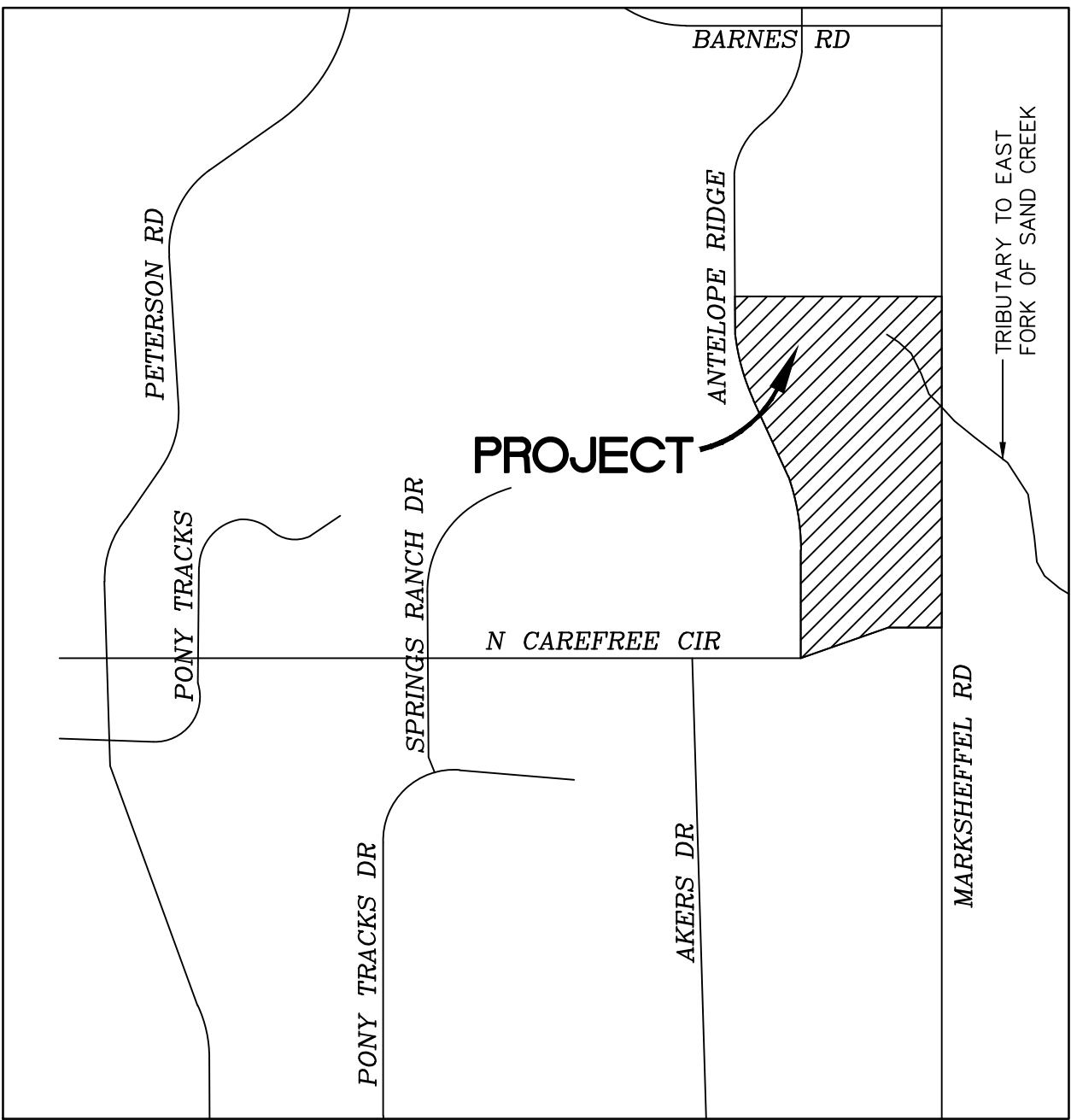


WINDERMERE  
EROSION CONTROL AND STORMWATER QUALITY PLAN  
E 1/2 OF SECTION 29,  
T13S, R65W OF THE 6TH P.M.  
EL PASO COUNTY, COLORADO



VICINITY MAP  
NOT TO SCALE



SHEET INDEX

EC01	COVER SHEET
EC02	NOTES
EC03	EROSION CONTROL AND STORMWATER QUALITY PLAN
EC04	EROSION CONTROL DETAILS
EC05	EROSION CONTROL DETAILS
EC06	EROSION CONTROL DETAILS
PD-1	NORTH POND OUTLET STRUCTURE DETAILS
PD-2	SOUTH POND OUTLET STRUCTURE DETAILS

NOTES

- 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 CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.
- AT LEAST 10 DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF THE CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL 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

DESIGN ENGINEER'S STATEMENT

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

TIM D. MCCONNELL  
P.E.# 33797  
3-19-21  
DATE

OWNER'S STATEMENT

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JEFF MARK  
3-19-21  
DATE

EL PASO COUNTY

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

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, 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 YEAR FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JENNIFER IRVINE, P.E.  
COUNTY ENGINEER  
DATE

ENGINEER OF RECORD

THE STORMWATER MANAGEMENT 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 AND STATE FOR STORMWATER MANAGEMENT PLANS.

ENGINEER OF RECORD SIGNATURE  
3-19-21  
DATE

REVIEW ENGINEER

THE STORMWATER MANAGEMENT PLAN WAS REVIEWED AND FOUND TO MEET THE CHECKLIST REQUIREMENTS EXCEPT WHERE OTHERWISE NOTED OR ALLOWED BY AN APPROVED DEVIATION REQUEST.

REVIEW ENGINEER  
DATE

COUNTY FILE NO.:

AGENCY CONTACTS

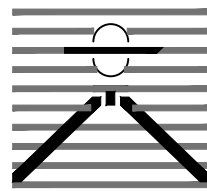
COUNTY	EL PASO COUNTY PLANNING & COMMUNITY DEVELOPMENT KARI PARSONS, PROJECT MANAGER/PLANNER II 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 (719) 520-6300	ELECTRIC	MOUNTAIN VIEW ELECTRIC ASSOCIATION LES ULFERS 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
FIRE	CIMARRON HILLS FIRE DEPARTMENT STEVE CONNER, FIRE CHIEF 1835 TUSKEGEE PL COLORADO SPRINGS, CO 80915 (719)591-0960	GAS	COLORADO SPRINGS UTILITIES TODD STURTEVANT 1521 HANCOCK EXPRESSWAY COLORADO SPRINGS, CO 80947 (719) 668-3556
WATER	CHEROKEE METROPOLITAN DISTRICT JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER 6250 PALMER PARK BLVD COLORADO SPRINGS, CO 80915 (719) 597-5080	TELEPHONE	CENTURY LINK PATTY MOORE (719) 636-6096 (LOCATORS) (719) 597-8418 AT&T (LOCATORS) (719) 635-3674
WASTEWATER	CHEROKEE METROPOLITAN DISTRICT JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER 6250 PALMER PARK BLVD COLORADO SPRINGS, CO 80915 (719) 597-5080	CABLE	COMCAST DALE STEWART 213 N. UNION BLVD COLORADO SPRINGS, CO 80909 (719) 442-4733

ESTIMATED COST OF TEMPORARY + PERMANENT BMPs INCLUDING INSTALLATION  
AND MAINTENANCE UNTIL FINAL STABILIZATION (FINAL + INTERIM STAGE)

Description	Quantity	Units	Unit Cost	Total	(with Pre-Plat Construction)	
					% Complete	Remaining
<b>SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)</b>						
* Earthwork						
less than 1,000; \$5,300 min		CY	\$ 8.00	= \$ -		\$ -
1,000-5,000; \$8,000 min		CY	\$ 6.00	= \$ -		\$ -
5,001-20,000; \$30,000 min		CY	\$ 5.00	= \$ -		\$ -
20,001-50,000; \$100,000 min		CY	\$ 3.50	= \$ -		\$ -
50,001-200,000; \$175,000 min	140,000	CY	\$ 2.50	= \$ 350,000.00		\$ 350,000.00
greater than 200,000; \$500,000 min		CY	\$ 2.00	= \$ -		\$ -
* Permanent Seeding (inc. noxious weed mgmnt.)		AC	\$ 800.00	= \$ -		\$ -
* Mulching		AC	\$ 750.00	= \$ -		\$ -
* Permanent Erosion Control Blanket		SY	\$ 6.00	= \$ -		\$ -
* Permanent Pond/BMP Construction		CY	\$ 20.00	= \$ -		\$ -
* Permanent Pond/BMP (Spillway)	2	EA	\$ 15,000.00	= \$ 30,000.00		\$ 30,000.00
* Permanent Pond/BMP (Outlet Structure)	2	EA	\$ 12,000.00	= \$ 24,000.00		\$ 24,000.00
Safety Fence		LF	\$ 3.00	= \$ -		\$ -
Temporary Erosion Control Blanket		SY	\$ 3.00	= \$ -		\$ -
Vehicle Tracking Control		EA	\$ 2,370.00	= \$ 4,740.00		\$ 4,740.00
Silt Fence	3,470	LF	\$ 2.50	= \$ 8,675.00		\$ 8,675.00
Temporary Seeding	52	AC	\$ 628.00	= \$ 32,656.00		\$ 32,656.00
Temporary Mulch	52	AC	\$ 750.00	= \$ 39,000.00		\$ 39,000.00
Erosion Bales	90	EA	\$ 25.00	= \$ 2,250.00		\$ 2,250.00
Erosion Logs/Straw Waddle		LF	\$ 5.00	= \$ -		\$ -
Rock Check Dams		EA	\$ 500.00	= \$ -		\$ -
Inlet Protection	3	EA	\$ 167.00	= \$ 501.00		\$ 501.00
Sediment Basin	3	EA	\$ 1,762.00	= \$ 5,286.00		\$ 5,286.00
Concrete Washout Basin	1	EA	\$ 900.00	= \$ 900.00		\$ 900.00
Riprap rundown	1	EA	\$ 10,000.00	= \$ 10,000.00		\$ 10,000.00
[Insert items not listed but part of construction plans]				= \$ -		\$ -
MAINTENANCE (35% of Construction BMPs)				= \$ 36,402.80		\$ 36,402.80
Section 1 Subtotal				= \$544,410.80		\$ 544,410.80

\* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED).

PREPARED BY:



DREXEL, BARRELL & CO.  
Engineers • Surveyors  
3 SOUTH 7TH STREET  
COLORADO SPGS, COLORADO 80905  
CONTACT: TIM D. MCCONNELL, P.E.  
(719)260-0887  
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:



212 N. WAHSATCH AVE., #301  
COLORADO SPRINGS, CO 80903  
(719) 635-3200  
CONTACT: JEFF MARK

WINDERMERE  
GRADING & EROSION CONTROL  
N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	3/19/21
FINAL CONDITION	7/9/21

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV

PREPARED UNDER MY DIRECT  
SUPERVISION FOR AND ON  
BEHALF OF  
DREXEL, BARRELL & CO.

DRAWING SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

COVER SHEET

PROJECT NO. 21187-01CSCV  
DRAWING NO.

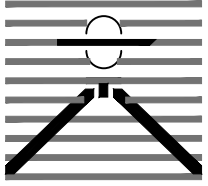
EC01

SHEET: 1 OF 9

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS


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 TO 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. DURING CONSTRUCTION THE SMWP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, 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 MAY CONTRIBUTE POLLUTANTS TO STORMWATER. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED 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 IS 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 PRIOR TO IMPLEMENTATION.
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. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE STABILIZED.
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 PLAN 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 DEFINED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE HYDROLOGY OR HYDRAULICS OF A PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
10. ANY EARTH DISTURBANCE 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 INFEASIBLE.
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 SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.
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 RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUT SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY.
14. DEWATERING OPERATIONS: UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT MAY NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF.
15. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.
16. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER 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. BMP'S MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
17. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
18. 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.
19. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM 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 CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
22. BULK STORAGE OF PETROLEUM PRODUCTS OR OTHER LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL HAVE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCH FLOW LINE.
24. INDIVIDUALS 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 INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG ENGINEERS, (10-26-2020) AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 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  
WQCD – PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT

PREPARED BY:



DREXEL, BARRELL & CO.  
Engineers • Surveyors  
3 SOUTH 7TH STREET  
COLORADO SPGS, COLORADO 80905  
CONTACT: TIM D. McCONNELL, P.E.  
(719)260-0887  
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:

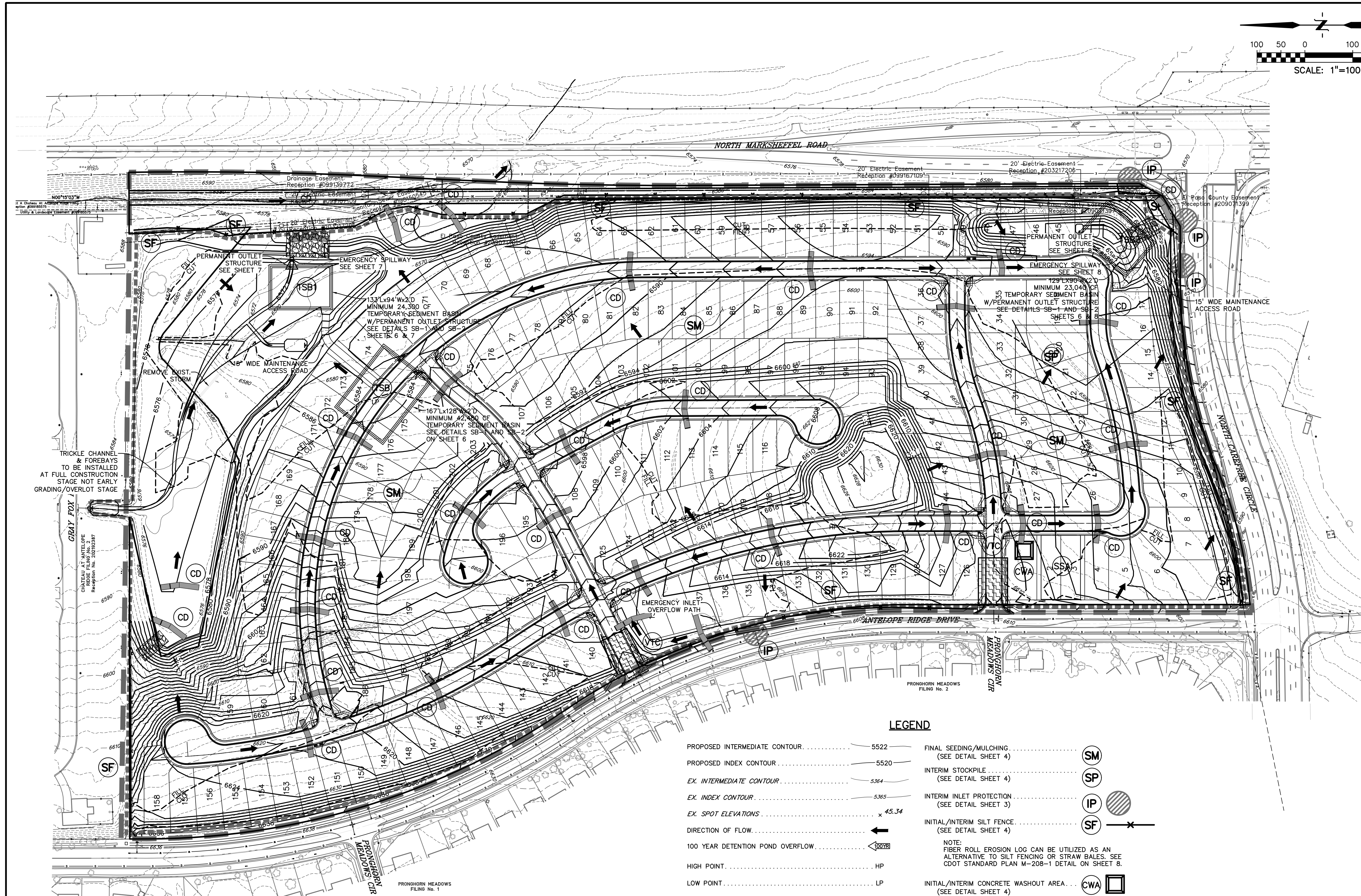









THE  
LANDHUIS  
COMPANY  
  
212 N. WAHSATCH AVE., #301  
COLORADO SPRINGS, CO 80903  
(719) 635-3200  
CONTACT: JEFF MARK

WINDERMERE  
GRADING & EROSION CONTROL  
N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	3/19/21
FINAL CONDITION	7/9/21
DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.	
DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A	
NOTES	
PROJECT NO. 21187-01CSCV	
DRAWING NO.	
EC02	
SHEET: 2 OF 9	



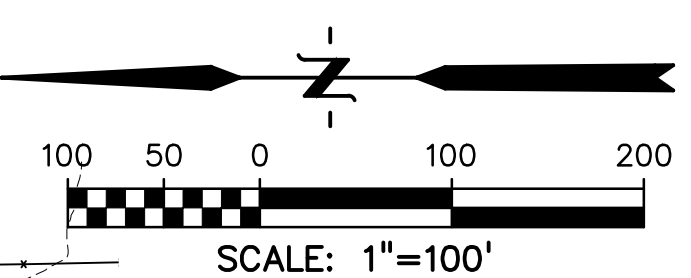
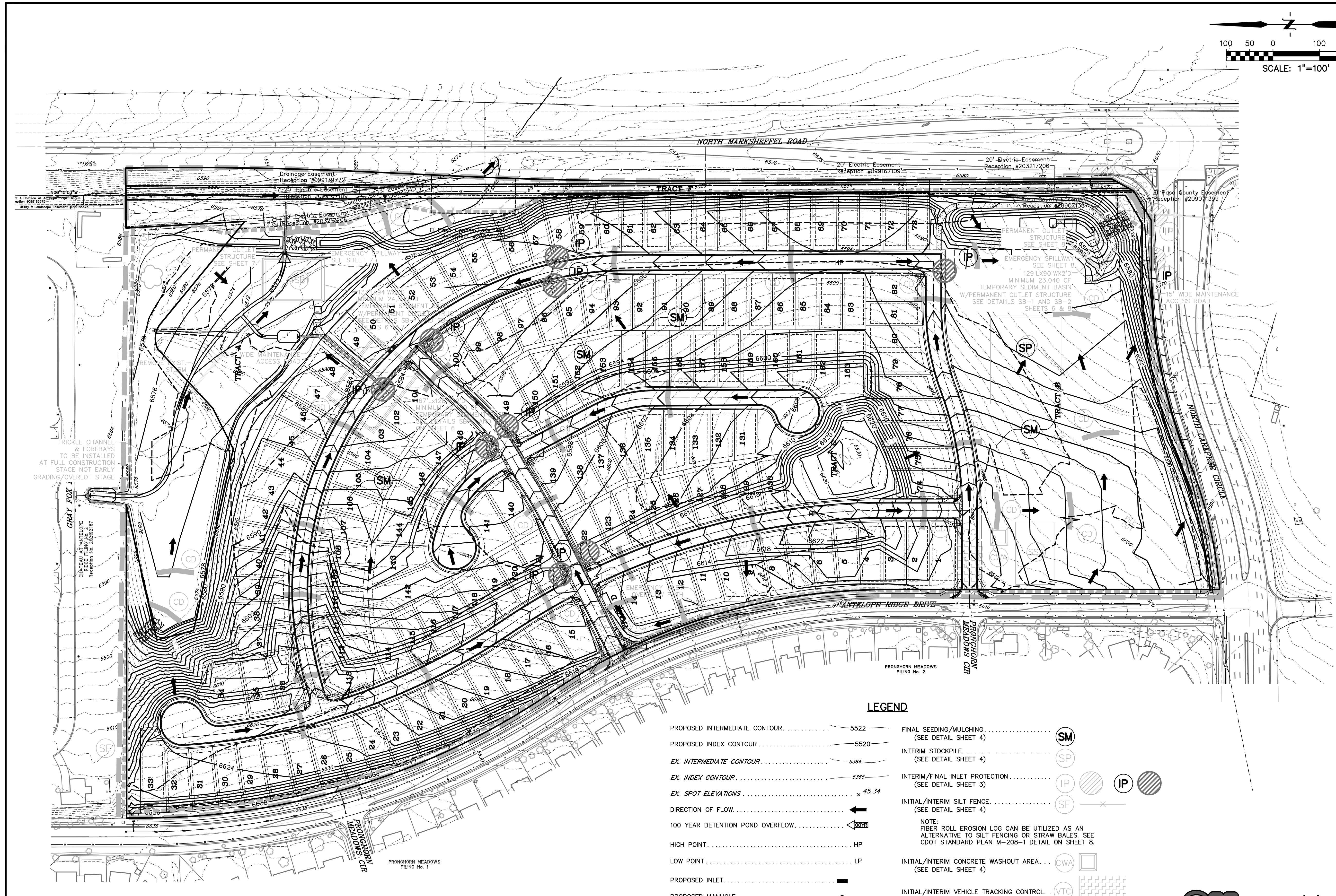


PROPOSED INTERMEDIATE CONTOUR .....	5522	FINAL SEEDING/MULCHING .....	SM (SEE DETAIL SHEET 4)
PROPOSED INDEX CONTOUR .....	5520	INTERIM STOCKPILE .....	SP (SEE DETAIL SHEET 4)
EX. INTERMEDIATE CONTOUR .....	5364	INTERIM INLET PROTECTION .....	IP (SEE DETAIL SHEET 3)
EX. INDEX CONTOUR .....	5365	INITIAL/INTERIM SILT FENCE .....	SF (SEE DETAIL SHEET 4)
EX. SPOT ELEVATIONS .....	x 45.34	NOTE: FIBER ROLL EROSION LOG CAN BE UTILIZED AS AN ALTERNATIVE TO SILT FENCING OR STRAW BALES. SEE CDOT STANDARD PLAN M-208-1 DETAIL ON SHEET 8.	
DIRECTION OF FLOW .....		INITIAL/INTERIM CONCRETE WASHOUT AREA .....	CWA (SEE DETAIL SHEET 4)
100 YEAR DETENTION POND OVERFLOW .....		INITIAL/INTERIM VEHICLE TRACKING CONTROL .....	VTC (SEE DETAIL SHEET 3)
HIGH POINT .....	HP	INITIAL/INTERIM STRAW BALE CHECK DAM .....	CD (SEE DETAIL SHEET 3)
LOW POINT .....	LP	INITIAL/INTERIM STABILIZED STAGING AREA .....	SSA (SEE DETAIL SHEET 4)
PROPOSED INLET .....		INITIAL/INTERIM TEMPORARY SEDIMENT BASIN .....	TSB (SEE DETAIL SHEET 5)
PROPOSED MANHOLE .....			
PROJECT BOUNDARY .....			
LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY .....			
CUT/FILL LINE .....			

COUNTY FILE NO.:

SHEET: 3 OF 9





- NOTES:
1. WASTE DISPOSAL BIN LOCATIONS ARE TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
  2. ONSITE LOCATION OF THE SWMP IS TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
  3. THE NEED FOR DEWATERING IS NOT ANTICIPATED. IN THE EVENT THAT DEWATERING BECOMES NECESSARY THE CONTRACTOR, WITH INPUT FROM THE COUNTY STORMWATER INSPECTOR, WILL DESIGN THE LOCATIONS OF DIVERSION, PUMP & DISCHARGES.

- LEGEND**
- |   |           |  |                      |     |
|---|-----------|--|----------------------|-----|
| PROPOSED INTERMEDIATE CONTOUR.....                    | 5522      | FINAL SEEDING/MULCHING.....  | (SEE DETAIL SHEET 4) | SM  |
| PROPOSED INDEX CONTOUR.....                           | 5520      | INTERIM STOCKPILE.....   | (SEE DETAIL SHEET 4) | SP  |
| EX. INTERMEDIATE CONTOUR.....                         | 5364      | INTERIM/FINAL INLET PROTECTION.....  | (SEE DETAIL SHEET 3) | IP  |
| EX. INDEX CONTOUR.....                                | 5365      | INITIAL/INTERIM SILT FENCE.....  | (SEE DETAIL SHEET 4) | SF  |
| EX. SPOT ELEVATIONS.....                              | x 45.34   | NOTE:  |                      |     |
| DIRECTION OF FLOW.....                                | ←         | FIBER ROLL EROSION LOG CAN BE UTILIZED AS AN ALTERNATIVE TO SILT FENCING OR STRAW BALES. SEE CDOT STANDARD PLAN M-208-1 DETAIL ON SHEET 8. |                      |     |
| 100 YEAR DETENTION POND OVERFLOW.....                 | ← 100YR   | INITIAL/INTERIM CONCRETE WASHOUT AREA...   | (SEE DETAIL SHEET 4) | CWA |
| HIGH POINT.....                                       | HP        | INITIAL/INTERIM VEHICLE TRACKING CONTROL.....  | (SEE DETAIL SHEET 3) | VTC |
| LOW POINT.....  | LP        | INITIAL/INTERIM STRAW BALE CHECK DAM.....  | (SEE DETAIL SHEET 3) | CD  |
| PROPOSED INLET.....                                   | ■         | INITIAL/INTERIM STABILIZED STAGING AREA.....   | (SEE DETAIL SHEET 4) | SSA |
| PROPOSED MANHOLE.....                                 | ●         | INITIAL/INTERIM TEMPORARY SEDIMENT BASIN.....  | (SEE DETAIL SHEET 5) | TSB |
| PROJECT BOUNDARY.....                                 | — — — — — |  |                      |     |
| LIMITS OF DISTURBANCE/CONSTRUCTION SITE BOUNDARY..... | — — — — — |  |                      |     |
| CUT/FILL LINE.....                                    | — — — — — |  |                      |     |

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

CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

PREPARED BY:

**DREXEL, BARRELL & CO.**  
Engineers • Surveyors  
3 SOUTH 7TH STREET  
COLORADO SPGS, COLORADO 80905  
CONTACT: TIM D. McCONNELL, P.E.  
(719)260-0887  
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:

**THE LANDHUIS COMPANY**  
212 N. WAHSATCH AVE., #301  
COLORADO SPRINGS, CO 80903  
(719) 635-3200  
CONTACT: JEFF MARK

**WINDERMERE**  
**GRADING & EROSION CONTROL**  
N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	3/19/21
FINAL CONDITION	7/9/21

DESIGNED BY: GES  
DRAWN BY: GES  
CHECKED BY: TDM  
FILE NAME: 21187-01EC1

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF  
**DREXEL, BARRELL & CO.**

DRAWING SCALE:  
HORIZONTAL: 1" = 100'  
VERTICAL: N/A

**FINAL**  
**EROSION CONTROL**  
**PLAN**

PROJECT NO. 21187-01CSCV  
DRAWING NO.

**EC04**

SHEET: 4 OF 9

COUNTY FILE NO.:



PREPARED BY:



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GRADING & EROSION CONTROL

N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	3/19/21
FINAL CONDITION	7/9/21
DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECDT
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.	

DRAWING SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

EROSION CONTROL DETAILS

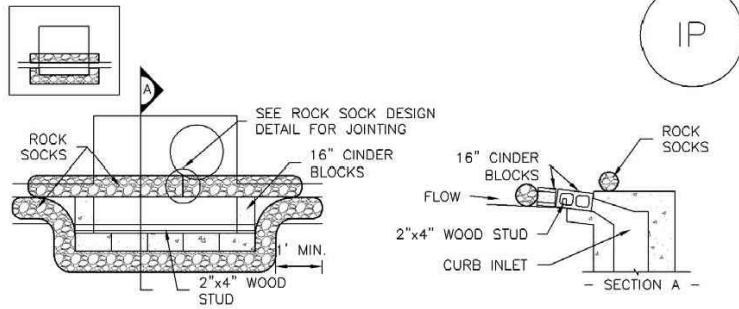
PROJECT NO. 21187-01CSCV  
DRAWING NO.

EC04

SHEET: 5 OF 9

SC-6

Inlet Protection (IP)



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

**BLOCK AND ROCK SOCK INLET PROTECTION INSTALLATION NOTES**

- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
- GRAVEL BARS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.

**IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION**

**CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES**

- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
- SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 3 FEET APART.
- AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

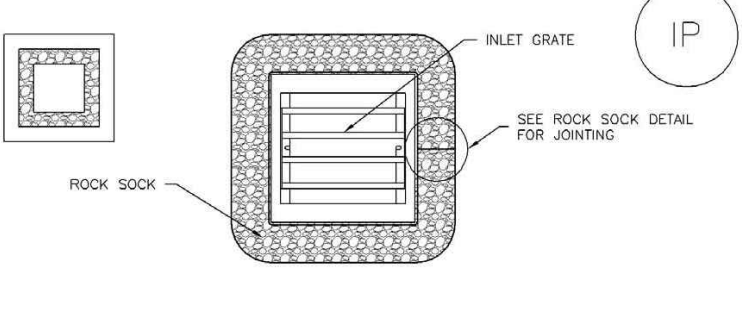
IP-4

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

August 2013

Inlet Protection (IP)

SC-6



**IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION**

**ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES**

- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- STRAW MATS/SEGMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEGMENT CONTROL LOG DETAIL.

**IP-4. SILT FENCE FOR SUMP INLET PROTECTION**

**SILT FENCE INLET PROTECTION INSTALLATION NOTES**

- SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
- STRAW MATS/SEGMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEGMENT CONTROL LOG DETAIL.

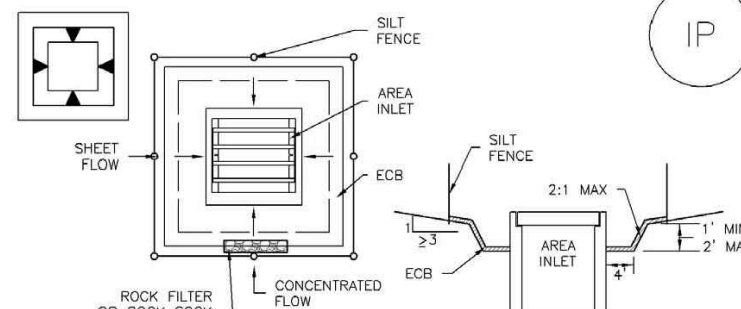
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Urban Storm Drainage Criteria Manual Volume 3

IP-5

SC-6

Inlet Protection (IP)



**IP-5. OVEREXCAVATION INLET PROTECTION**

**OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES**

- THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONCENTRIC SURFACE AREA.
- WHEN USING FOR CONCENTRIC FLOW, SHAPE BARS IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
- SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.

**IP-6. STRAW BALE FOR SUMP INLET PROTECTION**

**STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES**

- SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY MEETING ONE ANOTHER.

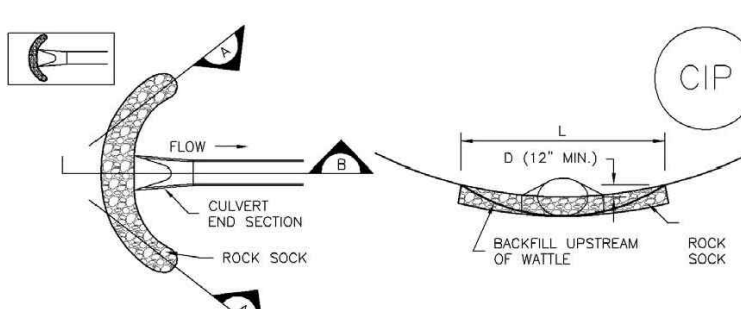
IP-6

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

August 2013

Inlet Protection (IP)

SC-6



**CULVERT INLET PROTECTION**

**SECTION A**

**SECTION B**

**CIP-1. CULVERT INLET PROTECTION**

**CULVERT INLET PROTECTION INSTALLATION NOTES**

- SEE PLAN VIEW FOR -LOCATION OF CULVERT INLET PROTECTION.
- SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

**CULVERT INLET PROTECTION MAINTENANCE NOTES**

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS  $\frac{1}{2}$  THE HEIGHT OF THE ROCK SOCK.
- CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM URBAN DRAINAGE AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

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Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

IP-7

SC-6

Inlet Protection (IP)

**GENERAL INLET PROTECTION INSTALLATION NOTES**

- SEE PLAN VIEW FOR -LOCATION OF INLET PROTECTION. -TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
- INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR FINING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
- MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UFGCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

**INLET PROTECTION MAINTENANCE NOTES**

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS. TYPICALLY WHEN STORAGE VOLUME REACHES SIZE OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR  $\frac{1}{2}$  OF THE HEIGHT FOR STRAW BALES.
- 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.
- WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDS AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PUEBLO, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UFGCD 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 CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UFGCD 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.

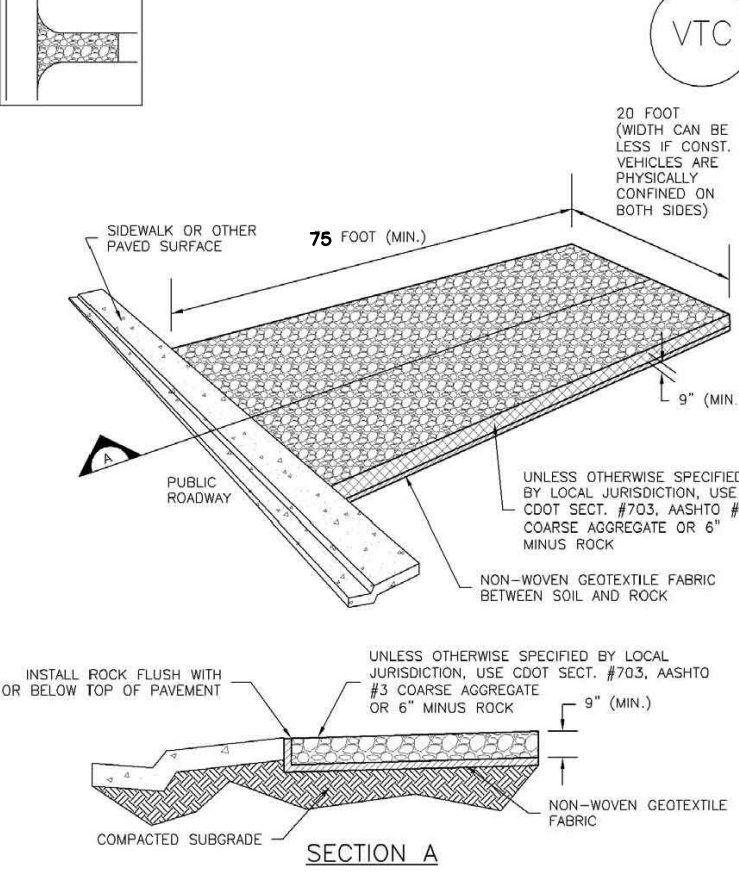
IP-8

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

August 2013

Vehicle Tracking Control (VTC)

SM-4



**VTC-1. AGGREGATE VEHICLE TRACKING CONTROL**

**INSTALLATION NOTES**

- SEE PLAN VIEW FOR -LOCATION OF CONSTRUCTION ENTRANCE/EXIT(S). -TYPE OF CONSTRUCTION ENTRANCE/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

**STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REPLACED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
- SEDIMENT TAPPED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

November 2010

SM-4

Vehicle Tracking Control (VTC)

**STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES**

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- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
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**STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**

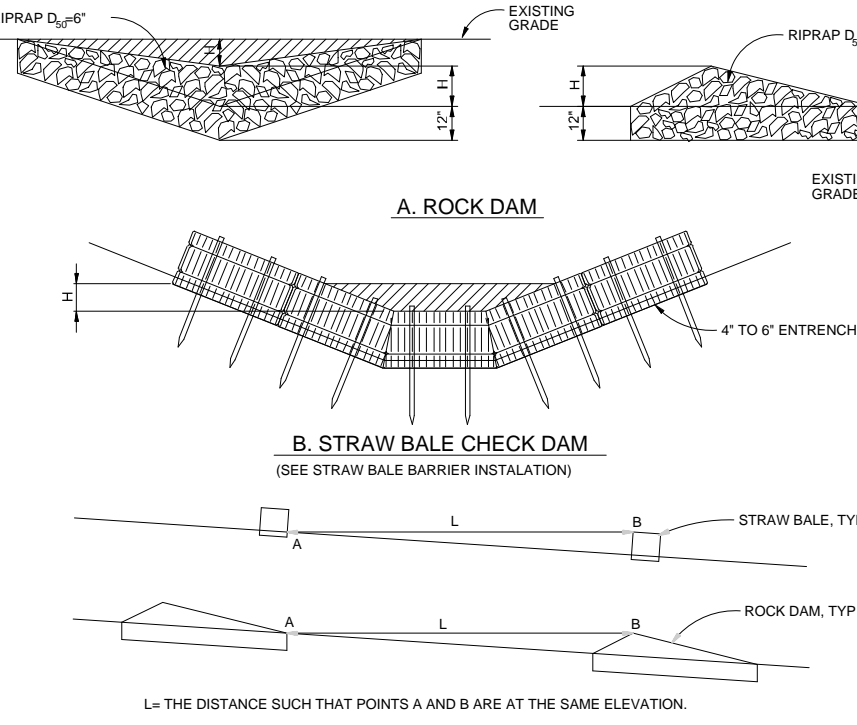
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(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

November 2010



**EC-12. Check Dams (CD)**

**CHECK DAM INSTALLATION NOTES**

- SEE PLAN VIEW FOR -LOCATION OF CHECK DAMS. -CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM). -LENGTH (L), CREST LENGTH (CL) AND DEPTH (D).
- CHECK DAMS REMOVED ON INITIAL BMP SHALL BE REINSTALLED AFTER CONSTRUCTION FINISH, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
- RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").
- RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.
- THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

**CHECK DAM MAINTENANCE NOTES**

- 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.
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- SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN  $\frac{1}{2}$  OF THE HEIGHT OF THE CREST.
- CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BRIDGEOIL, DISTURBED AREA SHALL BE SESSD AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

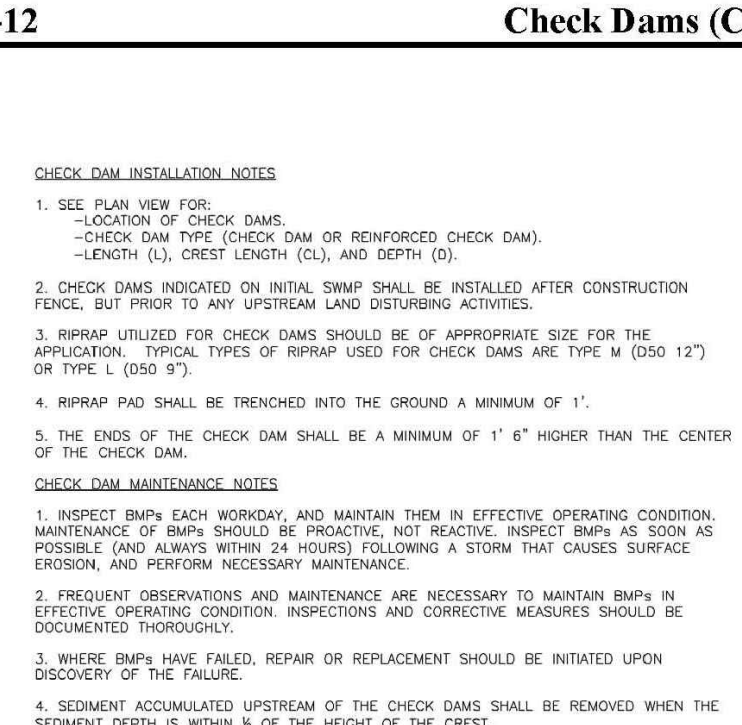
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CD-4

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

November 2010



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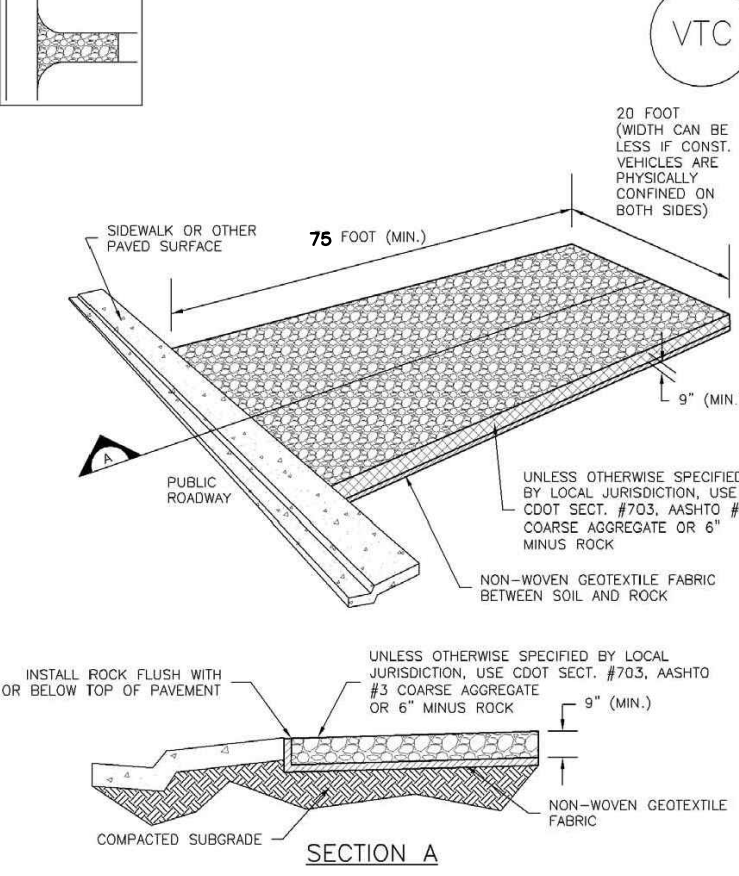
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CD-4

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

November 2010



**VTC-1. AGGREGATE VEHICLE TRACKING CONTROL**

**INSTALLATION NOTES**

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**STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**

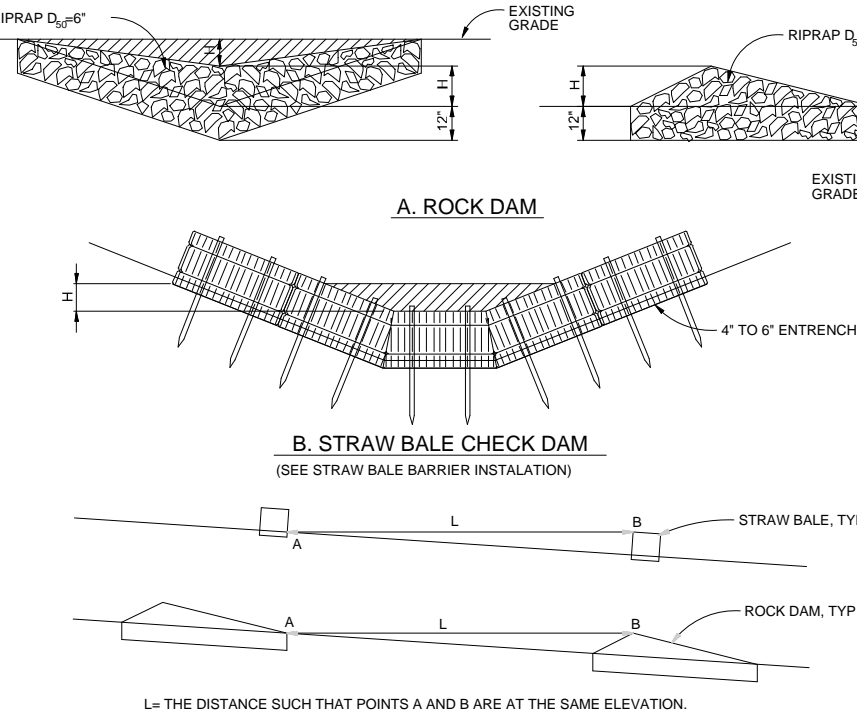
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REPLACED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
- SEDIMENT TAPPED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

November 2010



**EC-12. Check Dams (CD)**

**CHECK DAM INSTALLATION NOTES**

- SEE PLAN VIEW FOR -LOCATION OF CHECK DAMS. -CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM). -LENGTH (L), CREST LENGTH (CL) AND DEPTH (D).
- CHECK DAMS REMOVED ON INITIAL BMP SHALL BE REINSTALLED AFTER CONSTRUCTION FINISH, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
- RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").
- RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.
- THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

**CHECK DAM MAINTENANCE NOTES**

- 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.
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- SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN  $\frac{1}{2}$  OF THE HEIGHT OF THE CREST.
- CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BRIDGEOIL, DISTURBED AREA SHALL BE SESSD AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

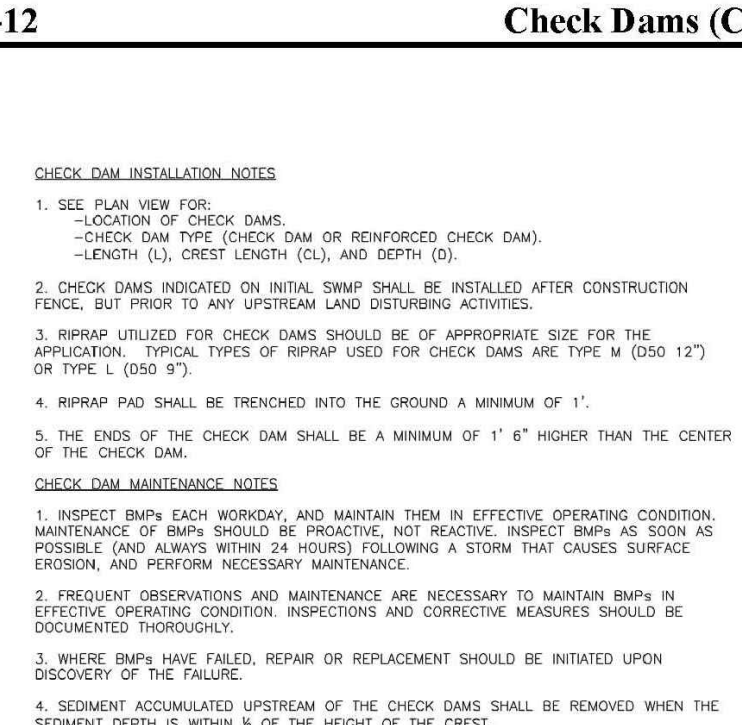
(DETAILS ADAPTED FROM BROOMFIELD COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

CD-4

Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3

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**EC-12. Check Dams (CD)**

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

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

CD-4

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811

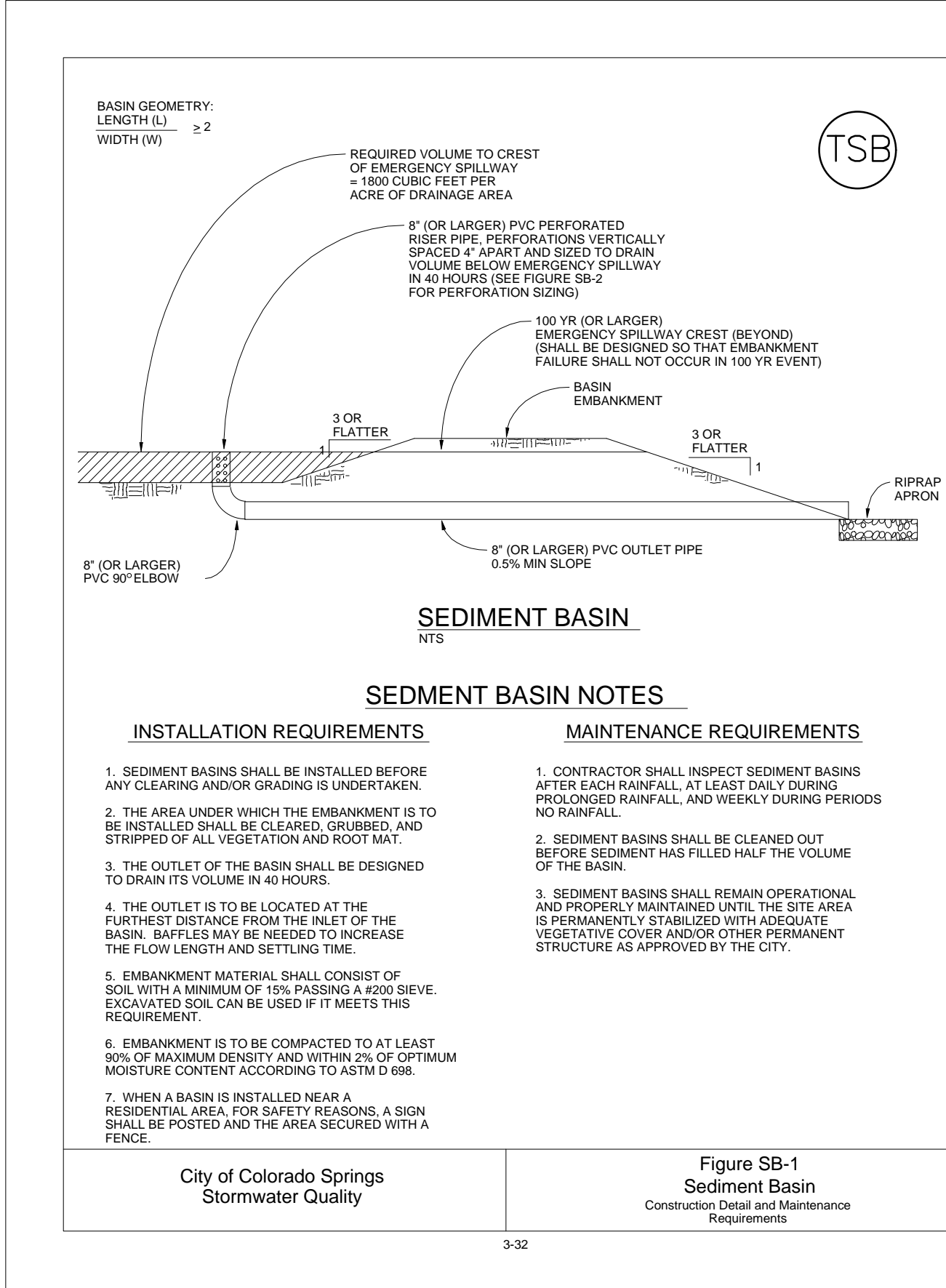
Know what's below.  
Call before you dig.  
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.:









Required Area per Row (in<sup>2</sup>)

	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17
0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09
0.06	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05
0.04	0.30	0.15	0.10	0.08	0.06	0.05	0.04	0.03
0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02
0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

**TABLE SB-1**

Circular Perforation Sizing

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in <sup>2</sup> )		
		n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
n = Number of columns of perforations				
Minimum steel plate thickness		1/4"	5/16"	3/8"

**TABLE SB-2**

City of Colorado Springs  
Stormwater Quality

Figure SB-2  
Outlet Sizing  
Application Techniques and Maintenance  
Requirements

3-33

506.02

**Table 506-2**

Pay Item		Percent of Material Smaller Than Typical Stone <sup>2</sup>	Typical Stone Dimensions <sup>3</sup> (Inches)	Typical Stone Weight <sup>4</sup> (Pounds)
	Stone Size d50 <sup>1</sup> (Inches)			
Riprap	6	70-100 50-70 35-50 2-10	12 9 6 2	85 35 10 0.4
Riprap	9	70-100 50-70 35-50 2-10	15 12 9 3	160 85 35 1.3
Riprap	12	70-100 50-70 35-50 2-10	21 18 12 4	440 275 85 3
Riprap	18	100 50-70 35-50 2-10	30 24 18 6	1280 650 275 10
Riprap	24	100 50-70 35-50 2-10	42 33 24 9	3500 1700 650 35

<sup>1</sup>d50 = nominal stone size  
<sup>2</sup>based on typical rock mass  
<sup>3</sup>equivalent spherical diameter  
<sup>4</sup>based on a specific gravity = 2.5

Nominal stone size and total thickness of the riprap shall be as shown on the plans.  
CDOT SECTION 506 REQUIREMENTS APPLY

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GRADING & EROSION CONTROL  
N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	3/19/21
FINAL CONDITION	7/9/21

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECDT

PREPARED UNDER MY DIRECT  
SUPERVISION FOR AND ON  
BEHALF OF  
DREXEL, BARRELL & CO.

DRAWING SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

EROSION  
CONTROL  
DETAILS

PROJECT NO. 21187-01CSCV  
DRAWING NO.

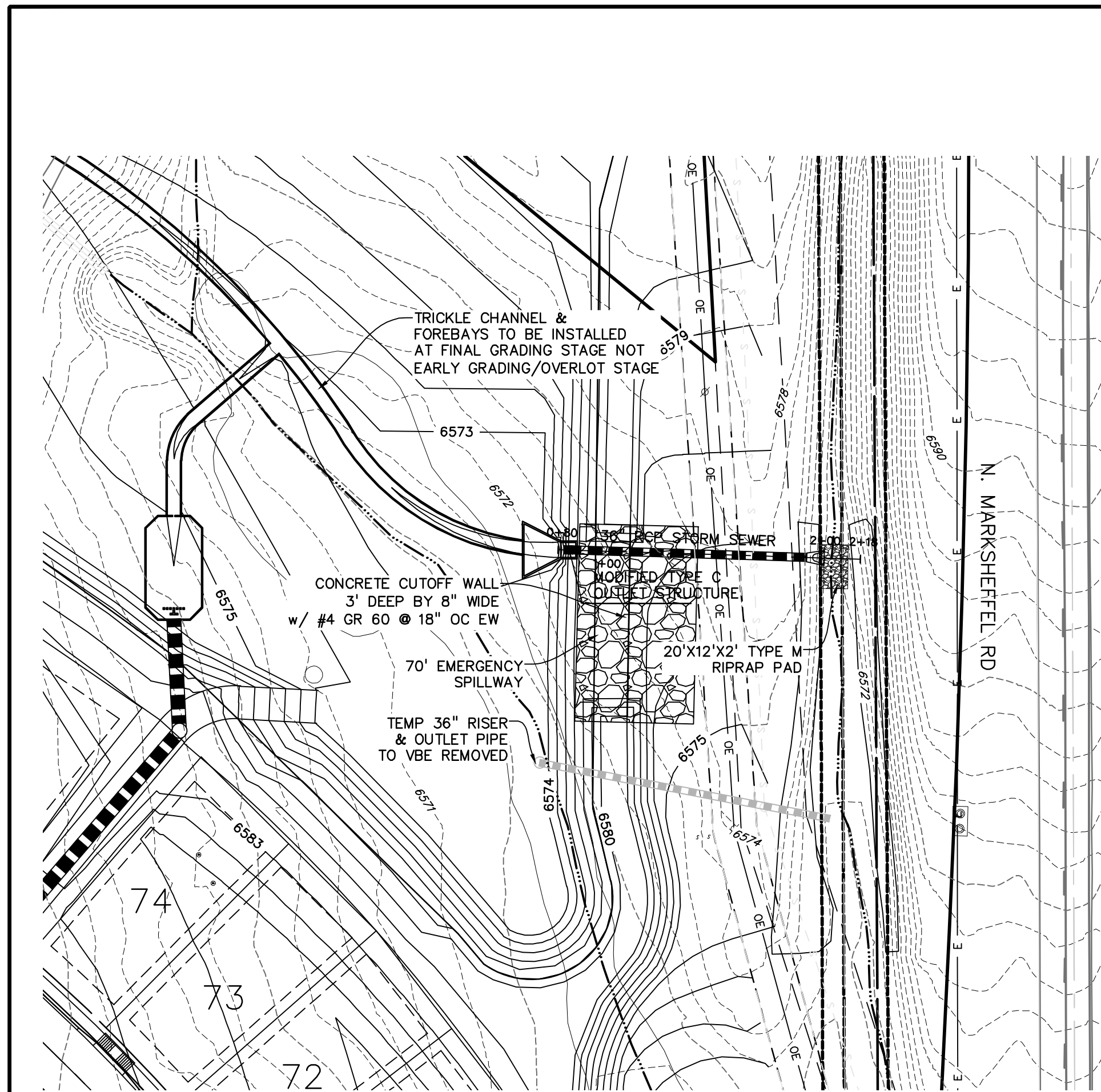
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SHEET: 7 OF 9

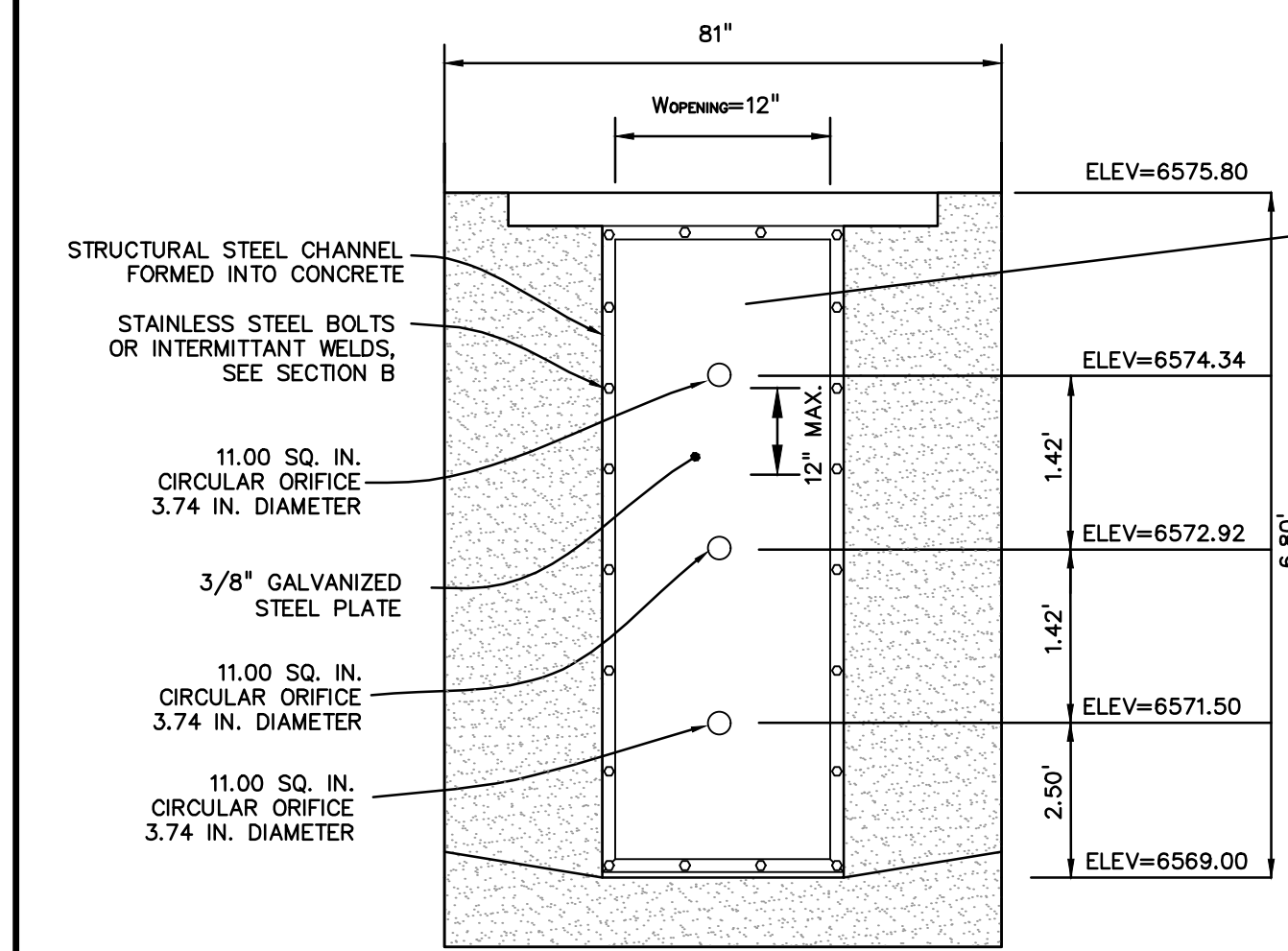


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UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.:



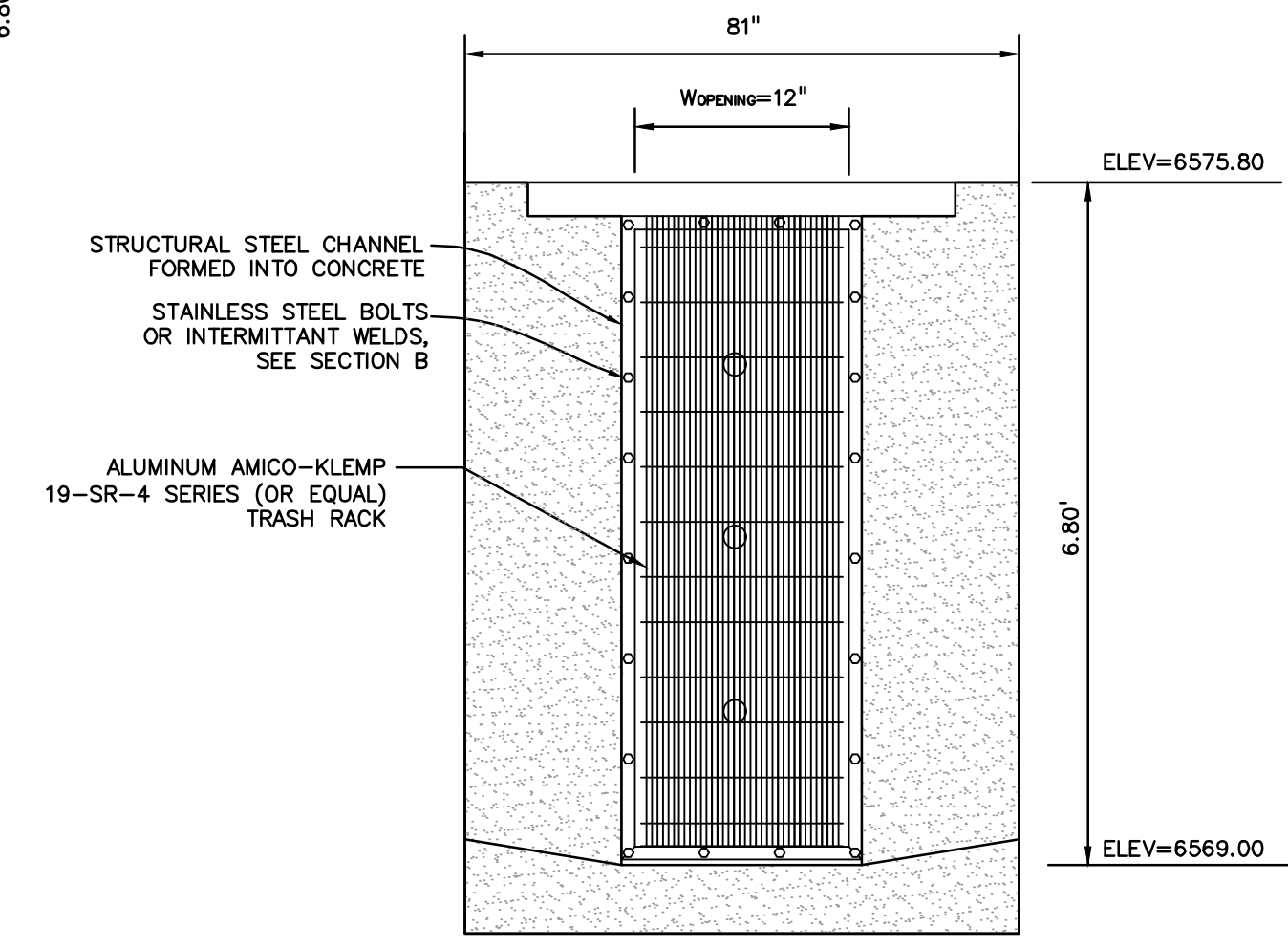
NORTH POND PLAN VIEW  
SCALE: 1"=50'



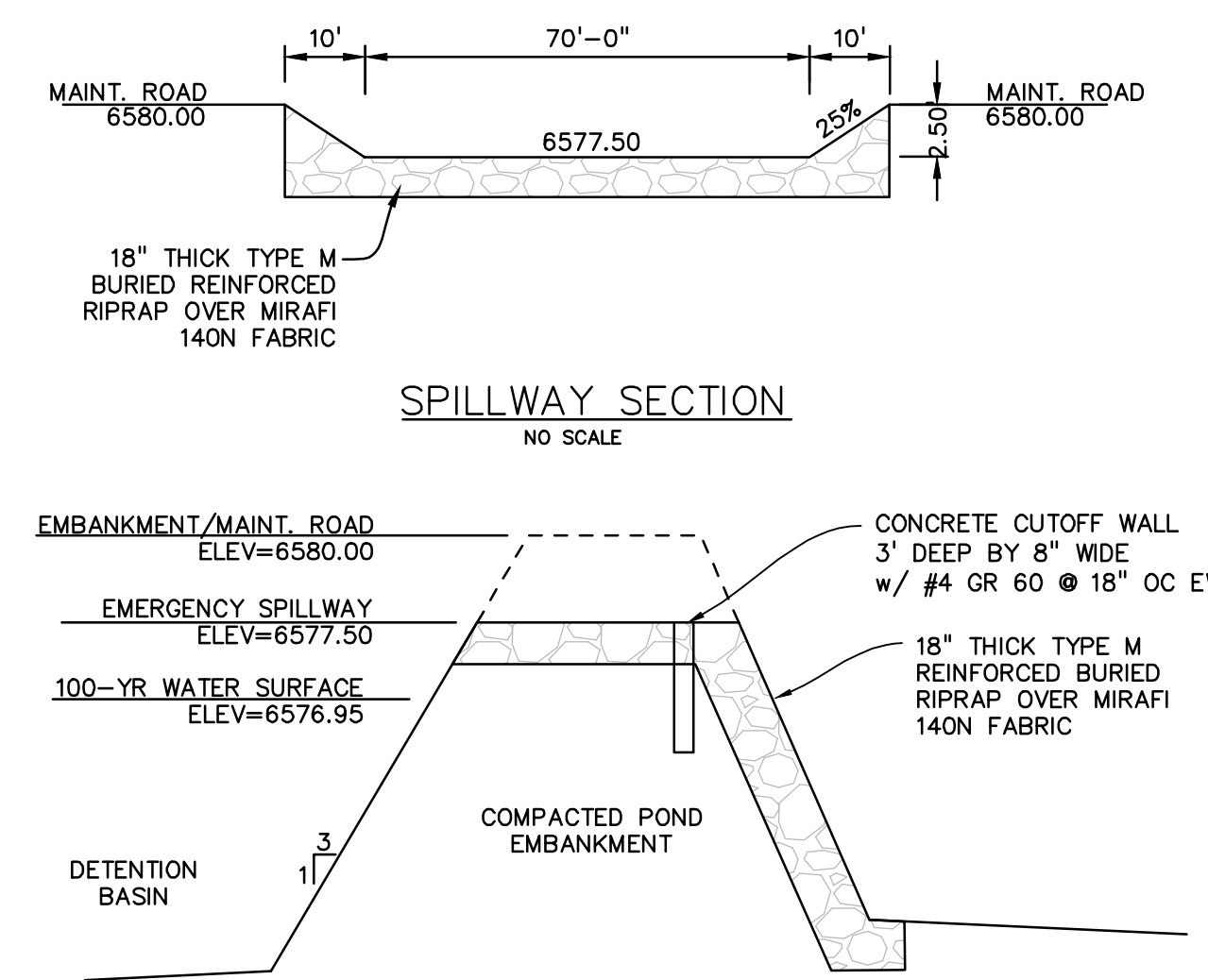
ELEVATION  
INTERIM PERFORATED PLATE DETAIL  
NO SCALE

- PERFORATED PLATE NOTES:
1. PROVIDE GASKET MATERIAL OR GROUT BETWEEN THE ORIFICE PLATE AND CONCRETE.
  2. BOLT PLATE TO CONCRETE @ 12" MAX. ON CENTER. ORIFICE PLATE IS TO BE REMOVABLE.
  3. ALL METAL SURFACES ARE TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND.
- WQCV TRASH RACKS:
1. WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
  2. TRASH RACK WIDTHS PROVIDED IN TABLE 1 ARE FOR SPECIFIED TRASH RACK MATERIAL AND NEED TO BE ADJUSTED FOR MATERIALS HAVING A DIFFERENT OPEN AREA/GROSS AREA RATIO (R VALUE)
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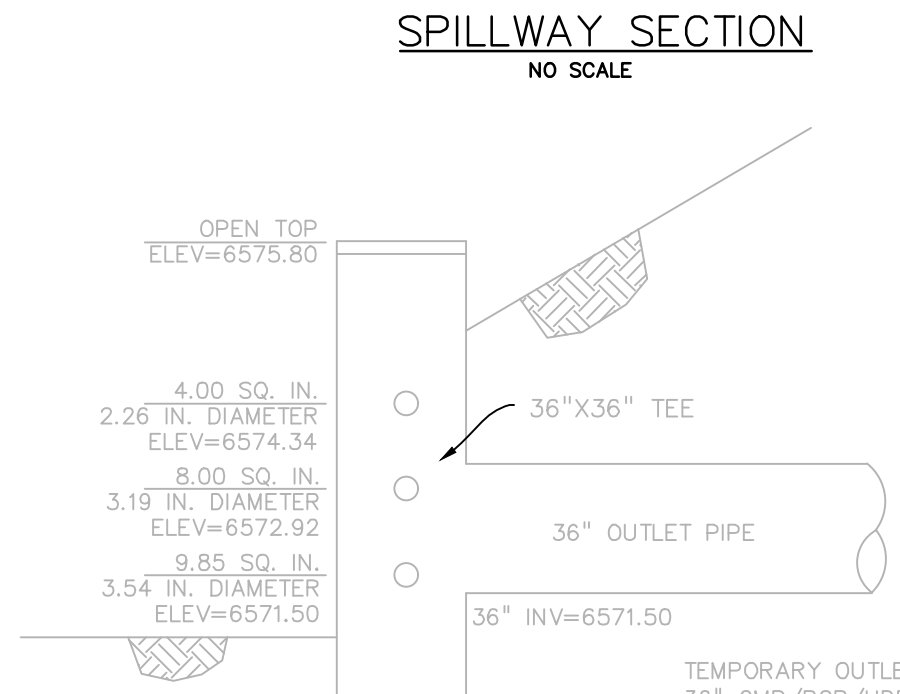
TEMPORARY OUTLET PLATE TO BE REMOVED AND REPLACED AS SHOWN (LEFT)



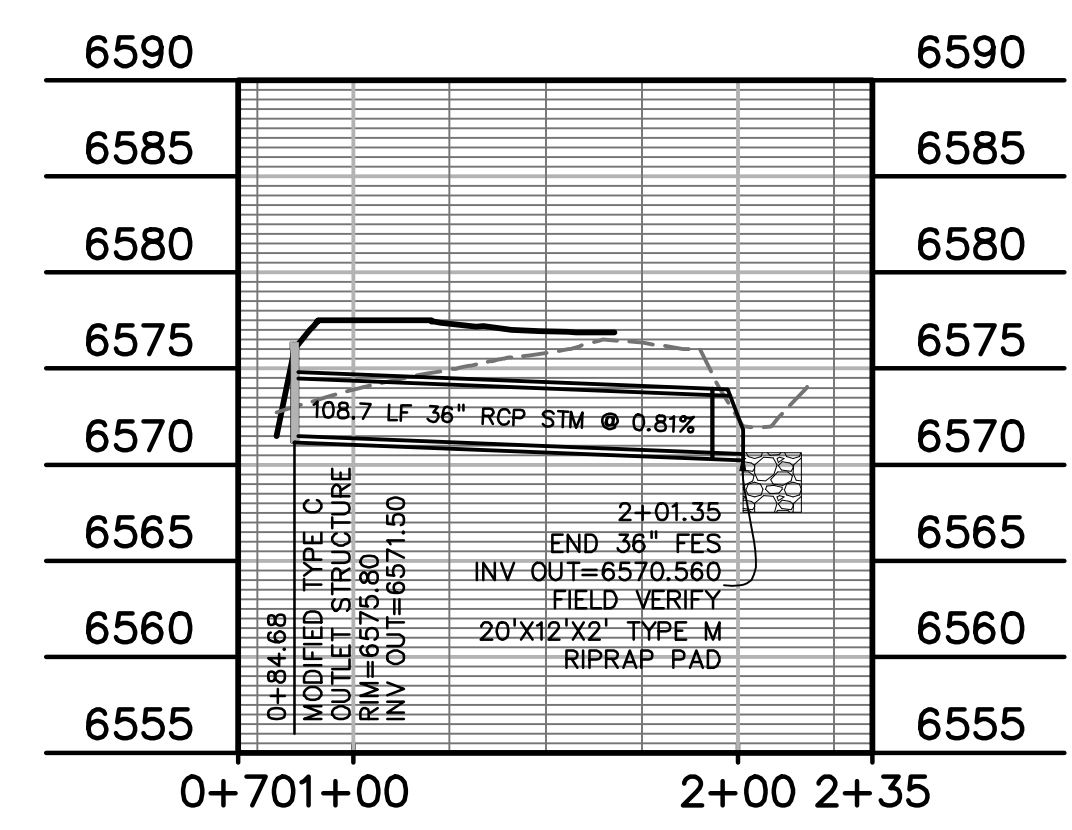
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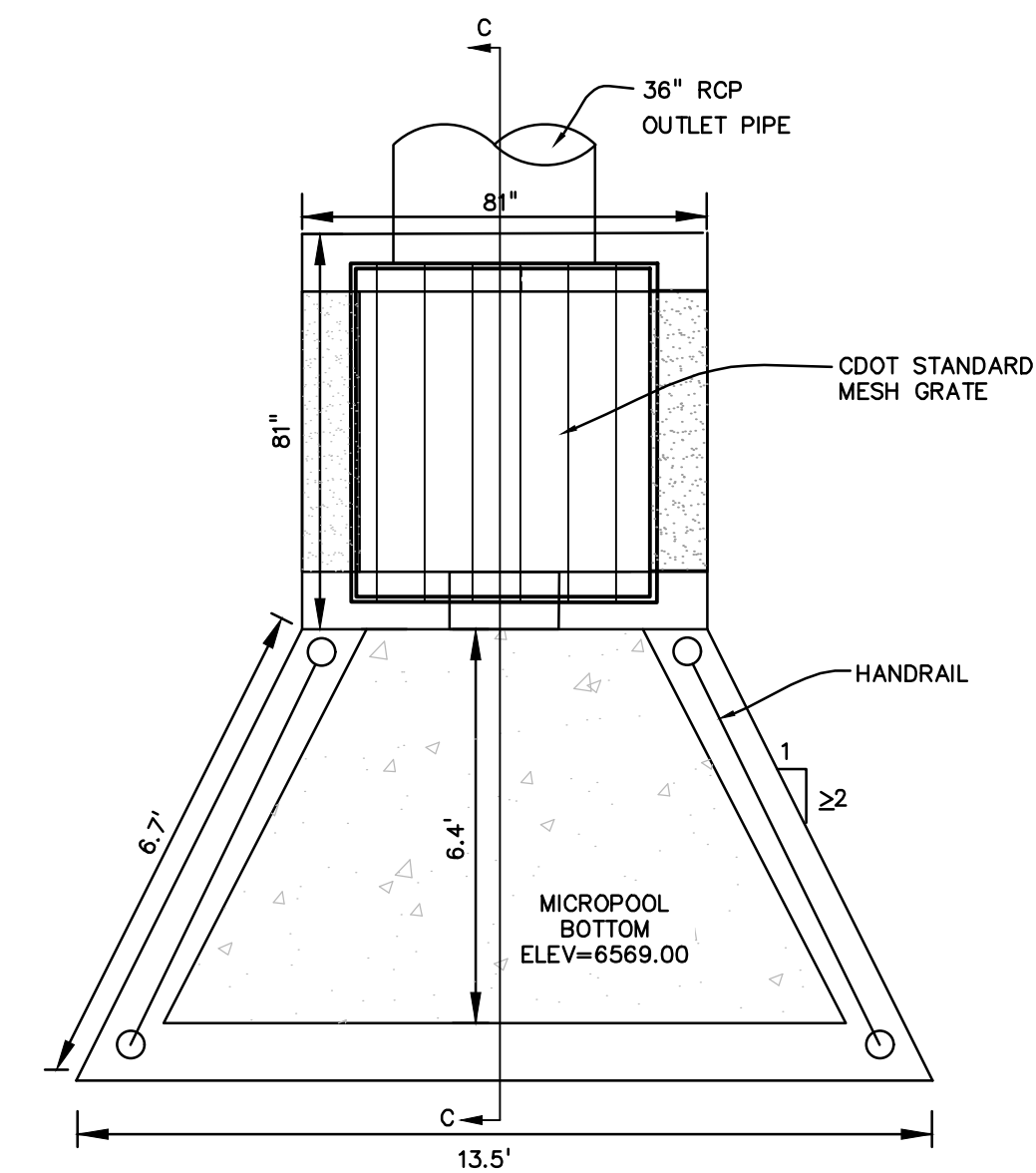
SPILLWAY SECTION  
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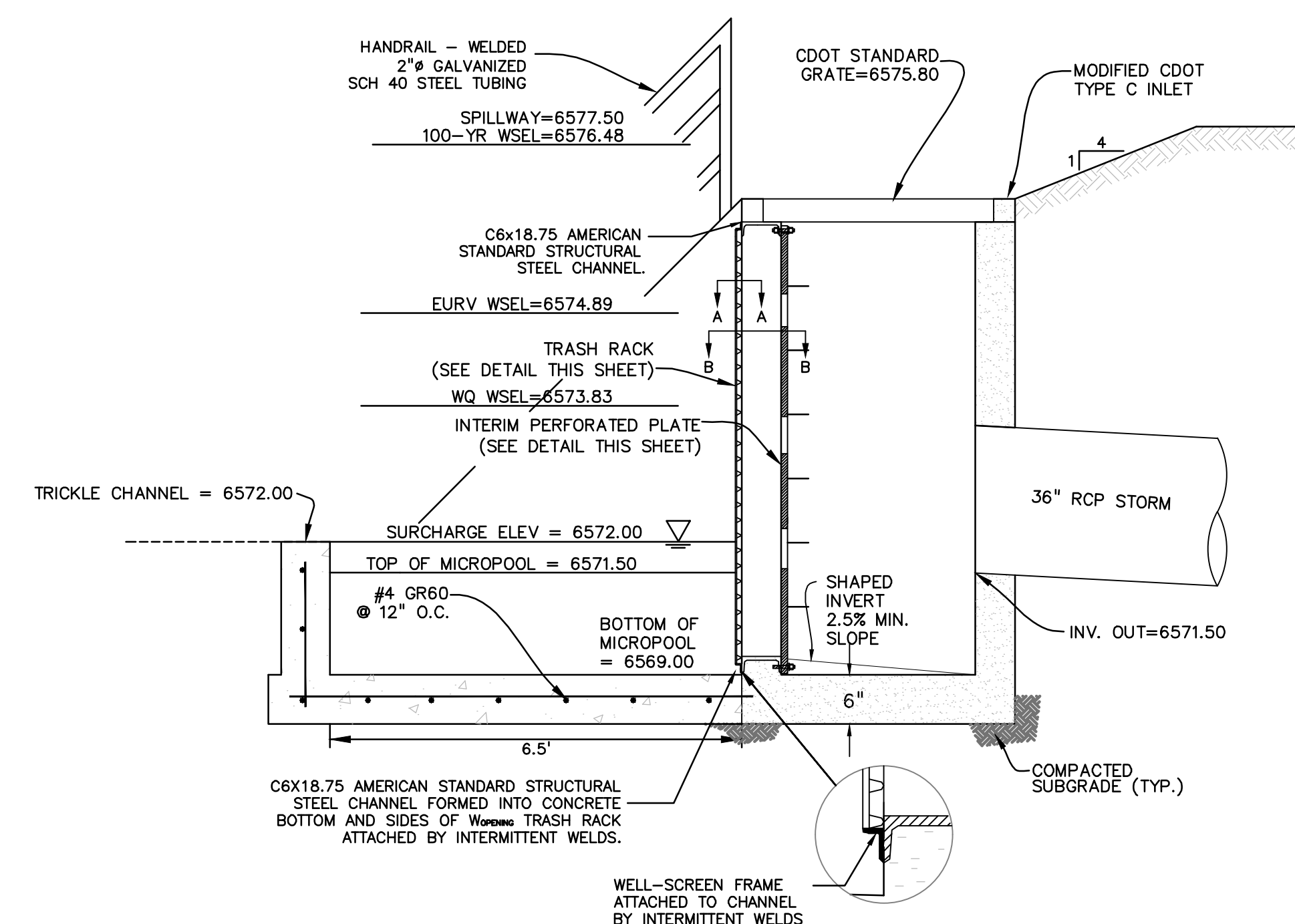
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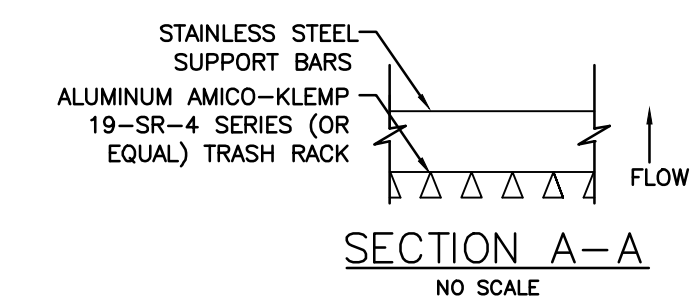
OUTLET PROFILE  
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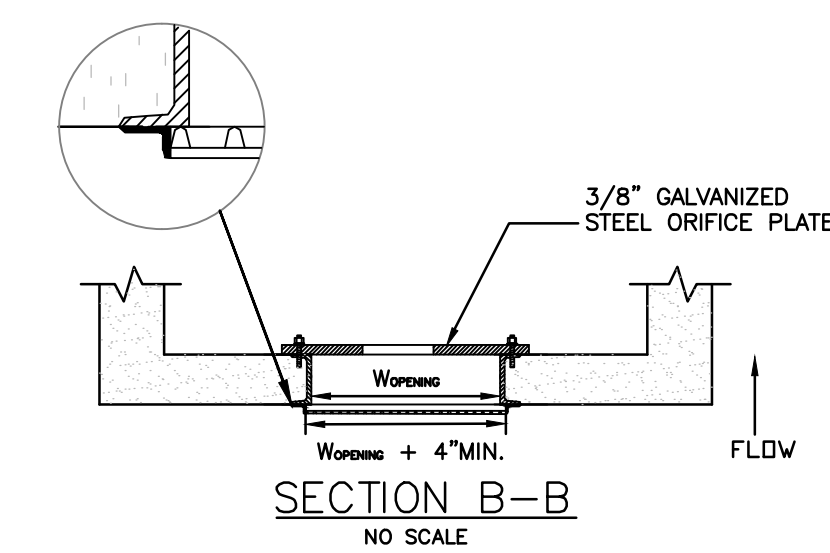
MICROPOOL PLAN  
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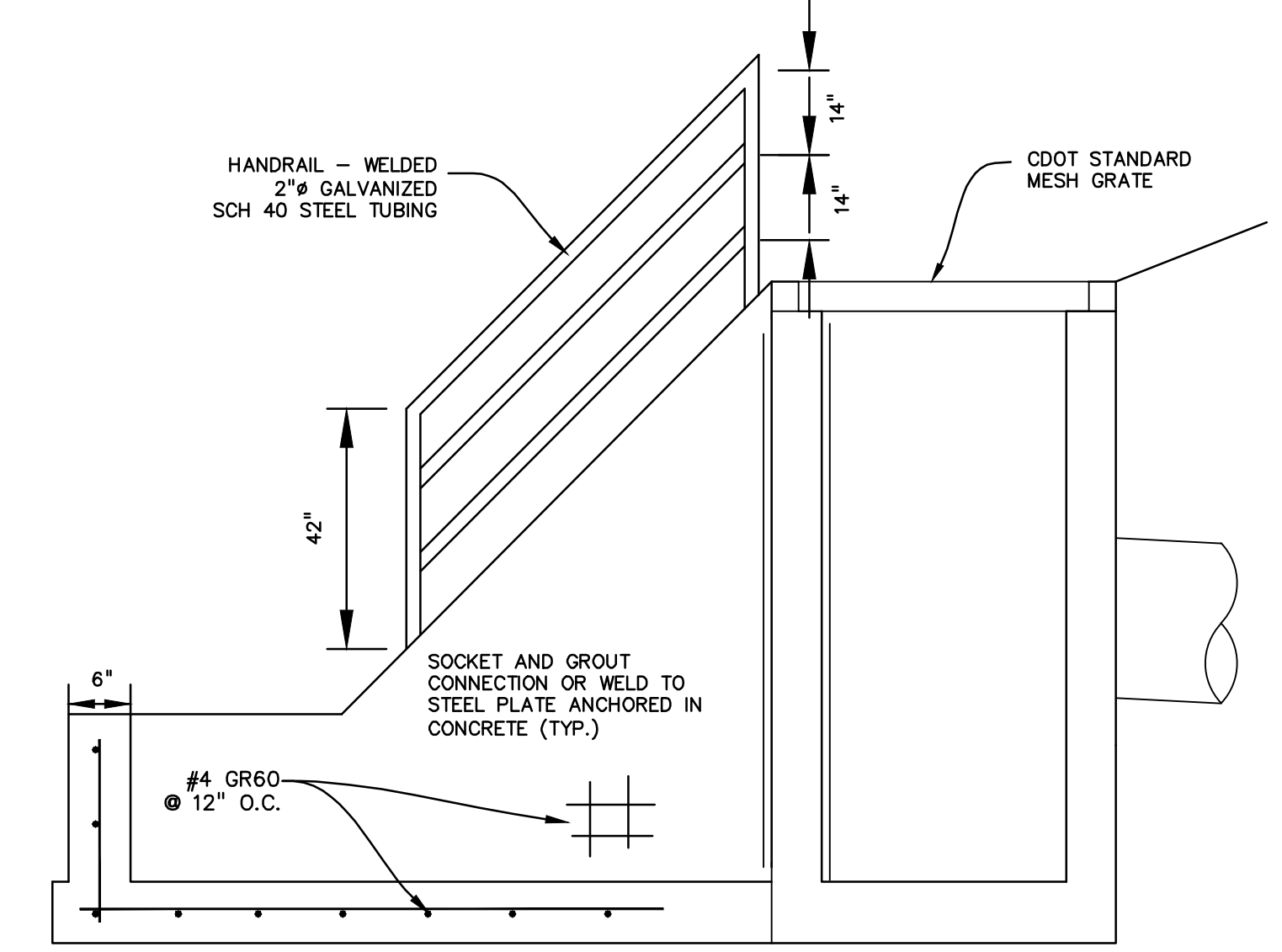
POND OUTLET PROFILE SECTION C-C  
NO SCALE



SECTION A-A  
NO SCALE



SECTION B-B  
NO SCALE



SECTION C-C  
NO SCALE

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N. MARKSHEFFEL ROAD  
EL PASO COUNTY, COLORADO

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DESIGNED BY:	KGV
DRAWN BY:	KGV
CHECKED BY:	TDM
FILE NAME:	21187-01PND1

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DREXEL, BARRELL & CO.

DRAWING SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

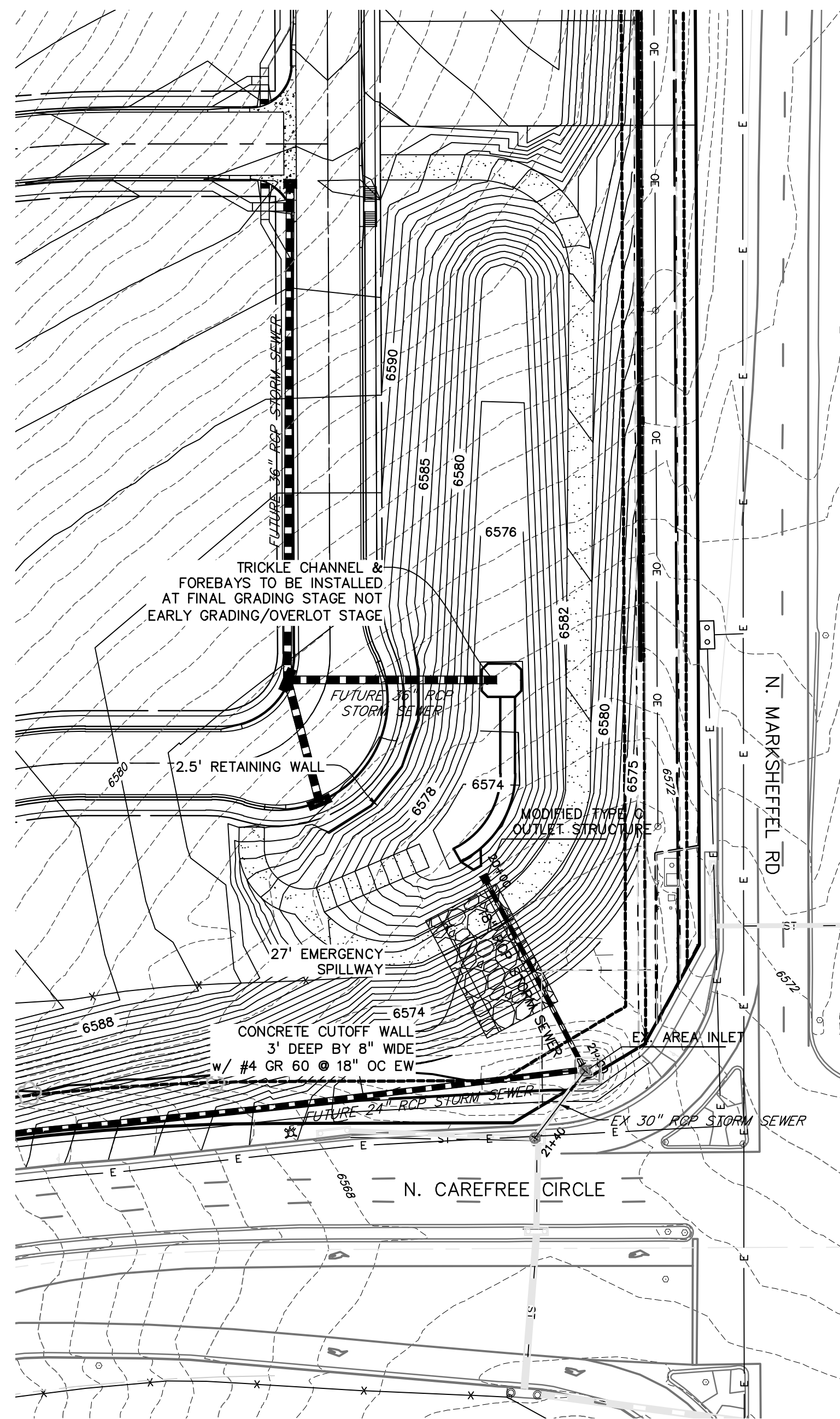
NORTH POND  
INTERIM  
OUTLET DETAILS

PROJECT NO. 21187-01CSCV  
DRAWING NO.

**PD-1**

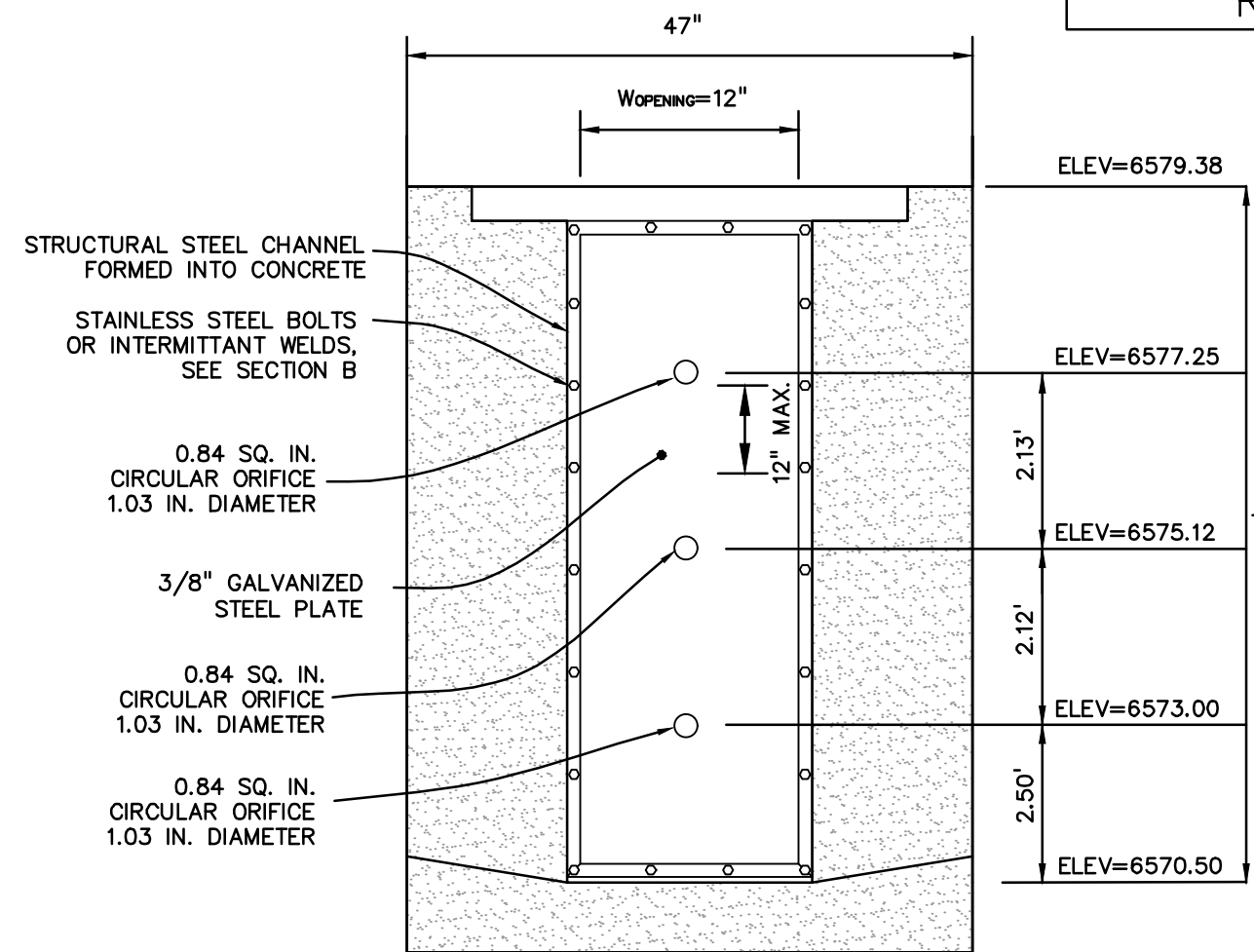
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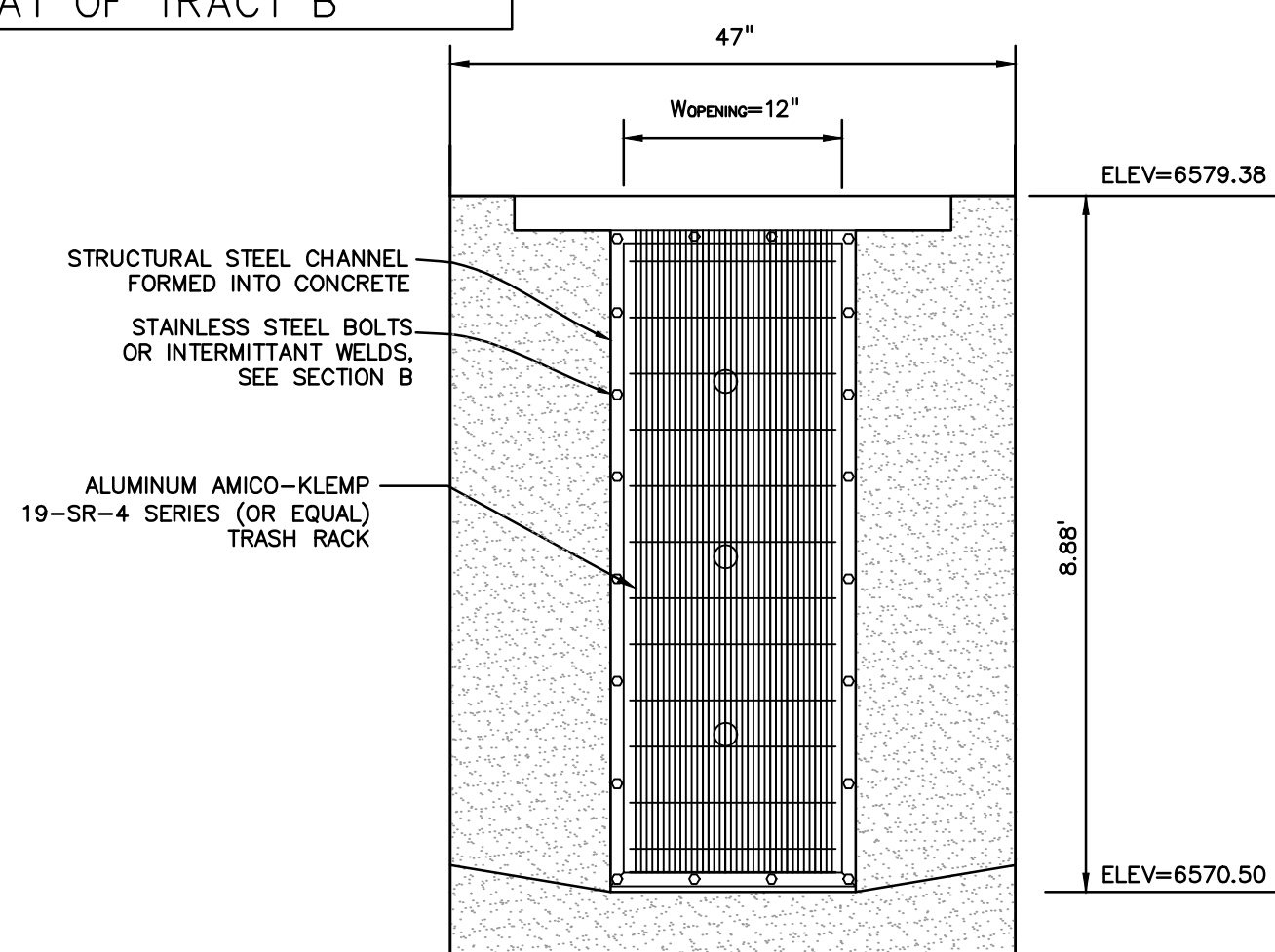


PLAN VIEW  
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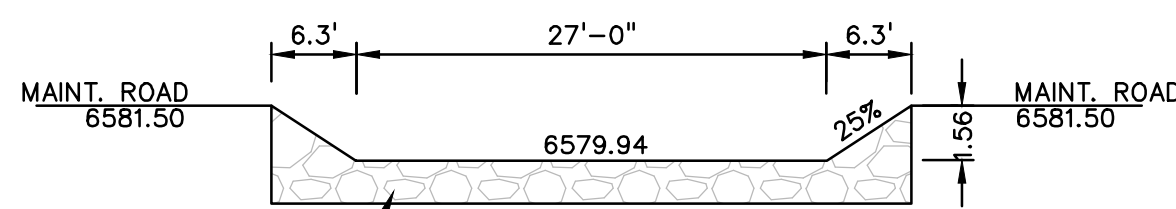
TEMPORARY OUTLET PLATE TO  
REMAIN UNTIL FINAL DESIGN FOR  
REPLAT OF TRACT B



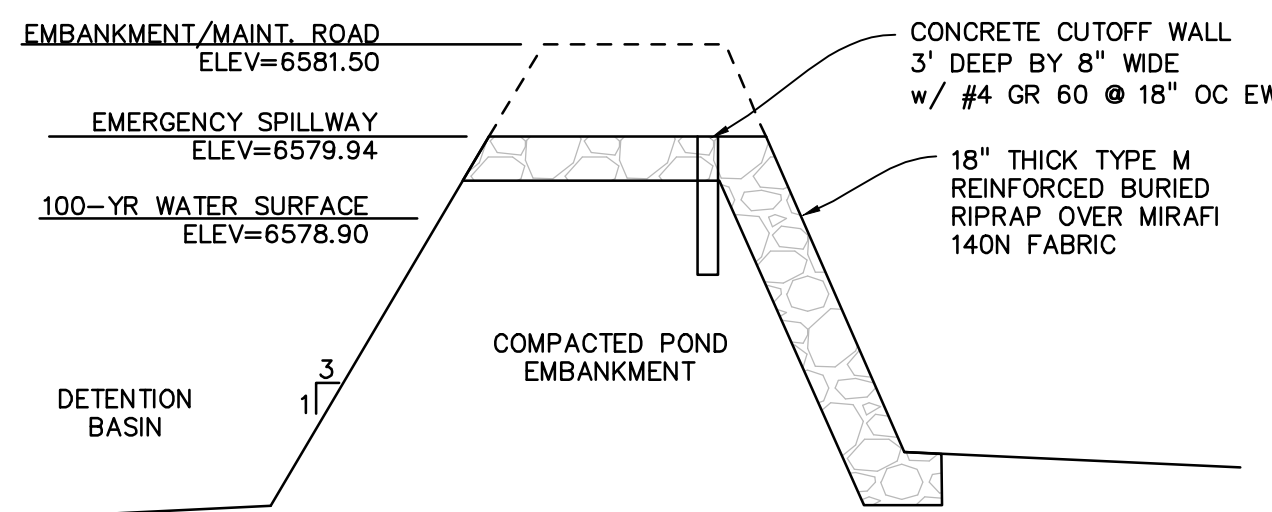
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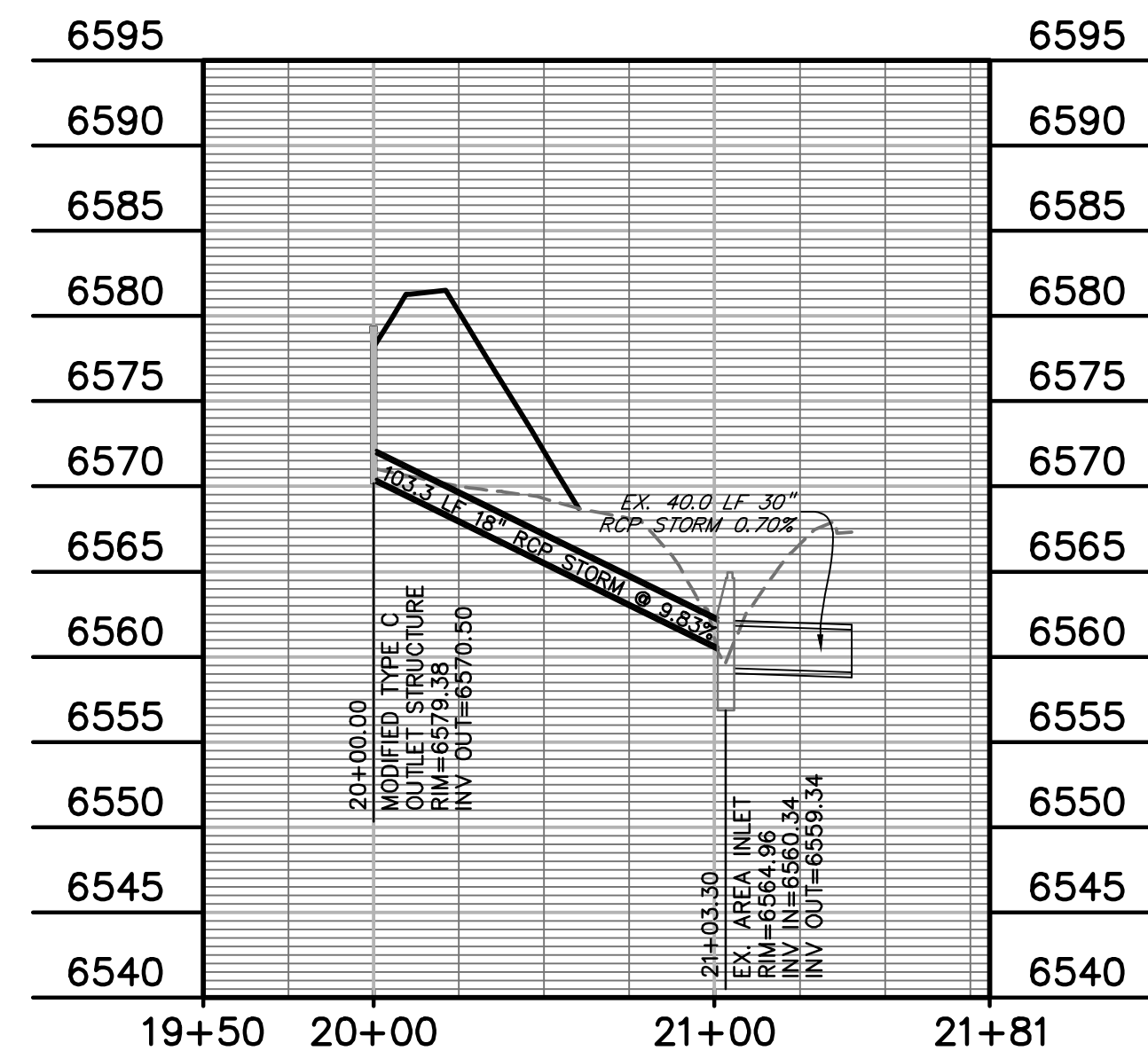
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TRASH RACK  
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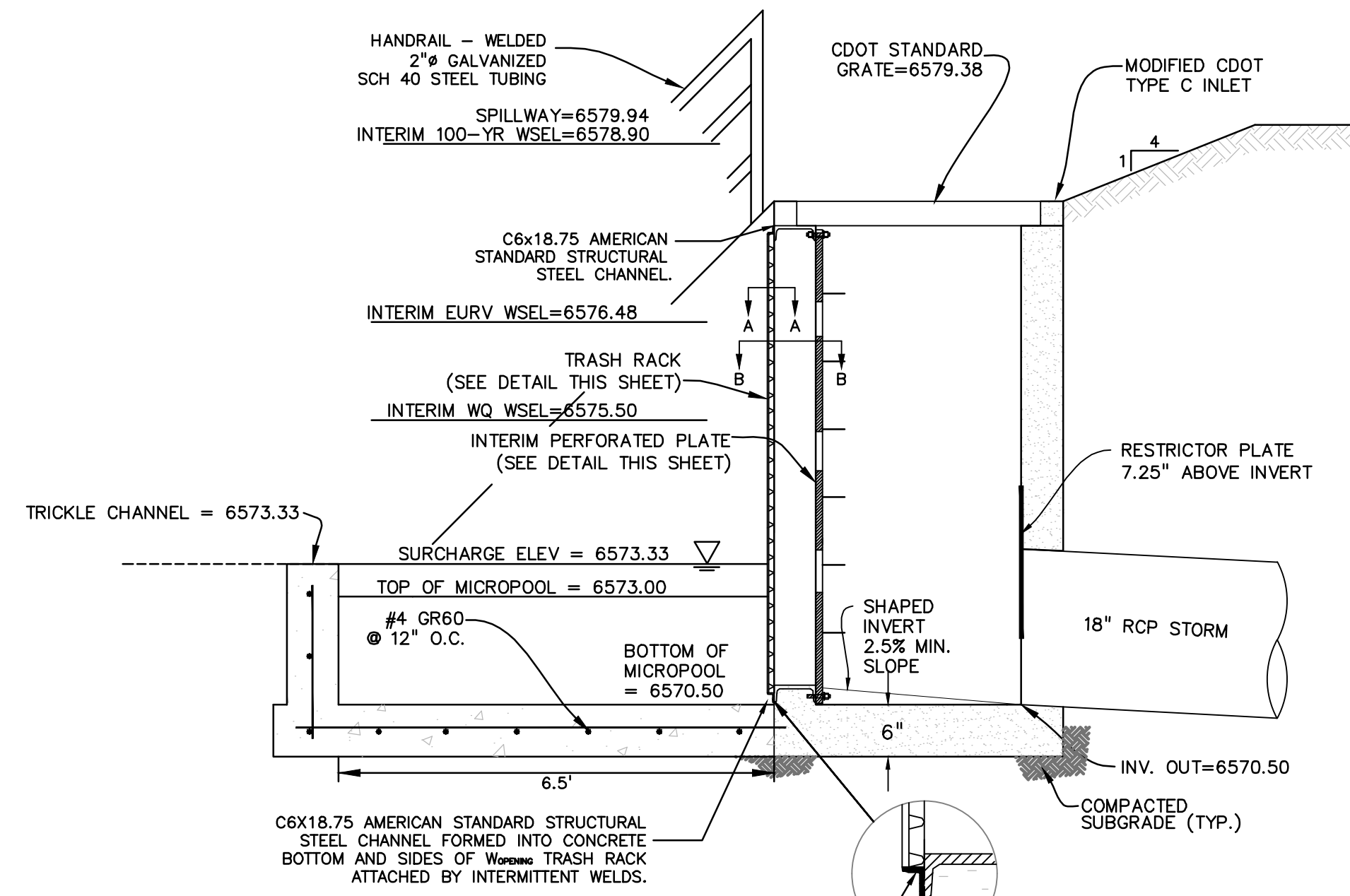
SPILLWAY SECTION  
NO SCALE



SPILLWAY SECTION  
NO SCALE



OUTLET PROFILE  
SCALE: 1"=50'



POND OUTLET PROFILE SECTION C-C  
NO SCALE

PERFORATED PLATE NOTES:

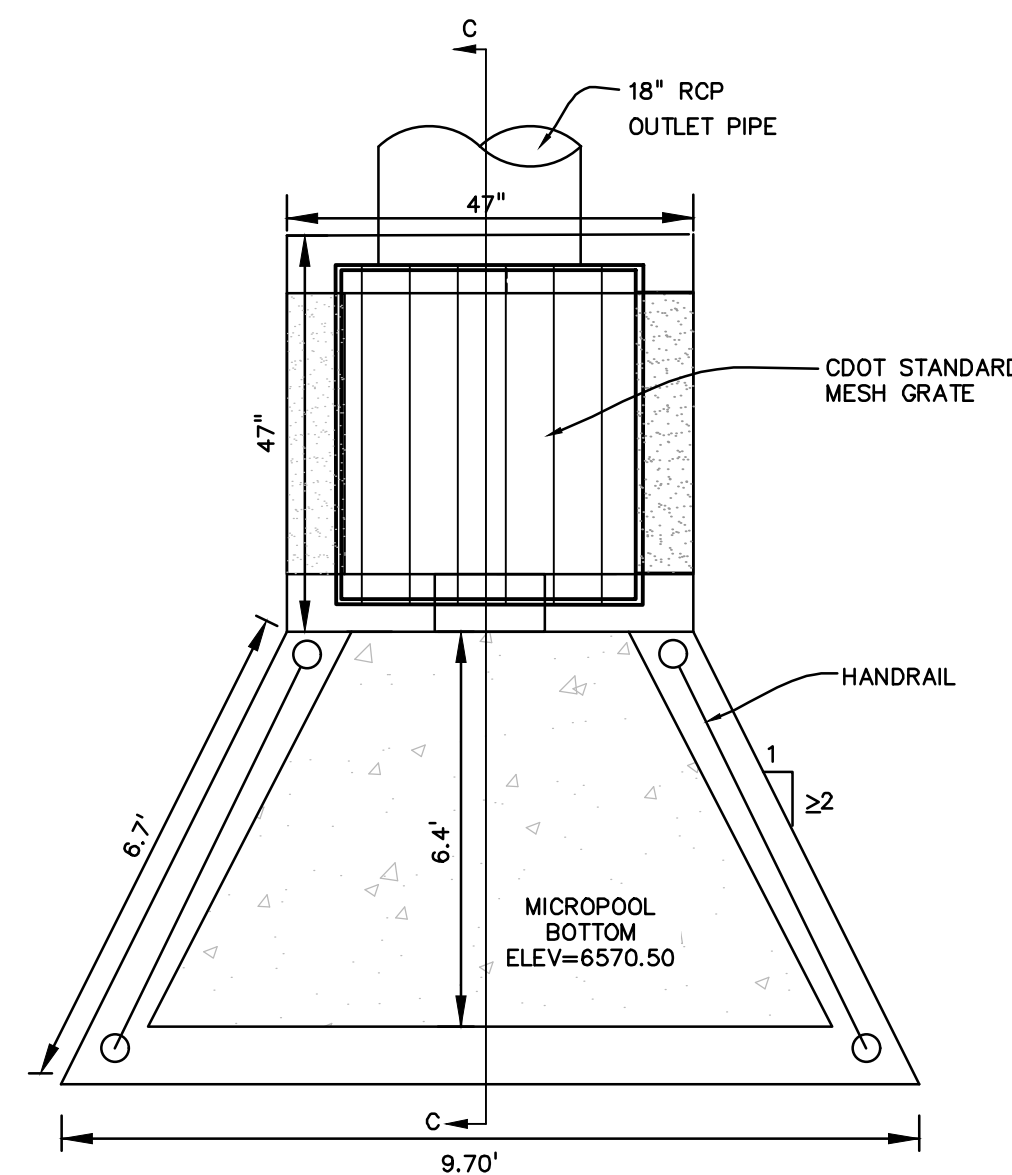
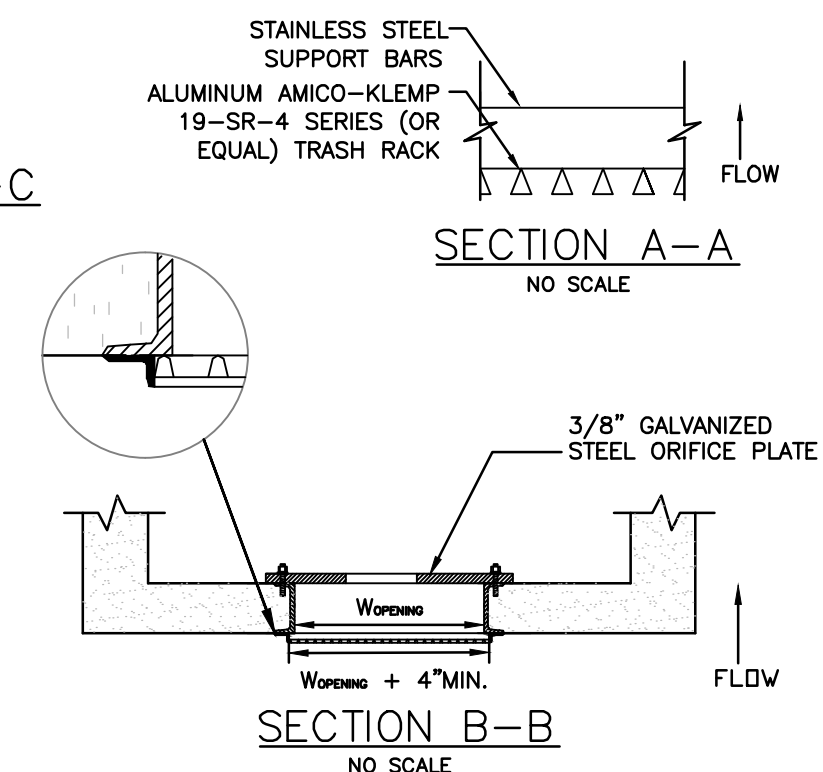
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WQCV TRASH RACKS:

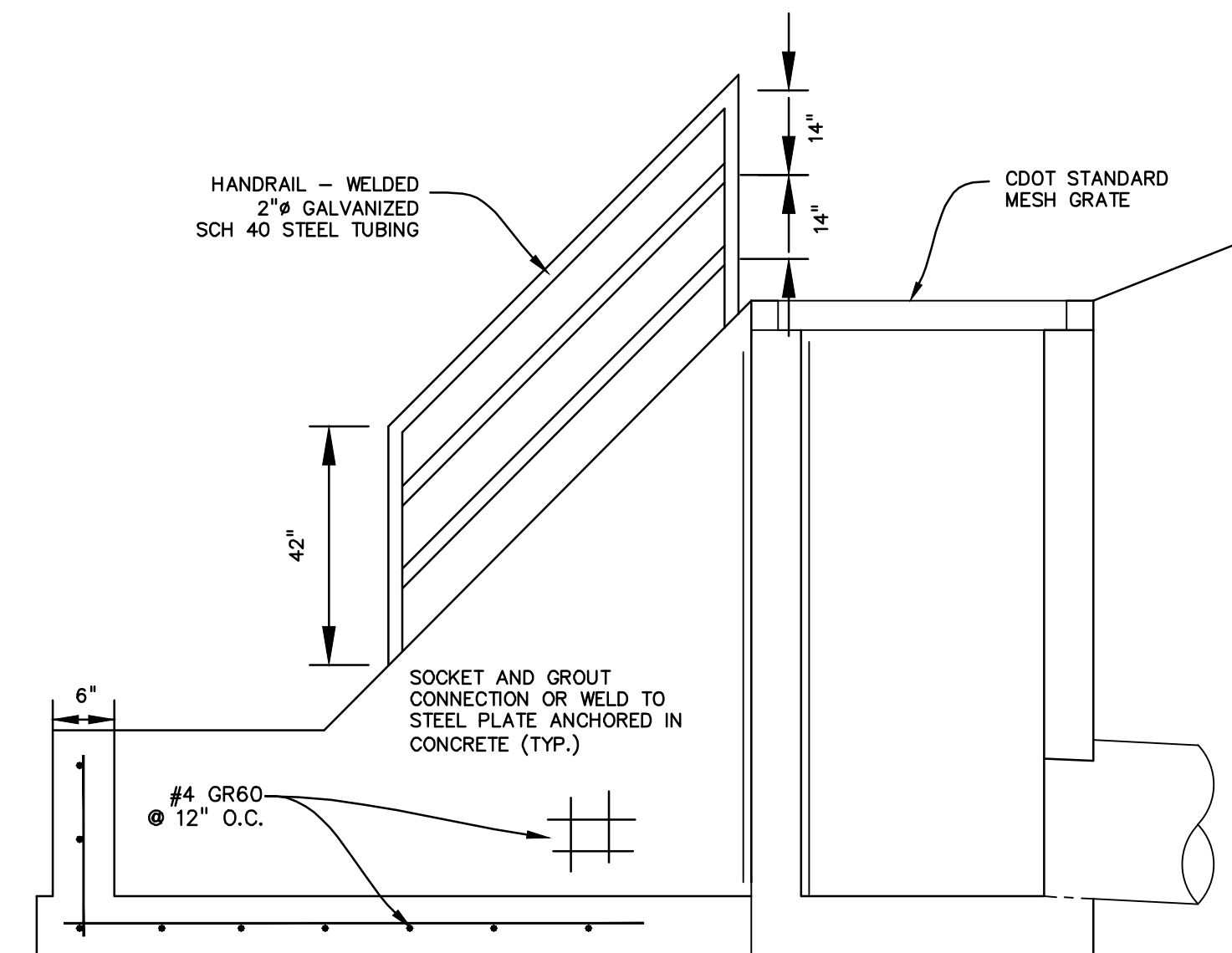
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MICROPOOL PLAN  
NO SCALE



SECTION C-C  
NO SCALE

PREPARED BY:

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DRAWN BY:	KGv
CHECKED BY:	TDM
FILE NAME:	21187-01PND1

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SUPERVISION FOR AND ON  
BEHALF OF  
DREXEL, BARRELL & CO.

DRAWING SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

SOUTH POND  
INTERIM  
OUTLET DETAILS

PROJECT NO. 21187-01CSCV  
DRAWING NO.

PD-2

SHEET: 9 OF 9

COUNTY FILE NO.: