½" PER FT. MIN). FLOOR SHALL BE SHAPED AND CHANNELED; SEE SD_3-2 FOR TYPICAL CHANNEL DETAILS.

SCALE: NOT TO SCALE

7/9/09
DATE APPROVED:
André Brackin
DEPARTMENT OF TRANSPORTATION

Storm Sewer Manhole Detail
Type I
Standard Drawing

REVISION DATE: 7/9/09
FILE NAME: SD_3-1

EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

COLORADO REGISTERED RYAN E. BURNS 0054412 PROFESSIONAL ENGINEER

RYAN E. BURNS, P.E. DATE
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Know what's below. Call before you dig.

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

PREPARED FOR
SCOTT BELKNAP
3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109
(719)-322-3556
SCOTT.BELKNAP@YAHOO.COM

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE: VARIES
V-SCALE: VARIES
DATE: 05/15/23
DESIGNED BY: APL
DRAWN BY: APL
CHECKED BY:

VOLLMER RV STORAGE

POND DETAILS

SHEET 10 OF 13
JOB NO. 25251.00

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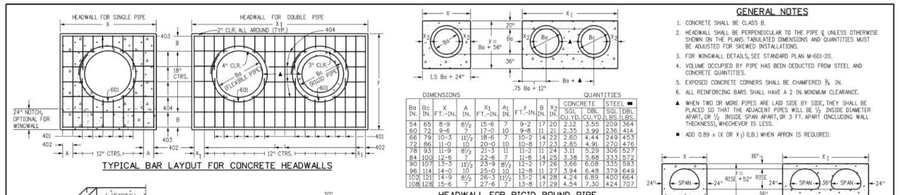


GENERAL NOTES

1. CONCRETE SHALL BE CLASS B.
2. HEADWALL SHALL BE PERPENDICULAR TO THE PIPE ℄ UNLESS OTHERWISE SHOWN ON THE PLANS. TABULATED DIMENSIONS AND QUANTITIES MUST BE ADJUSTED FOR SKEWED INSTALLATIONS.
3. FOR WINGWALL DETAILS, SEE STANDARD PLAN M-601-20.
4. VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED FROM STEEL AND CONCRETE QUANTITIES.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
6. ALL REINFORCING BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.

▲ WHEN TWO OR MORE PIPES ARE LAID SIDE BY SIDE, THEY SHALL BE PLACED SO THAT THE ADJACENT PIPES WILL BE ½ INSIDE DIAMETER APART, OR ½ INSIDE SPAN APART, OR 3 FT. APART (INCLUDING WALL THICKNESS), WHICHEVER IS LESS.

■ ADD 0.89 x (X OR X1) (LB.) WHEN APRON IS REQUIRED.

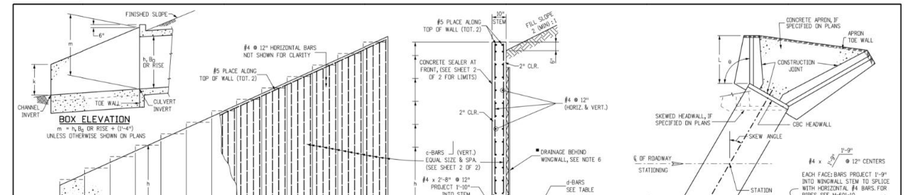
DIMENSIONS											QUANTITIES		
Bo IN.	Bc IN.	X FT.-IN.	A IN.	X1 FT.-IN.	A1 IN.	Y FT.-IN.	B IN.	X2 IN.	CONCRETE CU. YD.	CONCRETE CU. YD.	STEEL ■ SQ. LBS.	STEEL ■ DBL. SQ. LBS.
54	65	8-9	9½	13-6	7	9-2	17½	20	2.22	3.55	359	364
60	72	9-6	9½	14-3	7	9-8	17½	21	2.35	3.99	236	414
66	79	10-3	10½	15-0	7	10-2	17½	22	2.50	4.44	249	453
72	86	11-0	10½	15-9	7	10-8	17½	23	2.85	4.91	270	476
78	93	11-9	10½	16-6	7	11-2	17½	24	3.11	5.39	306	527
84	100	12-6	7	17-3	7	11-8	17½	25	3.38	5.68	333	572
90	107	13-3	10½	17-9	7	12-2	17½	26	3.68	6.08	335	595
96	114	14-0	10½	18-6	7	12-8	17½	27	3.94	6.48	379	649
102	121	14-9	10½	19-3	7	13-2	17½	28	4.24	6.89	400	684
108	128	15-6	7	19-11	7	13-8	17½	29	4.54	7.30	424	707

DIMENSIONS											QUANTITIES		
EQUIV Bo IN.	SPAN IN.	RISE IN.	A IN.	X1 FT.-IN.	A1 IN.	Y FT.-IN.	B IN.	X2 IN.	CONCRETE CU. YD.	CONCRETE DBL. CU. YD.	STEEL ■ SQ. LBS.	STEEL ■ DBL. SQ. LBS.
72	81	59	10-9	8½	20-6	7	9-3	17½	2.72	5.10	250	467
78	87	63	11-3	11½	21-6	7	9-7	18½	2.85	5.34	275	531
84	95	67	11-9	8½	22-10	9	9-11	17½	3.08	5.79	290	547
90	103	72	12-7	7½	24-2	8	10-5	18	3.30	6.23	321	591
96	112	75	13-4	12	25-8	8	10-7	16½	3.52	6.65	314	606
102	117	79	13-9	8½	26-6	7	10-11	16½	3.63	6.86	356	672
108	128	83	14-8	8	28-4	12	11-3	17½	3.96	7.51	376	699

DIMENSIONS											QUANTITIES		
EQUIV Bo IN.	SPAN IN.	RISE FT.-IN.	A FT.-IN.	X1 FT.-IN.	A1 IN.	Y FT.-IN.	B IN.	X2 IN.	CONCRETE SQ. CU. YD.	CONCRETE DBL. CU. YD.	STEEL ■ SQ. LBS.	STEEL ■ DBL. SQ. LBS.
66	6-1	4-7	10-1	10½	19-2	11	8-11	15½	2.52	4.70	232	424
75	7-0	5-1	11-0	11	21-0	10	9-5	16½	2.80	5.23	282	509
84	7-11	5-7	11-11	9½	22-10	9	9-11	17½	3.08	5.79	291	540
93	8-10	6-1	12-10	9	24-8	8	10-5	15½	3.36	6.33	309	622
102	9-9	6-7	13-9	8½	26-6	7	10-11	9½	3.63	6.86	379	673
111	10-11	7-1	14-11	9½	28-10	9	11-5	12½	4.05	7.67	377	711
120	11-10	7-7	15-10	9	30-8	8	11-11	15½	4.36	8.28	395	731
132	13-0	8-4	16-10	9	32-8	12	11-11	11	4.75	9.03	441	839
141	14-1	8-9	18-1	10½	35-2	11	13-1	13½	5.17	9.86	448	931
150	15-4	9-3	19-4	12	37-8	8	13-7	16½	5.69	10.88	490	953
159	15-10	9-10	19-10	12	38-8	8	14-2	11	5.89	11.25	534	1019

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

Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments	2829 West Howard Place	HEADWALL FOR PIPES	M-601-10
Designer Initials: JBK	(REV)			CDOT HQ, 3rd Floor		Standard Sheet No. 1 of 1
Last Modification Date: 07/31/19	(REV)			Denver, CO 80204		
Detailer Initials: LTA	(REV)			Phone: 303-757-9021 FAX: 303-757-9868		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(REV)			Project Development Branch JBK	Issued by the Project Development Branch: July 31, 2019	Project Sheet Number:



DESIGN DATA:

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

REINFORCED CONCRETE:
CONCRETE CLASS D (BOX CULVERT): f'_c = 4,500 PSI
REINFORCING STEEL: f_y = 60,000 PSI

LOADING:
AT-REST EARTH (FLUID) PRESSURE FOR CONCRETE STEM DESIGN = 55 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
ACTIVE EARTH (FLUID) PRESSURE FOR CONCRETE FOOTING DESIGN = 40 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
LIVE LOAD SURCHARGE = 2'
MINIMUM RESISTANCE FOR SOIL BEARING = 5.5 KSF
SOIL BEARING RESISTANCE FACTOR = 0.45

GENERAL NOTES:

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
2. WINGWALL FOOTING AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
3. DIMENSIONS "H", "W", "L", "W1" AND ANGLE "Y" FOR WINGWALL SHALL BE AS SHOWN ON THE PLANS.
4. MINIMUM CLASS B LAP SPLICE LENGTH FOR BLACK REINFORCING BARS:

BAR SIZE	#4	#5	#6	#7
SPLICE LENGTH	1'-8"	1'-11"	2'-3"	2'-7"

5. DESIGN DOES NOT CONSIDER ANY SCOUR EFFECTS.
6. WINGWALL DRAIN SHALL BE REQUIRED IF "H" ≥ 12.0 FT., SEE SHEET 2 OF 2 FOR DETAILS.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments	2829 West Howard Place	WINGWALLS FOR PIPE OR BOX CULVERTS	M-601-20
Designer Initials: JBK	(REV)			CDOT HQ, 3rd Floor		Standard Sheet No. 1 of 2
Last Modification Date: 07/31/19	(REV)			Denver, CO 80204		
Detailer Initials: LTA	(REV)			Phone: 303-757-9021 FAX: 303-757-9868		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(REV)			Project Development Branch JBK	Issued by the Project Development Branch: July 31, 2019	Project Sheet Number:

c-BARS AND REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)

■ REINFORCING STEEL QUANTITY INCLUDES STEM AND FOOTING QUANTITIES, BUT DOES NOT INCLUDE TOE WALL QUANTITIES.

L (MULTIPLE OF m)		≤ (1.0 x m)		≤ (1.25 x m)		≤ (1.5 x m)		≤ (1.75 x m)		≤ (2.0 x m)		≤ (2.25 x m)		≤ (2.5 x m)		≤ (2.75 x m)		≤ (3.0 x m)		≤ (3.25 x m)		≤ (3.5 x m)	
m (FT.)	k (FT.)	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.	c-BARS	■ REINF. LB./L.F.
14	4	#5 @ 10"	53.80	#5 @ 10"	57.95	#5 @ 10"	57.32	#5 @ 8"	60.22	#5 @ 7"	62.43	#5 @ 7"	62.09	#5 @ 6"	65.38	#5 @ 6"	65.35	#6 @ 8"	67.10	#6 @ 8"	66.94	#6 @ 7"	70.66		
	5	#5 @ 10"	55.86	#5 @ 10"	60.46	#5 @ 10"	59.60	#5 @ 8"	62.89	#5 @ 7"	65.23	#5 @ 7"	64.88	#5 @ 6"	68.34	#5 @ 6"	68.31	#6 @ 8"	70.17	#6 @ 8"	70.00	#6 @ 7"	73.90		
	6	#5 @ 10"	64.43	#5 @ 10"	70.60	#5 @ 10"	69.69	#5 @ 8"	74.93	#6 @ 8"	74.45	#6 @ 7"	78.30	#6 @ 6"	83.64	#6 @ 6"	83.40	#6 @ 8"	83.22	#6 @ 7"	83.05	#7 @ 7"	89.64		
	7	#5 @ 10"	67.29	#5 @ 10"	73.76	#5 @ 10"	72.83	#5 @ 8"	78.32	#6 @ 8"	77.84	#6 @ 7"	81.85	#6 @ 6"	87.45	#6 @ 6"	87.21	#6 @ 8"	87.02	#6 @ 7"	86.86	#7 @ 7"	93.73		
	8	#5 @ 8"	74.73	#5 @ 8"	83.46	#6 @ 7"	87.09	#6 @ 6"	92.54	#6 @ 6"	99.43	#7 @ 7"	99.08	#7 @ 6"	107.01	#7 @ 6"	106.86	#7 @ 6"	106.69	#7 @ 6"	106.49	#7 @ 6"	106.35		
	9	#5 @ 8"	78.30	#5 @ 8"	87.23	#6 @ 7"	91.03	#6 @ 6"	96.72	#7 @ 7"	103.93	#7 @ 7"	103.54	#7 @ 6"	111.90	#7 @ 6"	111.65	#7 @ 6"	111.45	#7 @ 6"	111.28	#7 @ 6"	111.13		
13	4	#5 @ 10"	50.51	#5 @ 10"	49.25	#5 @ 10"	53.73	#5 @ 10"	53.09	#5 @ 10"	52.36	#5 @ 9"	53.85	#5 @ 8"	55.54	#5 @ 7"	57.85	#5 @ 7"	57.67	#5 @ 7"	57.52	#6 @ 9"	59.93		
	5	#5 @ 10"	52.66	#5 @ 10"	51.37	#5 @ 10"	56.09	#5 @ 10"	55.46	#5 @ 10"	54.99	#5 @ 9"	56.29	#5 @ 8"	58.08	#5 @ 7"	60.51	#5 @ 7"	60.33	#5 @ 7"	60.17	#6 @ 9"	62.72		
	6	#5 @ 10"	54.92	#5 @ 10"	59.48	#5 @ 9"	60.31	#5 @ 9"	67.56	#6 @ 9"	67.08	#6 @ 8"	66.70	#6 @ 8"	69.53	#6 @ 8"	69.28	#6 @ 7"	73.12	#6 @ 7"	72.95	#6 @ 7"	72.81		
	7	#5 @ 10"	57.36	#5 @ 10"	62.16	#5 @ 9"	63.05	#5 @ 9"	70.66	#6 @ 9"	70.16	#6 @ 8"	69.78	#6 @ 8"	72.75	#6 @ 8"	72.50	#6 @ 7"	76.52	#6 @ 7"	76.35	#6 @ 7"	76.20		
	8	#5 @ 10"	66.39	#5 @ 10"	72.82	#5 @ 8"	77.97	#6 @ 7"	81.68	#6 @ 7"	81.39	#6 @ 6"	86.67	#6 @ 6"	86.37	#7 @ 7"	93.18	#7 @ 7"	92.97	#7 @ 7"	92.80	#7 @ 7"	92.64		
	9	#5 @ 10"	69.37	#5 @ 10"	76.10	#5 @ 8"	81.49	#6 @ 7"	85.37	#6 @ 7"	84.87	#6 @ 6"	90.59	#6 @ 6"	90.29	#7 @ 7"	97.39	#7 @ 7"	97.18	#7 @ 7"	97.00	#7 @ 7"	96.85		
12	2	#5 @ 10"	43.90	#5 @ 10"	42.65	#4 @ 10"	41.82	#4 @ 10"	41.22	#4 @ 10"	40.78	#4 @ 9"	41.29	#5 @ 10"	44.61	#5 @ 10"	44.37	#5 @ 10"	44.18	#5 @ 9"	44.02	#5 @ 10"	43.87		
	3	#5 @ 10"	45.82	#5 @ 10"	44.55	#4 @ 10"	43.71	#4 @ 10"	43.11	#4 @ 10"	42.66	#4 @ 9"	43.22	#5 @ 10"	46.75	#5 @ 10"	46.51	#5 @ 10"	46.32	#5 @ 10"	46.15	#5 @ 10"	46.01		
	4	#5 @ 10"	47.80	#5 @ 10"	46.51	#4 @ 10"	45.65	#5 @ 10"	50.06	#5 @ 10"	49.59	#5 @ 10"	49.23	#5 @ 10"	48.94	#5 @ 10"	48.69	#5 @ 9"	50.00	#5 @ 8"	51.72	#5 @ 8"	51.57		
	5	#5 @ 10"	49.84	#5 @ 10"	48.53	#4 @ 10"	47.66	#5 @ 10"	52.33	#5 @ 10"	51.85	#5 @ 10"	51.48	#5 @ 10"	51.19	#5 @ 10"	50.94	#5 @ 9"	52.33	#5 @ 8"	54.14	#5 @ 8"	54.00		
	6	#5 @ 10"	51.99	#5 @ 10"	50.65	#5 @ 10"	55.34	#5 @ 9"	58.41	#5 @ 9"	57.93	#5 @ 10"	60.60	#5 @ 10"	60.29	#5 @ 9"	62.42	#5 @ 9"	62.22	#5 @ 9"	62.04	#5 @ 8"	64.89		
	7	#5 @ 10"	54.30	#5 @ 10"	58.80	#5 @ 9"	57.87	#5 @ 9"	61.01	#5 @ 8"	60.61	#5 @ 9"	63.43	#5 @ 8"	63.11	#5 @ 8"	63.01	#5 @ 8"	62.91	#5 @ 9"	65.35	#5 @ 9"	65.20	#6 @ 9"	67.96
	8	#5 @ 10"	62.91	#5 @ 9"	61.45	#5 @ 7"	67.46	#5 @ 6"	70.68	#5 @ 6"	70.20	#6 @ 7"	76.44	#6 @ 7"	76.13	#6 @ 7"	75.87	#6 @ 6"	81.30	#6 @ 6"	81.12	#6 @ 6"	80.98		
	9	#5 @ 10"	65.64	#5 @ 9"	64.25	#5 @ 7"	70.44	#5 @ 6"	73.82	#5 @ 6"	73.33	#6 @ 7"	79.86	#6 @ 7"	79.54	#6 @ 7"	79.28	#6 @ 6"	84.95	#6 @ 6"	84.77	#6 @ 6"	84.62		
11	2	#5 @ 10"	41.70	#5 @ 10"	40.42	#4 @ 10"	39.57	#4 @ 10"	38.96	#4 @ 10"	38.50	#4 @ 10"	38.15	#4 @ 10"	37.87	#4 @ 10"	37.63	#4 @ 9"	38.25	#5 @ 10"	41.46	#5 @ 10"	41.31		
	3	#5 @ 10"	43.57	#5 @ 10"	42.27	#4 @ 10"	41.40	#4 @ 10"	40.79	#4 @ 10"	40.33	#4 @ 10"	39.97	#4 @ 10"	39.69	#4 @ 10"	39.45	#4 @ 9"	40.12	#5 @ 10"	43.54	#5 @ 10"	43.39		
	4	#5 @ 10"	45.48	#5 @ 10"	44.16	#4 @ 10"	43.28	#4 @ 10"	42.66	#4 @ 9"	43.09	#5 @ 10"	46.57	#5 @ 10"	46.27	#5 @ 10"	46.02	#5 @ 10"	45.82	#5 @ 10"	45.65	#5 @ 10"	45.50		
	5	#5 @ 10"	47.46	#5 @ 10"	46.10	#4 @ 10"	45.21	#4 @ 10"	44.58	#4 @ 9"	45.06	#5 @ 10"	48.74	#5 @ 10"	48.44	#5 @ 10"	48.19	#5 @ 10"	47.99	#5 @ 10"	47.81	#5 @ 10"	47.67		
	6	#5 @ 10"	49.52	#5 @ 10"	48.14	#4 @ 9"	48.23	#5 @ 10"	51.88	#5 @ 10"	51.38	#5 @ 9"	52.57	#5 @ 9"	52.27	#5 @ 8"	53.99	#5 @ 8"	53.79	#5 @ 7"	56.16	#5 @ 7"	56.01		
	7	#5 @ 10"	51.73	#5 @ 10"	50.31	#4 @ 9"	50.43	#5 @ 9"	54.29	#5 @ 9"	53.78	#5 @ 9"	55.04	#5 @ 9"	54.73	#5 @ 8"	56.55	#5 @ 8"	56.35	#5 @ 7"	58.84	#5 @ 7"	58.70		
	8	#5 @ 10"	54.00	#5 @ 10"	58.44	#5 @ 10"	57.45	#5 @ 8"	60.64	#5 @ 7"	62.92	#5 @ 6"	66.25	#5 @ 6"	65.94	#5 @ 6"	65.69	#5 @ 8"	67.76	#5 @ 8"	67.57	#5 @ 7"	71.45		
	9	#5 @ 10"	56.20	#5 @ 10"	60.87	#5 @ 10"	59.85	#5 @ 8"	63.21	#5 @ 7"	65.60	#5 @ 6"	69.09	#5 @ 6"	68.78	#5 @ 6"	68.52	#5 @ 8"	70.69	#5 @ 8"	70.51	#5 @ 7"	74.57		
10	2	#5 @ 10"	39.84	#5 @ 10"	38.53	#4 @ 10"	37.65	#4 @ 10"	37.03	#4 @ 10"	36.57	#4 @ 10"	36.20	#4 @ 10"	35.91	#4 @ 10"	35.67	#4 @ 10"	35.48	#4 @ 9"	36.07	#4 @ 9"	35.93		
	3	#5 @ 10"	41.68	#5 @ 10"	40.35	#4 @ 10"	39.47	#4 @ 10"	38.84	#4 @ 10"	38.36	#4 @ 10"	38.00	#4 @ 10"	37.71	#4 @ 10"	37.46	#4 @ 10"	37.27	#4 @ 9"	37.91	#4 @ 9"	37.76		
	4	#5 @ 10"	43.58	#5 @ 10"	42.22	#4 @ 10"	41.31	#4 @ 10"	40.67	#4 @ 10"	40.19	#4 @ 10"	39.82	#4 @ 10"	39.53	#4 @ 10"	39.28	#4 @ 10"	39.08	#4 @ 9"	39.77	#4 @ 9"	39.63		
	5	#5 @ 10"	45.53	#5 @ 10"	44.14	#4 @ 10"	43.21	#4 @ 10"	42.56	#4 @ 10"	42.07	#4 @ 10"	41.68	#4 @ 10"	41.37	#4 @ 10"	41.13	#4 @ 10"	40.93	#4 @ 9"	41.67	#4 @ 9"	41.54		
	6	#5 @ 10"	47.58	#5 @ 10"	46.14	#4 @ 10"	45.20	#4 @ 10"	44.53	#4 @ 10"	44.03	#4 @ 10"	43.62	#4 @ 10"	43.30	#4 @ 10"	43.04	#4 @ 10"	42.83	#4 @ 10"	43.62	#4 @ 9"	43.54		
	7	#5 @ 10"	49.79	#5 @ 10"	48.30	#4 @ 10"	47.34	#5 @ 10"	51.97	#5 @ 10"	51.45	#5 @ 10"	51.04	#5 @ 9"	52.29	#5 @ 9"	52.03	#5 @ 8"	53.79	#5 @ 8"	53.61	#5 @ 7"	56.00		
	8	#5 @ 10"	52.06	#5 @ 10"	50.54	#4 @ 10"	49.54	#5 @ 10"	54.43	#5 @ 10"	53.89	#5 @ 10"	53.47	#5 @ 9"	54.80	#5 @ 9"	54.53	#5 @ 8"	56.39	#5 @ 8"	56.20	#5 @ 7"	58.72		
9	2	#5 @ 10"	38.01	#5 @ 10"	36.75	#4 @ 10"	35.85	#4 @ 10"	35.21	#4 @ 10"	34.73	#4 @ 10"	34.36	#4 @ 10"	34.06	#4 @ 10"	33.81	#4 @ 10"	33.61	#4 @ 9"	33.44	#4 @ 9"	33.30		
	3	#5 @ 10"	39.93	#5 @ 10"	38.56	#4 @ 10"	37.64	#4 @ 10"	36.99	#4 @ 10"	36.51	#4 @ 10"	36.13	#4 @ 10"	35.83	#4 @ 10"	35.58	#4 @ 9"	35.37	#4 @ 9"	35.21	#4 @ 9"	35.08		
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	7	#5 @ 10"	48.04	#5 @ 10"	46.50	#4 @ 10"	45.49	#4 @ 10"	44.77	#5 @ 10"	49.29	#5 @ 10"	48.86	#5 @ 10"	48.53	#5 @ 10"	48.24	#5 @ 10"	48.03	#5 @ 9"	47.84	#5 @ 10"	47.67		
	8	#5 @ 10"	50.43	#5 @ 10"	48.84	#4 @ 10"	47.80	#4 @ 10"	47.06	#5 @ 10"	51.83	#5 @ 10"	51.40	#5 @ 10"	51.05	#5 @ 10"	50.77	#5 @ 10"	50.54	#5 @ 10"	50.35	#5 @ 10"	50.18		
8	2	#5 @ 10"	36.41	#5 @ 10"	35.05	#4 @ 10"	34.08	#4 @ 10"	33.42	#4 @ 10"	32.92	#4 @ 10"	32.54	#4 @ 10"	32.23	#4 @ 10"	31.97	#4 @ 10"	31.77	#4 @ 10"	31.59	#4 @ 10"	31.44		
	3	#5 @ 10"	38.23	#5 @ 10"	36.80	#4 @ 10"	35.85	#4 @ 10"	35.18	#4 @ 10"	34.67	#4 @ 10"	34.28	#4 @ 10"	33.97	#4 @ 10"	33.70	#4 @ 10"	33.50	#4 @ 10"	33.32	#4 @ 10"	33.17		
	4	#5 @ 10"	40.09	#5 @ 10"	38.61	#4 @ 10"	37.64	#4 @ 10"	36.95	#4 @ 10"	36.44	#4 @ 10"	36.04	#4 @ 10"	35.72	#4 @ 10"	35.45	#4 @ 10"	35.25	#4 @ 10"	35.07	#4 @ 10"	34.91		
	5	#5 @ 10"	41.99	#5 @ 10"	40.47	#4 @ 10"	39.47	#4 @ 10"	38.76	#4 @ 10"	38.24	#4 @ 10"	37.83	#4 @ 10"	37.50	#4 @ 10"	37.23	#4 @ 10"	37.02	#4 @ 10"	36.84	#4 @ 10"	36.68		
	6	#5 @ 10"	43.97	#5 @ 10"	42.40	#4 @ 10"	41.36	#4 @ 10"	40.64	#4 @ 10"	40.10	#4 @ 10"	39.68	#4 @ 10"	39.35	#4 @ 10"	39.07	#4 @ 10"	38.83	#4 @ 10"	38.63	#4 @ 10"	38.47		
	7	#5 @ 10"	46.19	#5 @ 10"	44.56	#4 @ 10"	43.49	#4 @ 10"	42.74	#4 @ 10"	42.18	#4 @ 10"	41.75	#4 @ 10"	41.41	#4 @ 10"	41.13	#4 @ 9"	43.65	#5 @ 10"	45.45	#5 @ 10"	45.28		
7	2	#5 @ 10"	34.90	#5 @ 10"	33.44	#4 @ 10"	32.47	#4 @ 10"	31.78	#4 @ 10"	31.27	#4 @ 10"	30.86	#4 @ 10"	30.54	#4 @ 10"	30.27	#4 @ 10"	30.06	#4 @ 9"	29.88	#4 @ 9"	29.72		
	3	#5 @ 10"	36.73	#5 @ 10"	35.23	#4 @ 10"	34.23	#4 @ 10"	33.53	#4 @ 10"	33.00	#4 @ 10"	32.58	#4 @ 10"	32.26	#4 @ 10"	31.99	#4 @ 10"	31.78	#4 @ 9"	31.59	#4 @ 9"	31.43		
	4	#5 @ 10"	38.59	#5 @ 10"	37.04	#4 @ 10"	36.01	#4 @ 10"	35.29	#4 @ 10"	34.75	#4 @ 10"	34.33	#4 @ 10"	33.99	#4 @ 10"	33.71	#4 @ 10"	33.50	#4 @ 10"	33.31	#4 @ 10"	33.14		
	5	#5 @ 10"	40.48	#5 @ 10"	38.86	#4 @ 10"	37.80	#4 @ 10"	37.06	#4 @ 10"	36.50	#4 @ 10"	36.07	#4 @ 10"	35.73	#4 @ 10"	35.44	#4 @ 10"	35.22	#4 @ 10"	35.03	#4 @ 10"	34.86		
	6	#5 @ 10"	42.39	#5 @ 10"	40.71	#4 @ 10"	39.61	#4 @ 10"	38.84	#4 @ 10"	38.26	#4 @ 10"	37.82	#4 @ 10"	37.47	#4 @ 10"	37.17	#4 @ 10"	36.95	#4 @ 10"	36.75	#4 @ 10"	36.58		

EXAMPLE:

SELECT THE c-BARS SIZE, SPACING AND STEEL QUANTITY FOR A 25.0 FEET LONG WINGWALL WITH m = 13.8 FT. AND k = 6.3 FT.

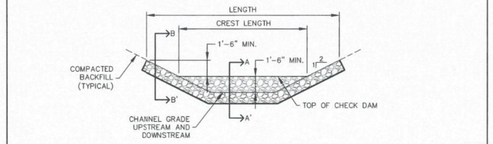
SOLUTION:

1. DETERMINE WINGWALL LENGTH IN MULTIPLE OF m:
   L / m = 25.0 / 13.8 = 2.12
   L = (2.12 x m), USE L = (2.25 x m)
2. ROUND TO NEAREST WHOLE NUMBER FOR m AND k:
   m = 13.8 FT., USE m = 12.0 FT.
   k = 6.3 FT., USE k = 6.0 FT.
3. DETERMINE c-BARS BY USING THE TABLE:
   L ≤ (2.25 x m)
   m = 12
   k = 6
   c-BARS @ 6 @ 10"
   REINF. STEEL = 60.60 LB / LF
4. DETERMINE REINFORCING STEEL QUANTITY OF WHOLE WINGWALL:
   REINFORCING STEEL QUANTITY = 25.0 x 60.60 = 1,515 LB.

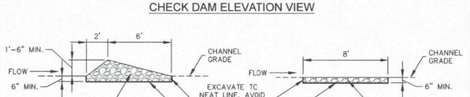
NOTES: 1. THE GEOCOMPOSITE SHALL BE SECURED TO THE WALL TO PREVENT MOVEMENT DURING BACKFILLING.

2. COST OF GEOCOMPOSITE DRAIN AND CONCRETE SEALER SHALL BE INCLUDED IN THE WORK.

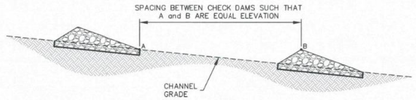
Computer File Information		Sheet Revisions		Colorado Department of Transportation		STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments	2829 West Howard Place	WINGWALLS FOR PIPE OR BOX CULVERTS	M-601-20
Designer Initials: JBK	(REV)			CDOT HQ



CHECK DAM ELEVATION VIEW



SECTION A-A' SECTION B-B'



PROFILE

INSTALLATION NOTES

1. CHECK DAMS SHOULD BE INSTALLED BEFORE UPSTREAM LAND DISTURBING ACTIVITIES.
2. RIPRAP PAD SHOULD BE TRENCHED INTO GROUND BY A MINIMUM OF 6".

MAINTENANCE NOTES

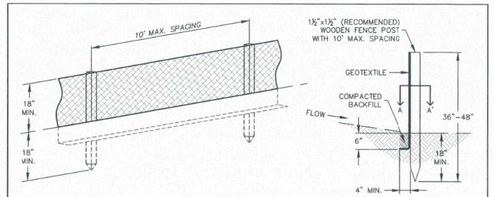
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ THE HEIGHT OF THE CHECK DAM CREST.
3. CHECK DAMS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER CHECK DAMS ARE REMOVED IF REMOVAL IS REQUIRED.

CD

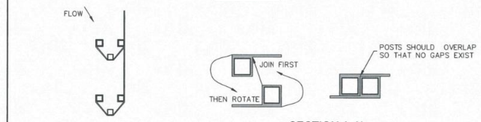
STORMWATER ENTERPRISE — CHECK DAM

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-CD



SILT FENCE



J-HOOK INSTALLATION SECTION A-A'

INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2'-5" AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
2. COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
3. SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
4. FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 3" APART.
5. THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SIL" FENCE INSTALLATION DEVICE.
6. INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN HEIGHT OF THE SILT FENCE.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.

SF

STORMWATER ENTERPRISE — SILT FENCE

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-SF

SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNCESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEEDED WHENEVER POSSIBLE
   - SEED DEPTH MUST BE ¼ TO ½ INCHES WHEN DRILL-SEEDING IS USED
3. BROADCAST SEEDING OR HYDRO-SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
   - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDING
   - BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
   - HAY OR STRAW MULCH
     - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
     - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
     - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
   - HYDRAULIC MULCHING
     - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
     - IF HYDRO-SEEDING IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
     - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
   - EROSION CONTROL BLANKET
     - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.

SM

STORMWATER ENTERPRISE — SEEDING & MULCHING

APPROVED: SWENT MANAGER

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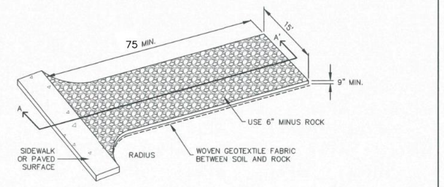
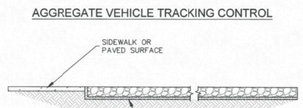
10/7/19	8/19/2020	900-SM



AGGREGATE VEHICLE TRACKING CONTROL



SECTION A-A'

INSTALLATION NOTES

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

MAINTENANCE NOTES

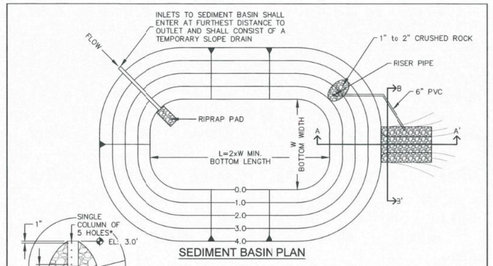
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY, BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. ROUGHEN, REPLACE AND/OR ADD ROCK AS NEEDED TO MAINTAIN CONSISTENT DEPTH AND TO PREVENT SEDIMENT TRACKING ONTO ADJACENT STREET.
4. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.

VTC

STORMWATER ENTERPRISE — VEHICLE TRACKING CONTROL

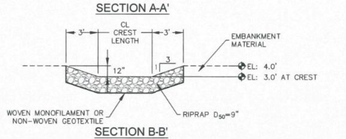
APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-VTC



SEDIMENT BASIN PLAN

SECTION A-A'



SECTION B-B'

TSB

STORMWATER ENTERPRISE — TEMPORARY SEDIMENT BASIN

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-TSB-1

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	12½"	2	9/32
2	21	3	13/64
3	28	5	7/32
4	33½	6	9/64
5	38½	8	21/32
6	43	9	23/32
7	47¼	11	25/32
8	51	12	27/32
9	55	13	7/8
10	58¾	15	15/16
11	61	16	29/32
12	64	18	1
13	67½	19	1 1/32
14	70½	21	1 1/8
15	73¾	22	1 1/16

INSTALLATION NOTES

1. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
2. 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.
3. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698.
4. PIPE SCHEDULE 40 OR GREATER SHALL BE USED.
5. 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. DESIGN CALCULATIONS MUST BE APPROVED PRIOR TO IMPLEMENTATION.

MAINTENANCE NOTES

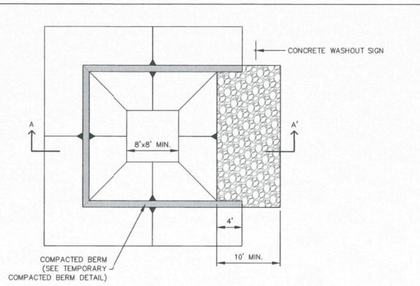
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.

TSB

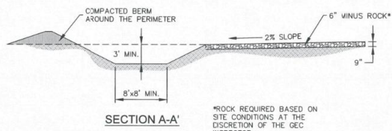
STORMWATER ENTERPRISE — TEMPORARY SEDIMENT BASIN

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-TSB-2



CONCRETE WASHOUT AREA PLAN



SECTION A-A'

*ROCK REQUIRED BASED ON SITE CONDITIONS AT THE DISCRETION OF THE GEC INSPECTOR

CWA

STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-CWA-1

INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF CONCRETE WASHOUT AREA
2. LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'.
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF ⅓ THE HEIGHT OF THE CONCRETE WASH AREA.
3. 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.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.

CWA

STORMWATER ENTERPRISE — CONCRETE WASHOUT AREA

APPROVED: SWENT MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-CWA-2

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

ENGINEER'S STATEMENT

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

RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED RYAN E. BURNS 0054412 PROFESSIONAL ENGINEER

DATE

PREPARED FOR
SCOTT BELKNAP
3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109
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SCOTT.BELKNAP@YAHOO.COM

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

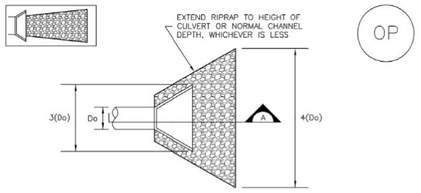
H-SCALE	N/A
V-SCALE	N/A
DATE	05/15/23
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	

VOLLMER RV STORAGE

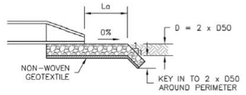
GEC DETAILS

SHEET 12 OF 13

JOB NO. 25251.00



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE

PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	10 13	4 6
18	10 20 30 40	10 16 23 26	6 9 12 16
24	30 40 50 60	16 26 26 30	9 9 12 16

OP-1. TEMPORARY OUTLET PROTECTION

TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF OUTLET PROTECTION.
   -DIMENSIONS OF OUTLET PROTECTION.

2. DETAIL IS INTENDED FOR PIPES WITH SLOPE ≤ 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.

3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

TEMPORARY OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES

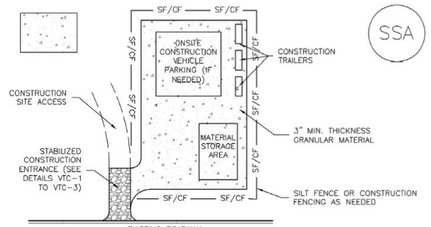
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

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.

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.

(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA 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. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA MAINTENANCE NOTES

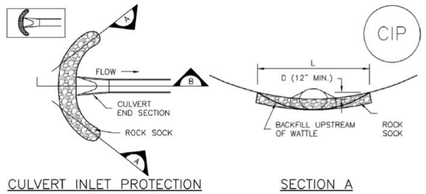
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

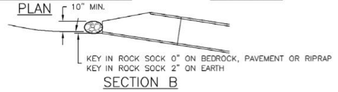
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)



CULVERT INLET PROTECTION PLAN

SECTION A



SECTION B

CIP-1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION 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. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, 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.

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF INLET PROTECTION.
   -TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

3. 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.

INLET PROTECTION 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. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

include outlet protection standard detail

Outlet details have been provided

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

ENGINEER'S STATEMENT

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

RYAN E. BURNS, P.E.
COLORADO P.E. 0054412
FOR AND ON BEHALF OF JR ENGINEERING, LLC

0054412 — DATE

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

PREPARED FOR
SCOTT BELKNAP
3603 FIRST LIGHT DRIVE
CASTLE ROCK, CO 80109
(719)-322-3556
SCOTT.BELKNAP@YAHOO.COM

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H-SCALE	N/A	DESIGNED BY	APL
V-SCALE	N/A	DRAWN BY	APL
DATE	05/15/23	CHECKED BY	

VOLLMER RV STORAGE

GEC DETAILS

SHEET 13 OF 13

JOB NO. 25251.00

X:\25\25000.all\25251.00\Drawings\Sheet Dwgs\GEC\25251.00GEC-DT01.dwg, DT03, 5/15/2023 12:31:58 PM, CS

V3_Grading and Erosion Control Plan.pdf Markup Summary

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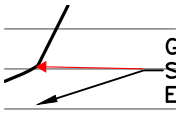

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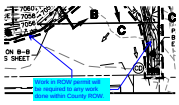
Callout (14)



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Date: 6/6/2023 3:25:23 PM
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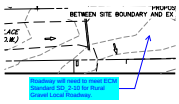
Work in ROW permit will be required to any work done within County ROW.



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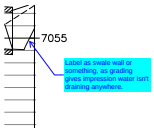
Roadway will need to meet ECM Standard SD_2-10 for Rural Gravel Local Roadway.



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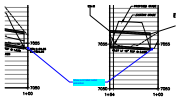
Label as swale wall or something, as grading gives impression water isn't draining anywhere.



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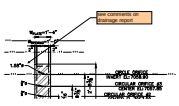
Show and label outlet protection



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Page Label: [7] 7 PD02
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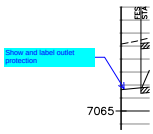
see comments on drainage report



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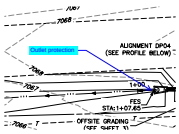
Show and label outlet protection



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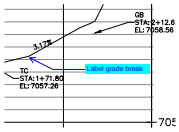
Outlet protection



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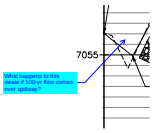
Label grade break



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Page Label: 1
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What happens to this swale if 100-yr flow comes over spillway?

Subject: Callout
Page Label: [4] 4 DP_01_02
Author: CDurham
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Color:
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Space:

Grading plan does not indicate an elevation 7068 on this side of area inlet

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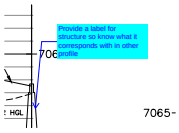

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Provide a label for structure so know what it corresponds with in other profile

Subject: Callout
Page Label: [4] 4 DP_01_02
Author: CDurham
Date: 6/7/2023 11:29:14 AM
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Color:
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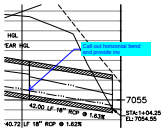
Space:

Include sizes of manhole



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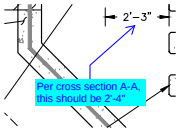
Call out horizontal bend and provide inv



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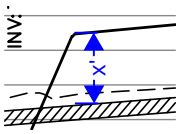
Per cross section A-A, this should be 2'-4"

Dimension (1)



Subject: Dimension
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/6/2023 2:52:39 PM
Status:
Color:
Layer:
Space:

x'

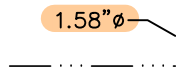
Engineer (1)

Subject: Engineer
Page Label: 1
Author: dotprete
Date: 6/4/2023 4:26:00 PM
Status:
Color:
Layer:
Space:

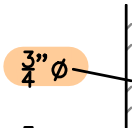
Per DCMv1 11.3.3, adjust pond design to include a min. width of 12ft at top of embankment. unresolved.

A Deviation request must be submitted and approved for anything less than 12 ft

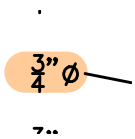
Highlight (4)



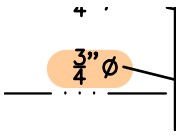
Subject: Highlight
Page Label: [7] 7 PD02
Author: dotprete
Date: 6/6/2023 3:57:25 PM
Status:
Color:
Layer:
Space:



Subject: Highlight
Page Label: [7] 7 PD02
Author: dotprete
Date: 6/6/2023 3:57:27 PM
Status:
Color:
Layer:
Space:

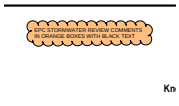


Subject: Highlight
Page Label: [7] 7 PD02
Author: dotprete
Date: 6/6/2023 3:57:28 PM
Status:
Color:
Layer:
Space:



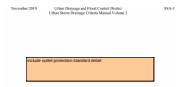
Subject: Highlight
Page Label: [7] 7 PD02
Author: dotprete
Date: 6/6/2023 3:57:30 PM
Status:
Color:
Layer:
Space:

Stormwater Comments Color (1)



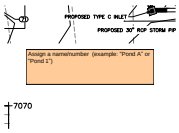
Subject: Stormwater Comments Color
Page Label: [1] 1 CV01
Author: dotprete
Date: 6/6/2023 4:07:59 PM
Status:
Color:
Layer:
Space:

Text Box (12)



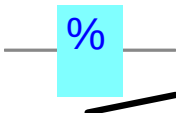
Subject: Text Box
Page Label: 1
Author: dotprete
Date: 6/6/2023 4:16:44 PM
Status:
Color:
Layer:
Space:

include outlet protection standard detail



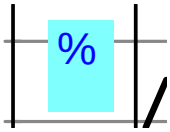
Subject: Text Box
Page Label: 1
Author: dotprete
Date: 6/6/2023 4:18:39 PM
Status:
Color:
Layer:
Space:

Assign a name/number (example: “Pond A” or “Pond 1”)



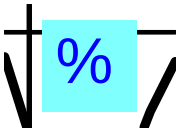
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/6/2023 4:23:04 PM
Status:
Color:
Layer:
Space:

%



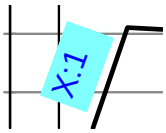
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/6/2023 4:23:11 PM
Status:
Color:
Layer:
Space:

%



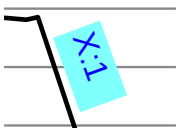
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/7/2023 11:42:52 AM
Status:
Color:
Layer:
Space:

%



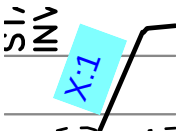
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/7/2023 11:44:47 AM
Status:
Color:
Layer:
Space:

X:1



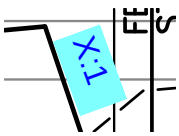
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/7/2023 11:44:54 AM
Status:
Color:
Layer:
Space:

X:1



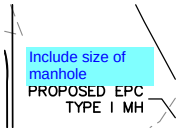
Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/7/2023 11:45:05 AM
Status:
Color:
Layer:
Space:

X:1



Subject: Text Box
Page Label: [5] 5 Pond Outfall _ DP_03_04
Author: CDurham
Date: 6/7/2023 11:45:19 AM
Status:
Color:
Layer:
Space:

X:1

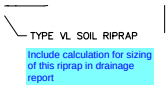


Subject: Text Box
Page Label: 1
Author: CDurham
Date: 6/7/2023 11:46:36 AM
Status:
Color:
Layer:
Space:

Include size of manhole

Subject: Text Box
Page Label: [6] 6 PD01
Author: CDurham
Date: 6/7/2023 11:49:29 AM
Status:
Color:
Layer:
Space:

11



Subject: Text Box
Page Label: [6] 6 PD01
Author: CDurham
Date: 6/7/2023 11:50:31 AM
Status:
Color:
Layer:
Space:

Include calculation for sizing of this riprap in drainage report