

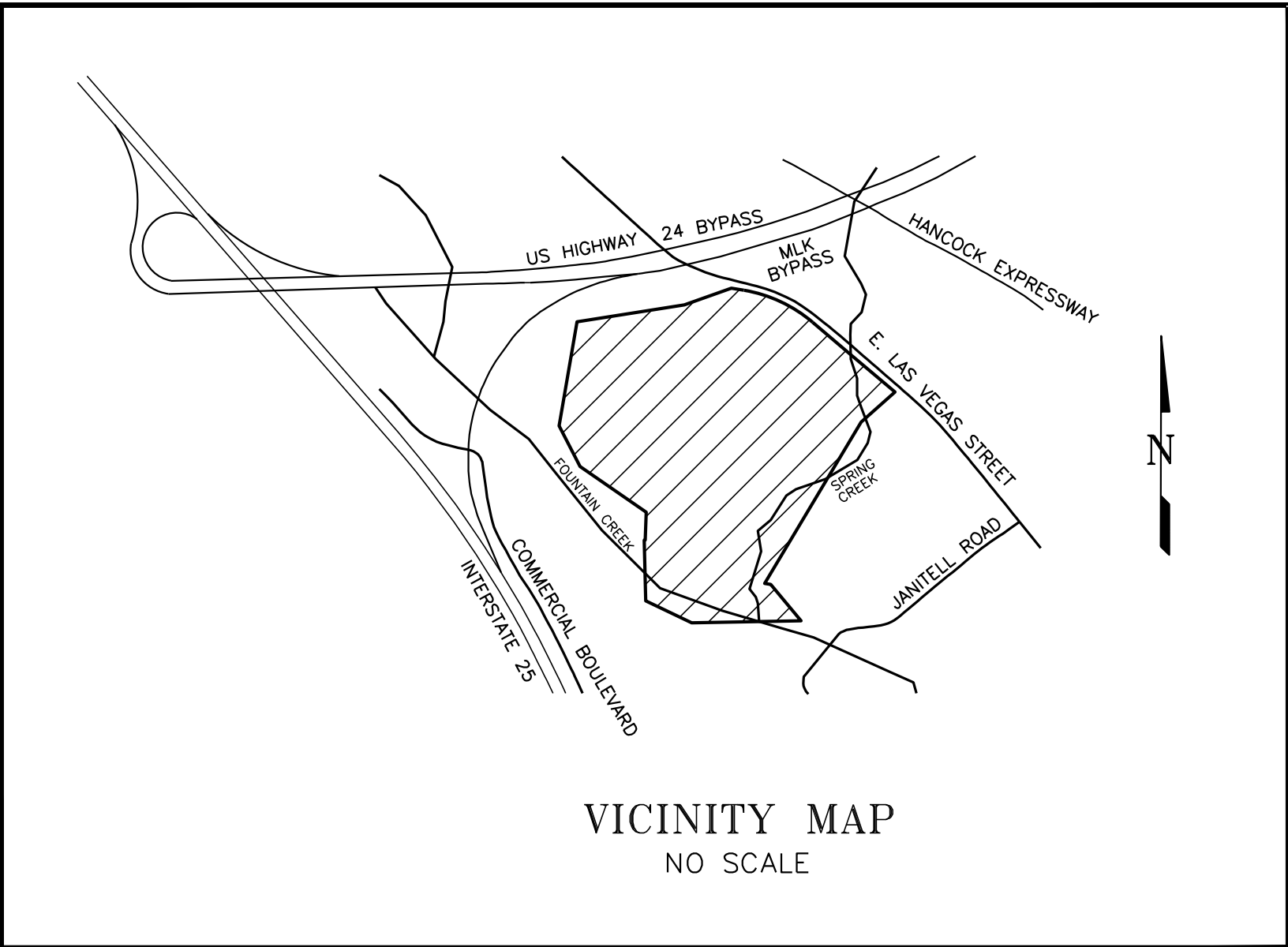
ROCKY TOP RESOURCES
EXTENDED DETENTION BASIN AND
OVERLOT GRADING & EROSION CONTROL PLAN
TRACT 7 VALLEY GARDEN SUBDIVISION
COLORADO SPRINGS, COLORADO

GENERAL NOTES

- ALL NEW CONSTRUCTION TO CONFORM TO THE SPECIFICATIONS OF THE EL PASO COUNTY DEPARTMENT OF PUBLIC SERVICES. ANY ASPHALT REMOVED IS TO BE REPLACED TO MEET THE SPECIFICATIONS OF THE EL PASO COUNTY DEPARTMENT OF PUBLIC SERVICES.
- A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE EL PASO COUNTY DEPARTMENT OF DEVELOPMENT SERVICES PRIOR TO ANY CONSTRUCTION.
- APPROVED PLANS, EL PASO COUNTY ENGINEERING CRITERIA MANUAL, ETC. IS REQUIRED TO BE ON-SITE AT ALL TIMES.
- ALL NECESSARY PERMITS, SUCH AS WORKING IN THE RIGHT-OF-WAY, SWMP, FUGITIVE DUST, ESQCP, ACCESS, C.O.E. 404, ETC. SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
- PROFILE DESIGN LINES AND HORIZONTAL STATIONING ARE BASED ON CENTERLINE, AS SHOWN, UNLESS OTHERWISE NOTED.
- FOR CENTERLINE DESIGN, CURB AND GUTTER, ROAD SIDE DITCH LOCATIONS AND SIDEWALK SEE INDIVIDUAL PLAN AND PROFILE SHEETS. PAVEMENT DESIGN TO BE BASED ON RESISTANCE VALUE 'R' DERIVED FROM HVEEM TESTS AND ARE TO BE APPROVED BY THE EL PASO COUNTY DEPARTMENT OF DEVELOPMENT SERVICES PRIOR TO WORK ABOVE SUBGRADE.
- ALL VERTICAL DESIGN AND TOP OF CURB ARE BASED ON THE DESIGN POINT AS SHOWN IN THE TYPICAL CROSS SECTION.
- AT INTERSECTIONS, ALL RADII TO EDGE OF ASPHALT SHALL BE 20-FOOT UNLESS OTHERWISE NOTED.
- THE LOCATIONS OF THE EXISTING UTILITIES HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATION AND VERIFICATION OF EXISTING UTILITIES PRIOR TO BEGINNING WORK. IF IT APPEARS THAT THERE COULD BE A CONFLICT WITH ANY UTILITIES, WHETHER INDICATED ON THE PLANS OR NOT, THE CONTRACTOR IS TO NOTIFY THE ENGINEER AND OWNER IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND REPAIR (IF NECESSARY) OF ALL UTILITIES.
- WHERE APPROPRIATE, NEATLY SAW CUT ALL EXISTING CONCRETE AND ASPHALT. REPAIR/REPLACE ALL DISTURBED EXISTING ITEMS WITH LIKE MATERIALS AND THICKNESSES. MINIMUM ASPHALT THICKNESS SHALL BE 4-INCHES.
- ALL DISTURBED AREAS SHALL BE REVEGETATED WITH NATIVE GRASSES WITHIN 21 DAYS OF EXCAVATION PER EROSION CONTROL PLAN.
- THE PREPARED EROSION/SEDIMENT CONTROL PLAN IS TO BE CONSIDERED A PART OF THESE PLANS AND ITS REQUIREMENTS ADHERED TO DURING THE CONSTRUCTION OF THIS PROJECT.
- ALL STORM AND SANITARY SEWER PIPE LENGTHS AND SLOPES ARE FIGURED FROM CENTER OF MANHOLE OR BEND. CULVERT PIPE LENGTHS ARE DETERMINED FROM THE END OF THE FLARED END SECTIONS. PIPE LENGTHS ARE GIVEN AS A HORIZONTAL LENGTH.
- ALL STORM SEWER BEDDING TO BE PER CDOT STANDARDS.
- ALL STORM SEWER PIPE CLASS AND TYPE IS CALLED OUT ON THE PLAN AND PROFILE SHEETS.
- CONCRETE PIPE JOINT FASTENERS ARE REQUIRED ON THE FIRST TWO PIPE JOINTS FROM THE DOWNSTREAM FLARED END SECTION OF A DRAINAGE PIPE.
- ALL WYES AND BENDS USED IN CONSTRUCTION OF STORM SEWER FACILITIES SHALL BE FACTORY FABRICATED, UNLESS APPROVED BY THE EL PASO COUNTY DEPARTMENT OF DEVELOPMENT SERVICES.
- CONSTRUCTION AND MATERIALS USED IN ALL STORM AND SANITARY SEWER MANHOLES SHALL BE PER SPECIFICATIONS. STORM SEWER RADIAL DEFLECTIONS TO BE GROUTED OR INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- STORM SEWER MANHOLE SIZES AS FOLLOWS UNLESS OTHERWISE SHOWN:
18" THRU 36" USE 48" I.D. MANHOLE
42" THRU 48" USE 60" I.D. MANHOLE
54" THRU 60" USE 72" I.D. MANHOLE
NOTE: MANHOLE SIZES TABULATED HERE SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE INCOMING LATERALS.
- ALL EARTHWORK, MATERIALS AND INSTALLATION ASSOCIATED WITH THE EXCAVATION, EMBANKMENT AND ASPHALT PAVING TO BE CARRIED OUT IN THIS PROJECT ARE TO BE COMPLETED IN CONFORMANCE WITH THE EL PASO COUNTY ECM AND THE PIKES PEAK ASPHALT PAVING SPECIFICATIONS.

BENCHMARK: FIMS Monument Z-395 is a stainless steel rod inside an aluminum flange stamped "Z 395 1983" set by the NGS 335 feet Northwest of the center of Royer Street, 50 feet Northeast of the center of E. Las Vegas Street, 27 feet Southwest of the rear rail of the Denver and Rio Grande Western tracks, 3 feet Northwest of a utility pole with 1 guy wire, 1 foot Southeast of a witness post, 4 feet below the tracks; Elevation = 5914.77 (FIMS datum) plus 3.465 foot adjustment to NAVD 88 datum per VERTCON adjustment = 5918.23.

BASIS OF BEARING: THE BEARINGS & DISTANCES SHOWN ON SITE DEVELOPMENT PLAN



STANDARD CONSTRUCTION NOTES

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
 - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 - CDOT M & S STANDARDS
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PUBLIC SERVICES DEPARTMENT - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER OR THE AUTHORITY HAVING JURISDICTION IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY DSD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DSD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PUBLIC SERVICES DEPARTMENT, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.

THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

STATEMENTS

Design Engineer's Statement:

These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.

Richard N. Wray, P.E. #19310

Date

For and on behalf of Kiowa Engineering Corp.

Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in these detailed plans and specifications.

Frederick Martin
Rocky Top Resources
1755 E. Las Vegas Street
Colorado Springs, Colorado 80903

El Paso County:

County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document.

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, 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 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 Directors discretion.

Jennifer Irvine, P.E.,
County Engineer / ECM Administrator

Date

ABBREVIATIONS

ASSY = ASSEMBLY	MH = MANHOLE
BNDY = BOUNDARY	MIN. = MINIMUM
B.O.P. = BOTTOM OF PIPE	NTS = NOT TO SCALE
CL = CENTERLINE	O.D. = OUTSIDE DIAMETER
CL = CLASS	PC = POINT OF HORIZONTAL CURVATURE
CRA = CONCRETE REVERSE ANCHOR	PCHC = POINT OF CURVATURE ON HORIZ. CURVE
CRB = CONCRETE THRUST BLOCK	PP = PROPOSED
CR = POINT OF CURB RETURN	PT = POINT OF HORIZONTAL TANGENCY
DIP = DUCTILE IRON PIPE	PTHC = POINT OF TANGENCY ON HORIZ. CURVE
EL = ELEVATION	PVC = POLY VINYL CHLORIDE PIPE
ESMT = EASEMENT	PVC = POINT OF VERTICAL CURVATURE
EX. = EXISTING	PVI = POINT OF VERTICAL INTERSECTION
FC = FACE OF CURB	PVT = POINT OF VERTICAL TANGENCY
FES = FLARED END SECTION	RCB = REINFORCED CONCRETE BOX
FLG = FLANGE	RCP = REINFORCED CONCRETE PIPE
FL = FLOWLINE	ROW = RIGHT OF WAY
GB = GRADE BREAK	RT = RIGHT
HP = HIGH POINT	SHT = SHEET
HORIZ. = HORIZONTAL	SS = SANITARY SEWER
HYD = HYDRANT	STA. = STATION
I.D. = INSIDE DIAMETER	STD. = STANDARD
LT = LEFT	T.O.P. = TOP OF PIPE
LF = LINEAR FEET	TYP. = TYPICAL
LP = LOW POINT	VC = VERTICAL CURVE
MAX. = MAXIMUM	VERT. = VERTICAL

PREPARED BY:



DEVELOPER:

ROCKY TOP RESOURCES, INC.
FREDRICK D. MARTIN
1755 E. LAS VEGAS STREET
COLORADO SPRINGS, CO 80903-4323
(719) 579-9103

INDEX OF SHEETS

- 1 COVER SHEET
- 2 OVERLOT GRADING & EROSION CONTROL PLAN
- 3 EXTENDED DETENTION BASIN PLAN
- 4 EXTENDED DETENTION BASIN OUTLET PLAN & DETAILS
- 5 EXTENDED DETENTION BASIN DETAILS
- 6 MISCELLANEOUS & STANDARD DETAILS
- 7 EROSION CONTROL DETAILS
- 8 EROSION CONTROL DETAILS
- 9 EROSION CONTROL DETAILS

*A.G.A./A.P.W.A. STANDARD UTILITY MARKING COLOR CODE

NATURAL GAS
ELECTRIC
WATER
WASTEWATER

YELLOW
RED
BLUE
GREEN

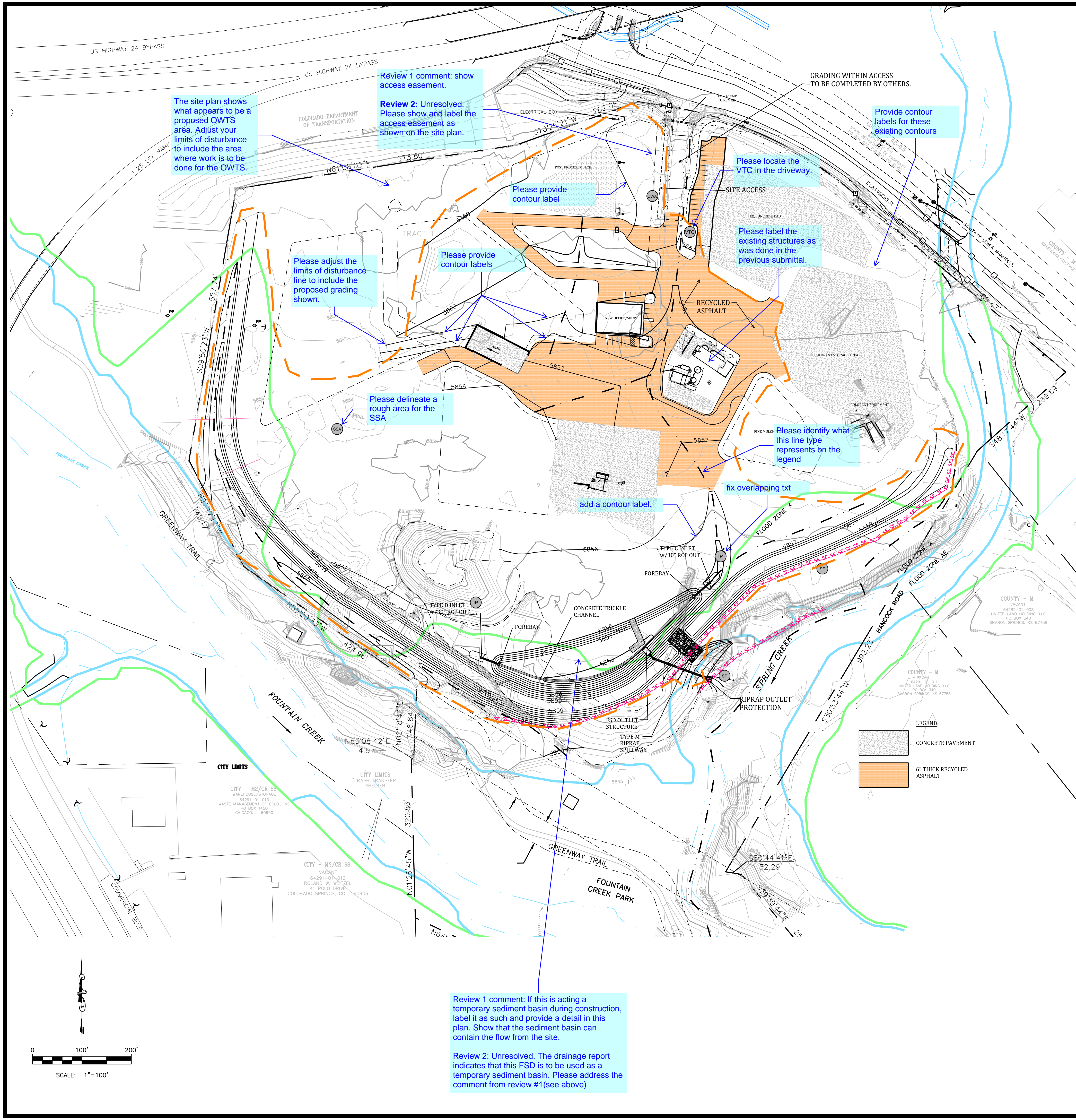
CALL
BEFORE
YOU
DIG...



48 HOURS
BEFORE YOU DIG,
CALL UTILITY
LOCATORS
FOR LOCATING
AND MARKING GAS,
ELECTRIC, WATER
AND WASTEWATER

1-800-922-1987

PCD PROJECT NO. PPR1913

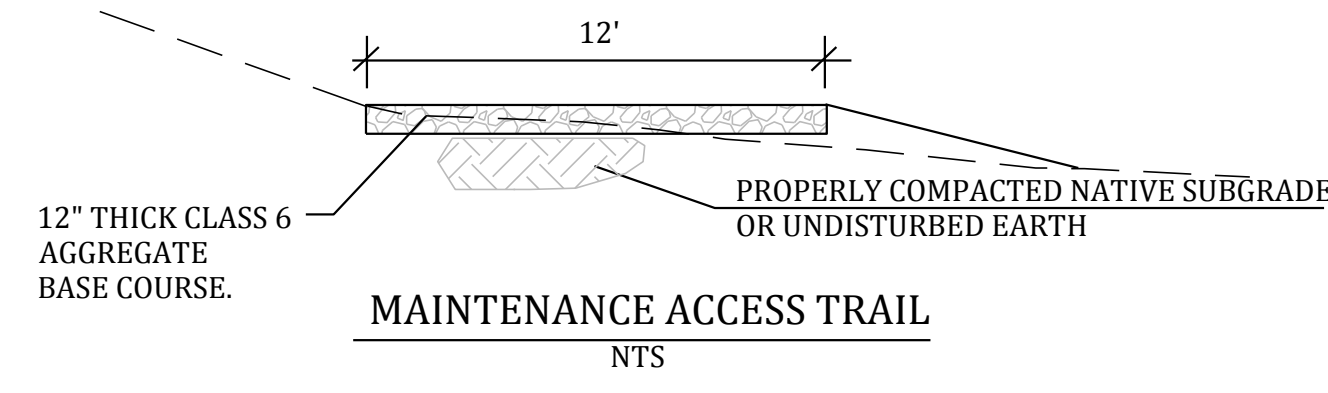


SUMMARY OF EARTHWORK ^①		
CUT		CY
FILL (w/20% SHRINKAGE)		CY
NET HAUL		CY

① QUANTITIES SUMMARIZED ARE PROVIDED FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL INDEPENDLY VERIFY EARTHWORK QUANTITIES AS PART OF BIDDING THE GRADING WORK SHOWN ON THE DESIGN PLANS.

If the limits of construction is the same as the limits of disturbance then please label this "limits of disturbance/construction."

- EROSION CONTROL LEGEND**
- LIMITS OF DISTURBANCE
 - - - PROPERTY LINE
 - VTC VEHICLE TRACKING CONTROL
 - IP INLET PROTECTION
 - CWA CONCRETE WASHOUT AREA
 - SSA STABILIZED STAGING AREA
 - Silt Fence
 - FLOODZONE X
 - FLOODZONE AE



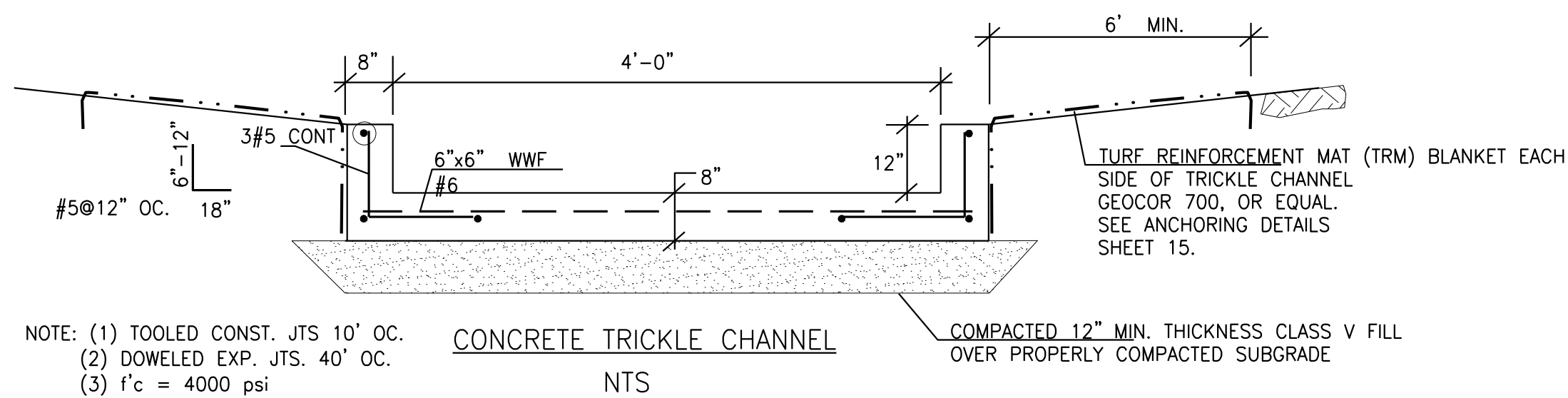
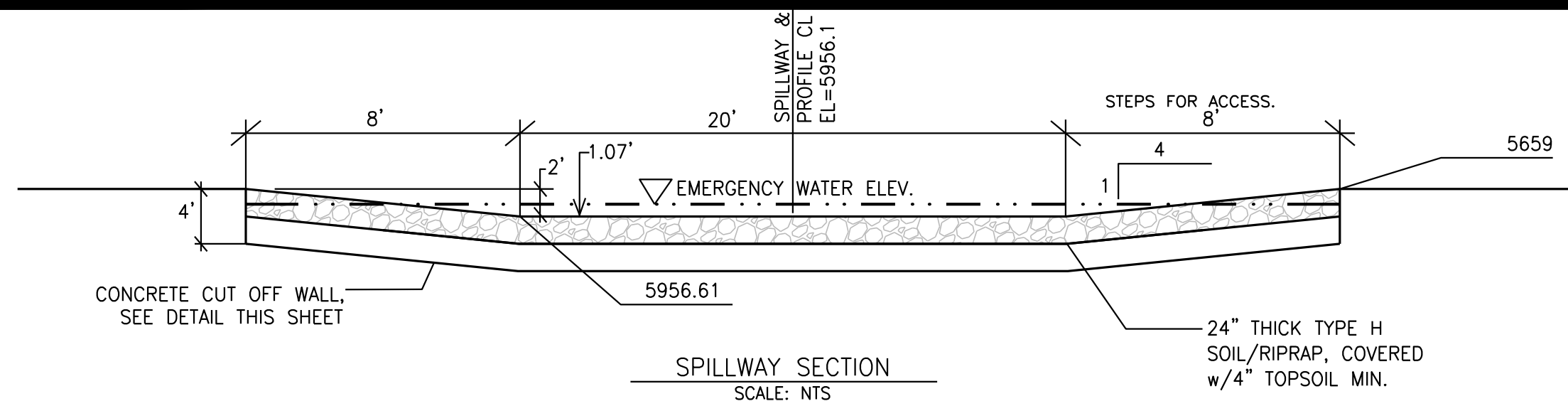
- PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES**
- All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
 - Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any unclassified fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
 - Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
 - Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
 - The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
 - All grading shall be in conformance with "Subsurface Investigation, 1755 East Las Vegas, Colorado Springs, Colorado", prepared by Entech Engineering, April 2019.
 - Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
 - Grading contours shown on this plan are to final grade.
 - Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
 - No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
 - Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
 - Contractor is responsible for providing erosion control measures as approved by the El Paso County PCD Engineering Division and as may be required by the El Paso County Inspector.
 - All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocor 700 or equal.
 - The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
 - All soils used for fill must be approved by a representative of the Geotechnical Engineer.
 - All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
 - The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
 - No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompacted after rainfall if necessary, to obtain proper moisture density relation.
 - Additional erosion control structures and/or grading may be required at the time of construction.
 - Sediment removal for erosion control facilities shall be performed continuously for proper function.
 - Base mapping was provided by LDC, Inc, date Sept. 2018.
 - Proposed Construction Schedule:
 - Begin Construction: pending
 - End Construction: pending
 - Total Site Area = 44.8 Acres
 - Area to be disturbed = 22 Acres (est.).
 - Existing 100-year runoff coefficient = 0.65
 - Proposed 100-year runoff coefficient = 0.65
 - Existing Hydrologic Soil Groups: A/B
 - (B Ustic Torrifluvents)
 - Site is currently developed and covered with native grasses on moderate to steep slopes (3%-6%).
 - Site is located in the Fountain Creek Drainage Basin.
- The letter of intent indicates that there are existing trees. Please include that in your existing vegetation description.
- The site is in the Spring Creek (FOFO4200) Drainage basin. Please revise

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

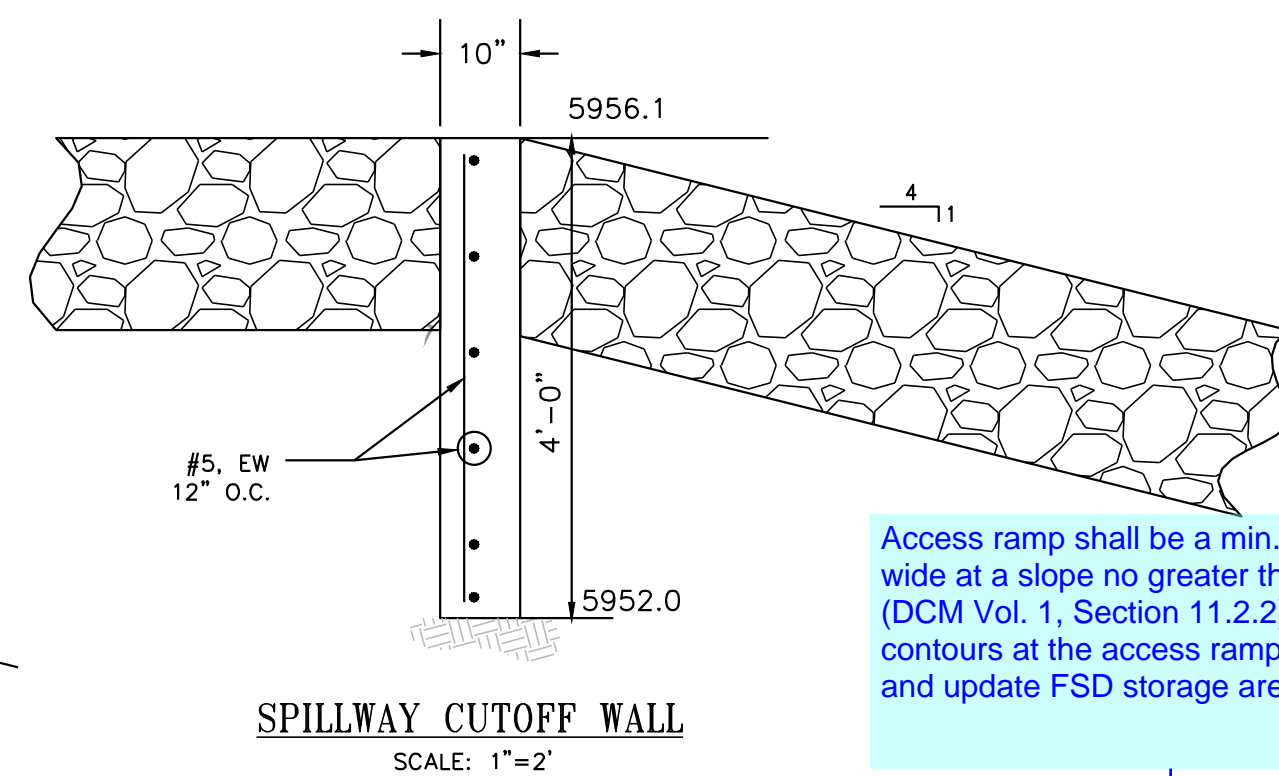
ROCKY TOP RESOURCES
OVERLOT GRADING & EROSION CONTROL PLAN
TRACT 7 VALLEY GARDEN SUBDIVISION
1755 EAST LAS VEGAS STREET
COLORADO SPRINGS, COLORADO

Project No.:	17066
Date:	August, 2019
Design:	RNW
Drawn:	EAK
Check:	RNW
Revisions:	

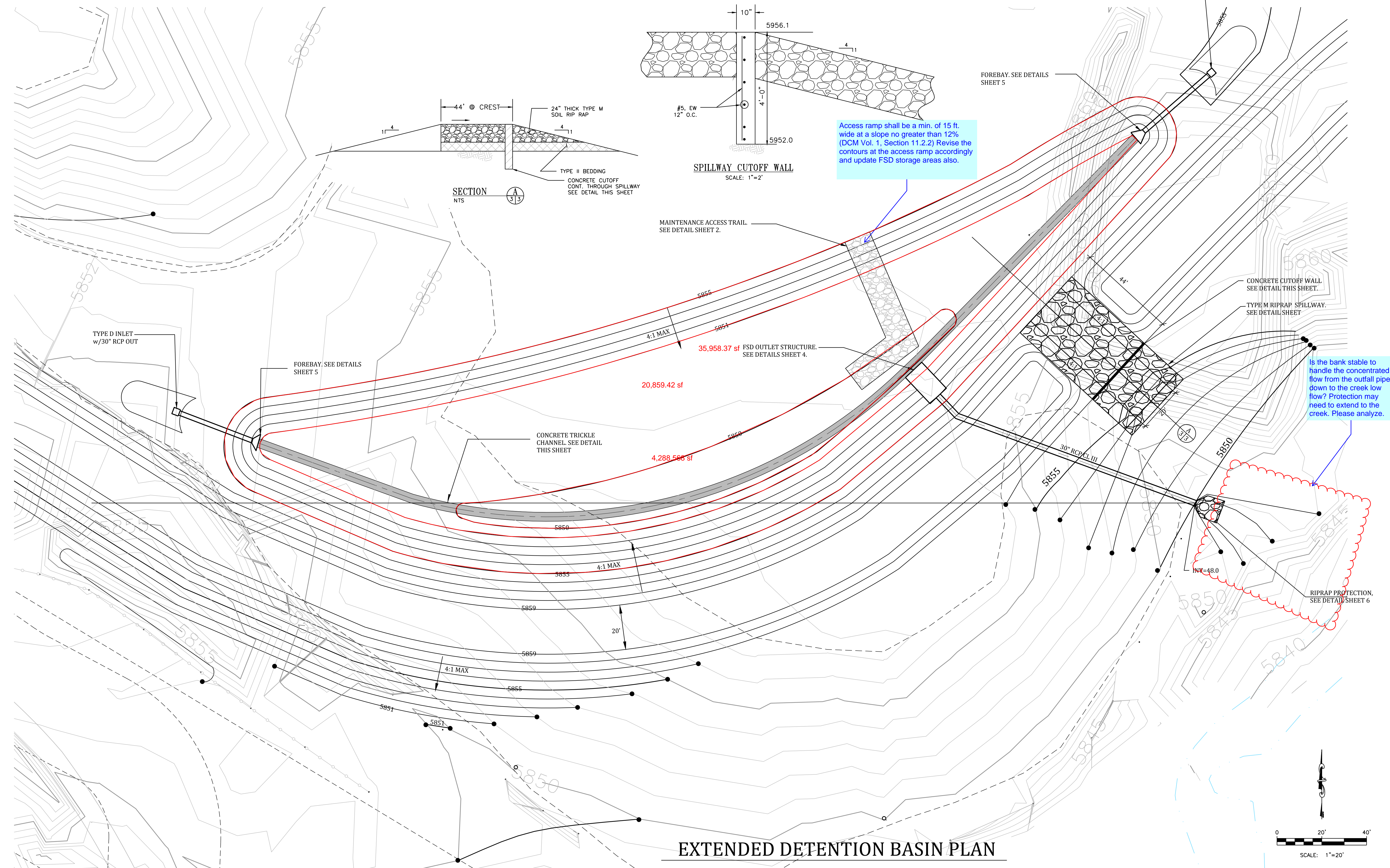
2



NOTE: (1) TOOLED CONST. JTS. 10" OC.
(2) DOWELED EXP. JTS. 40" OC.
(3) f'c = 4000 psi



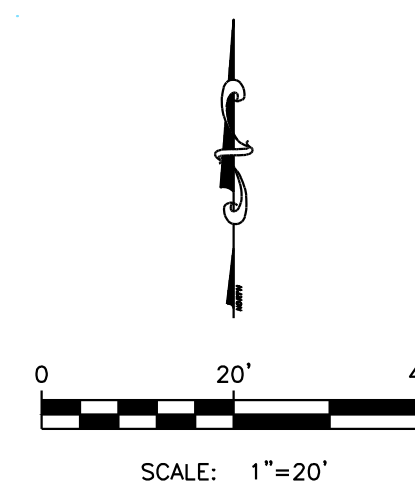
SECTION
NTS



Access ramp shall be a min. of 15 ft. wide at a slope no greater than 12% (DCM Vol. 1, Section 11.2.2) Revise the contours at the access ramp accordingly and update FSD storage areas also.

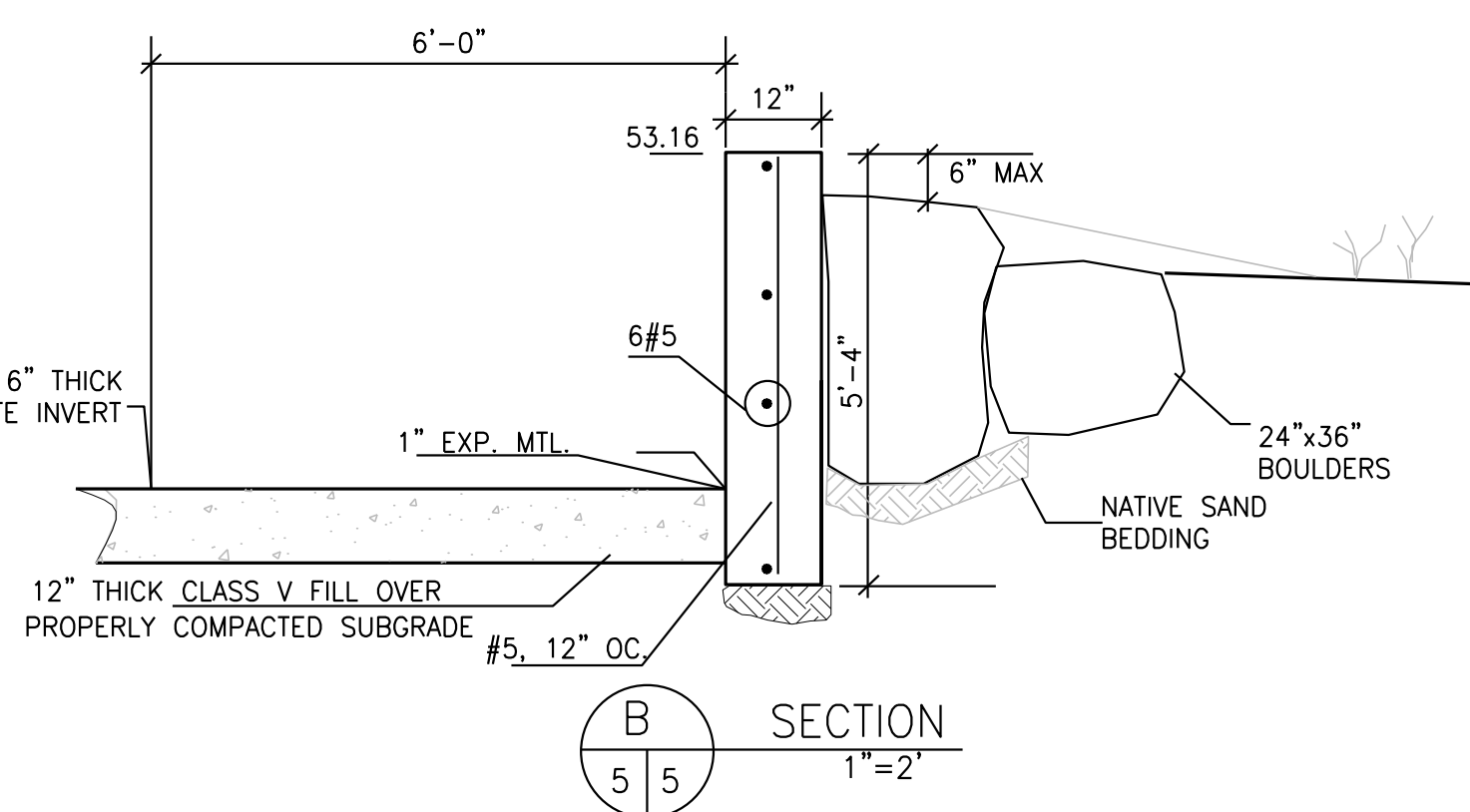
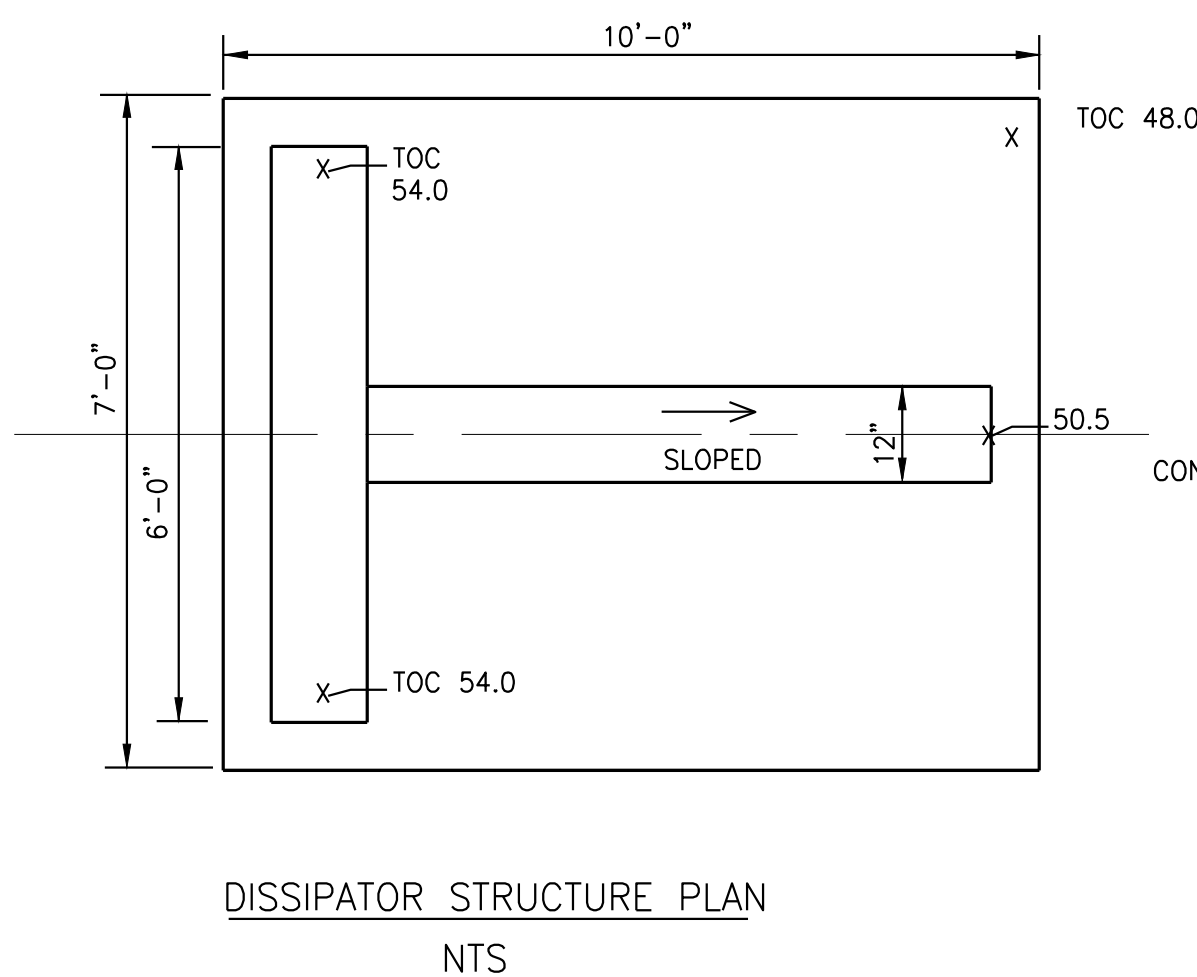
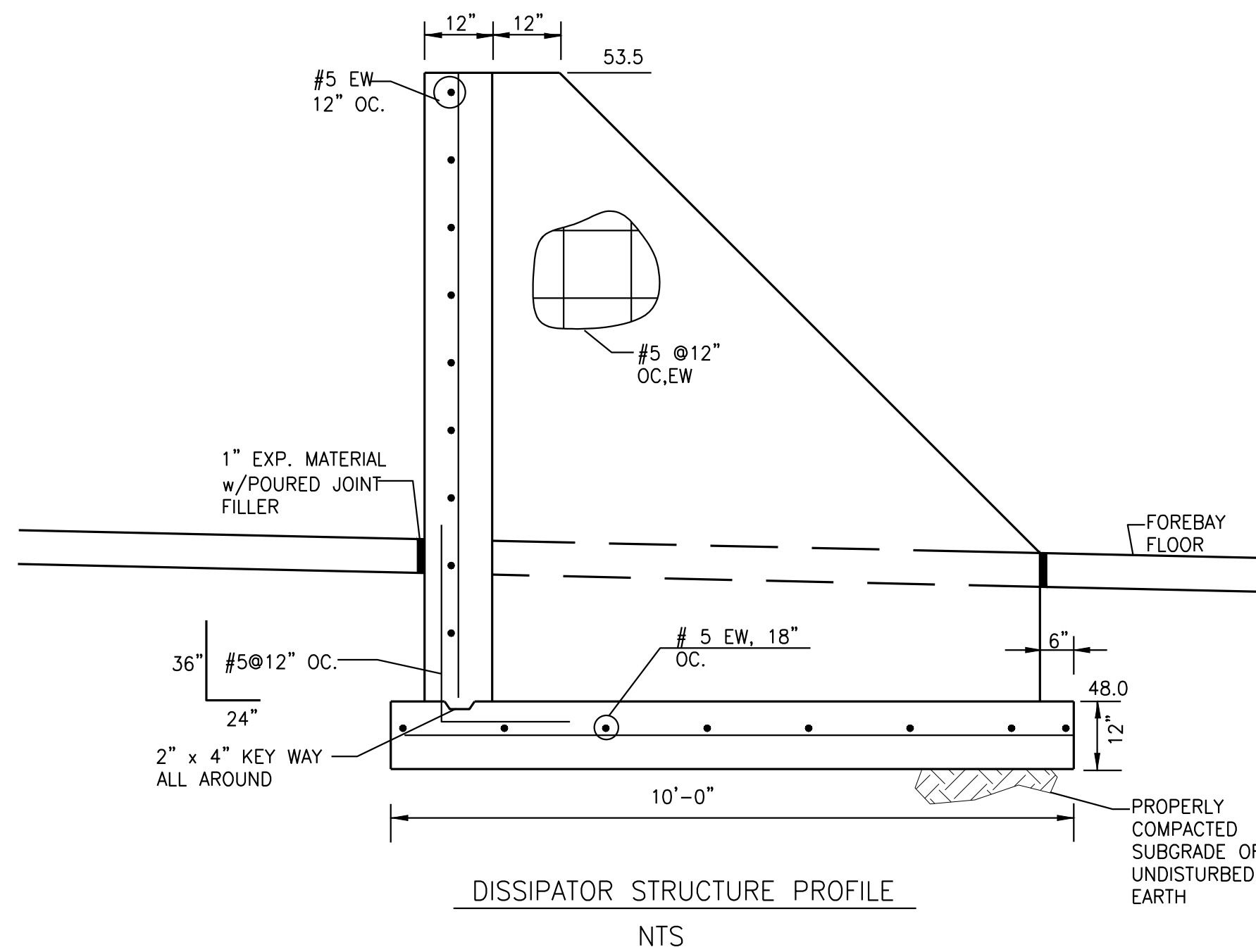
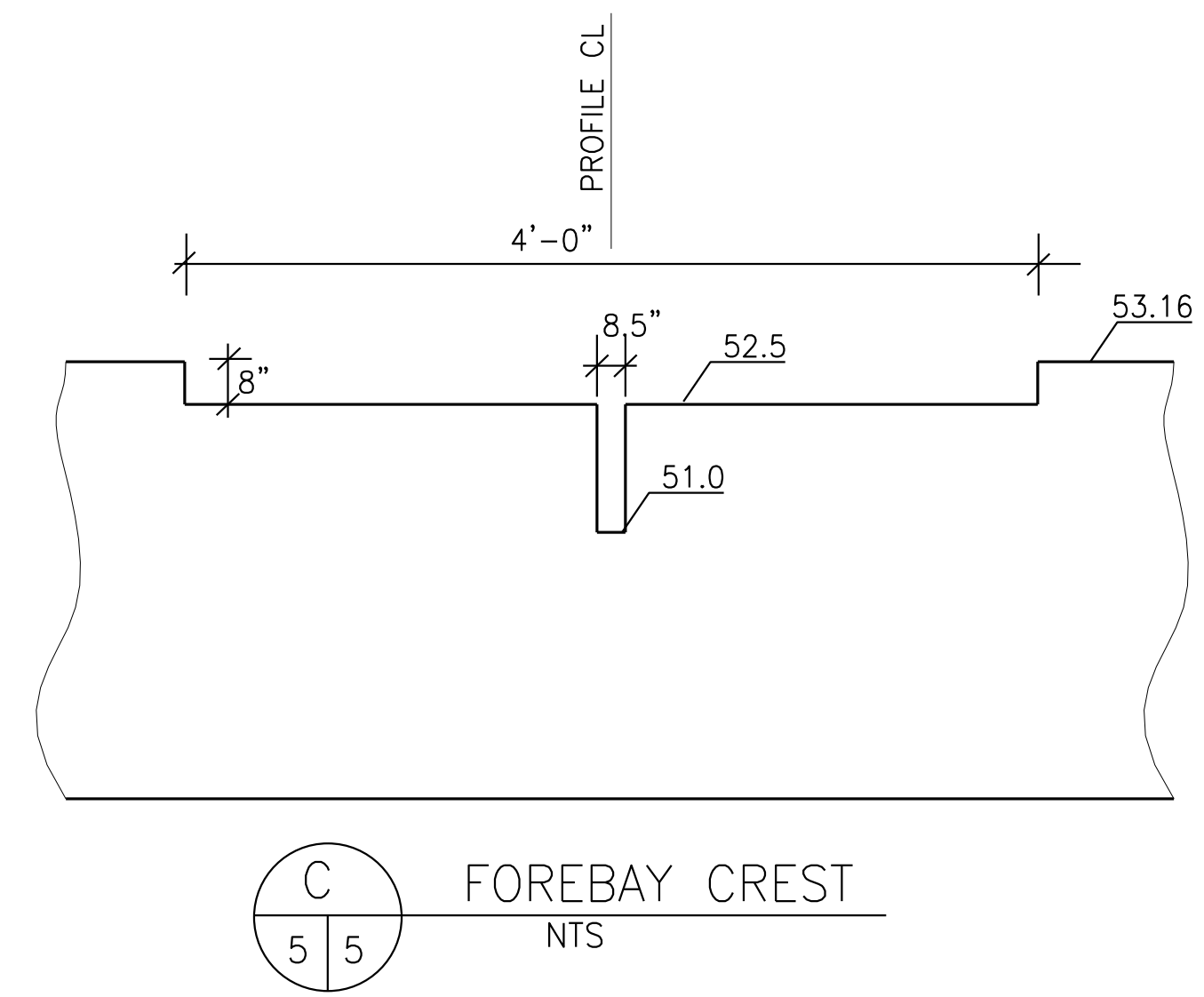
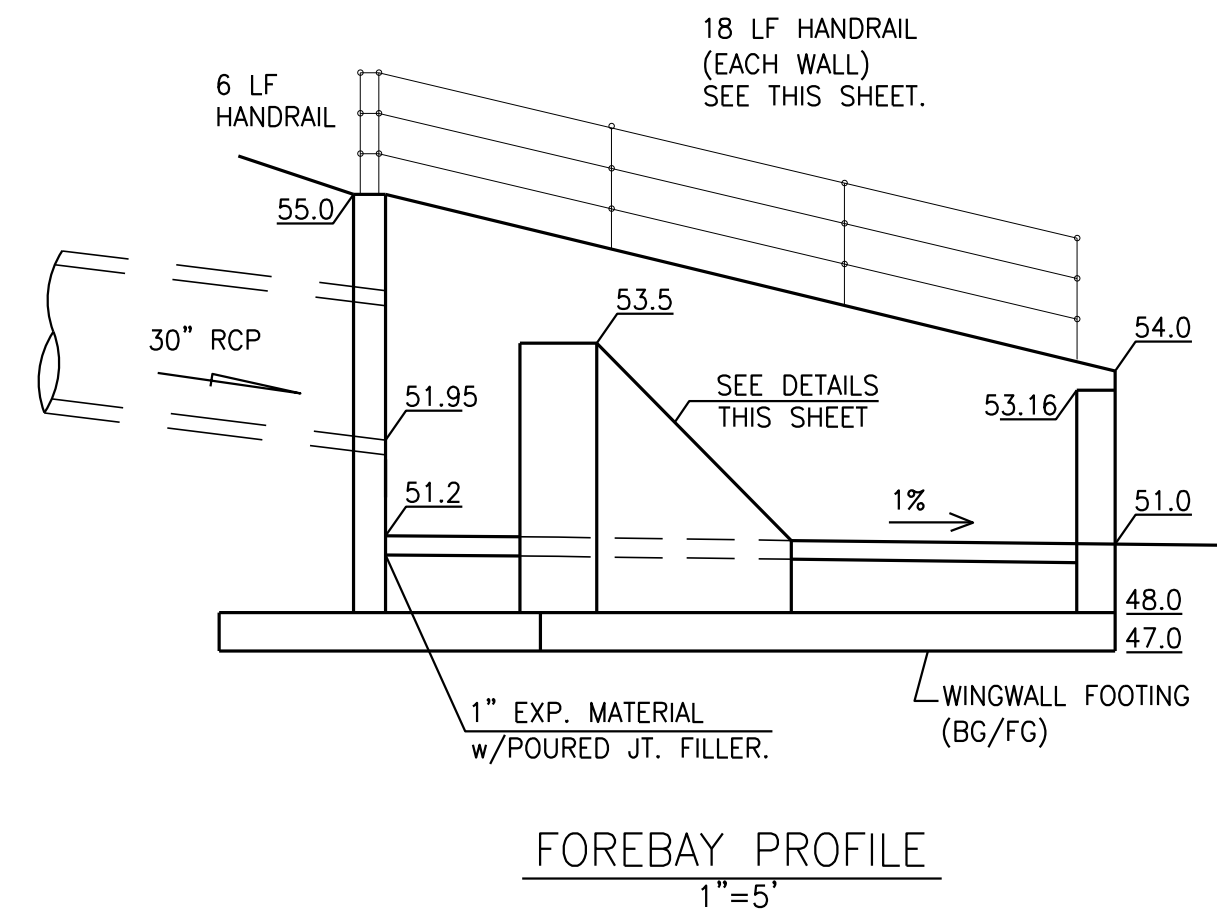
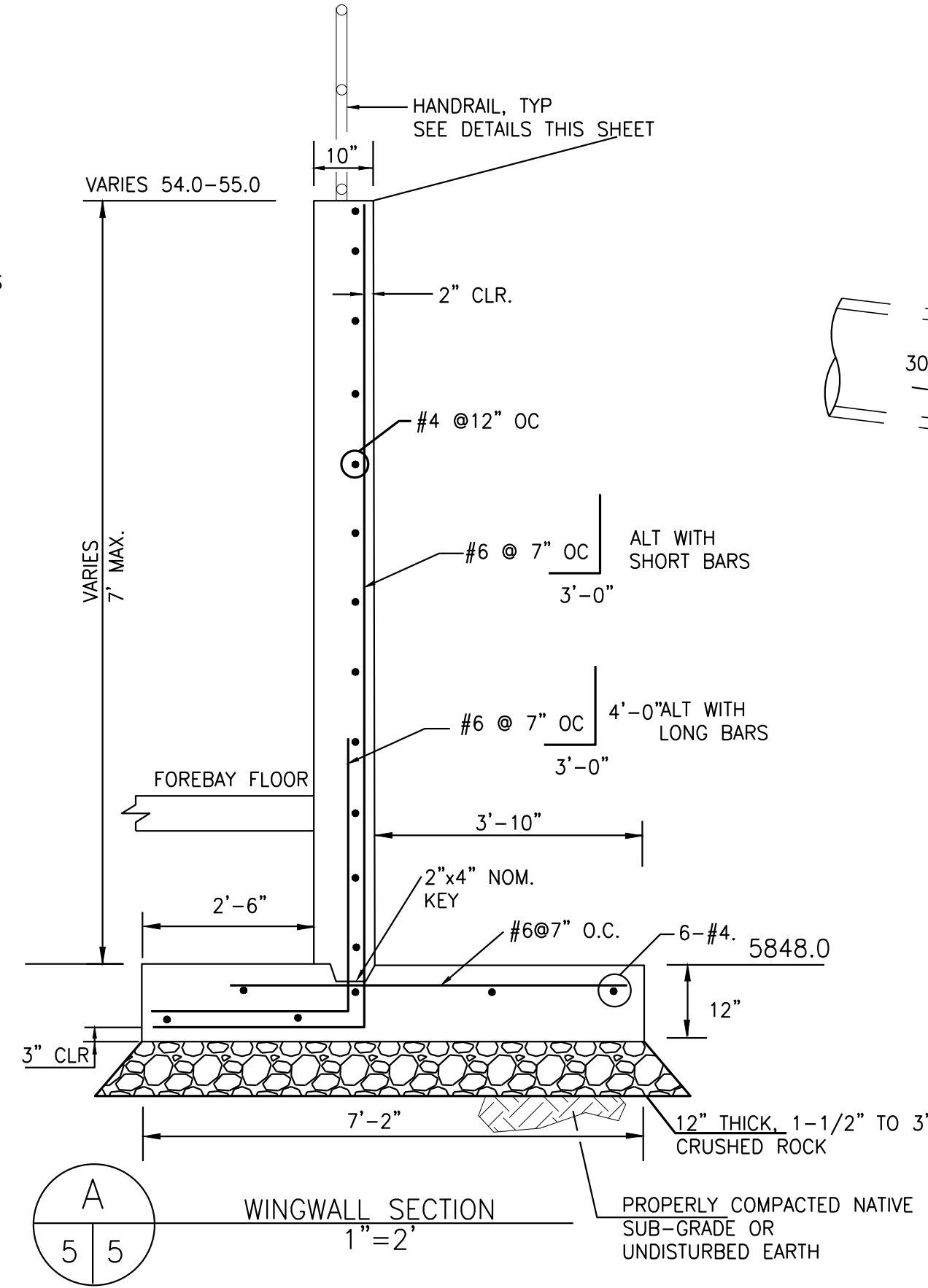
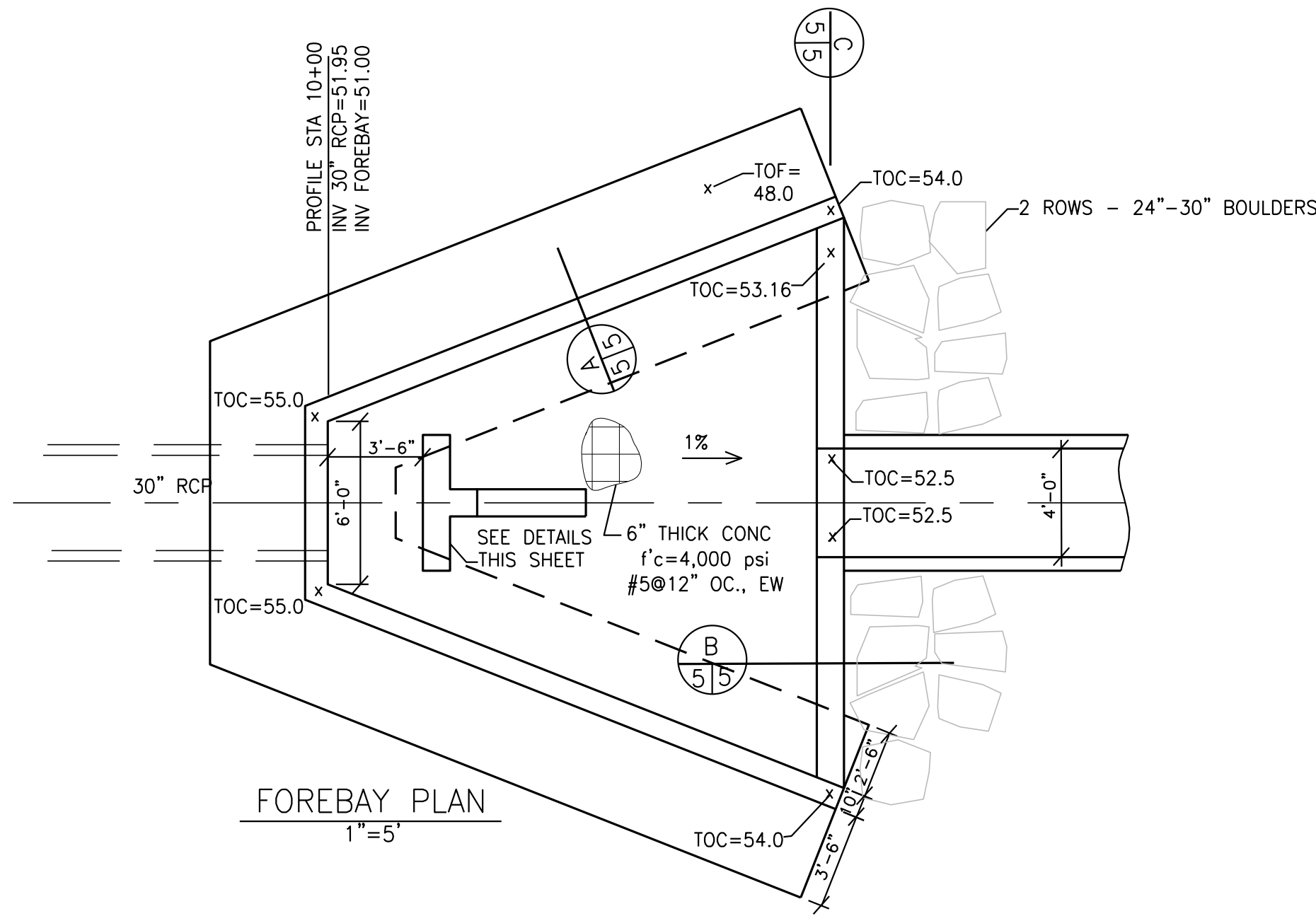
Is the bank stable to handle the concentrated flow from the outfall pipe down to the creek low flow? Protection may need to extend to the creek. Please analyze.

EXTENDED DETENTION BASIN PLAN

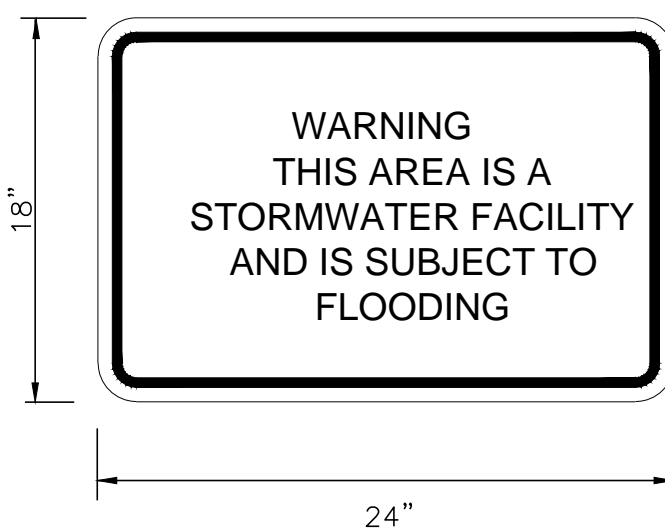


ROCKY TOP RESOURCES EXTENDED DETENTION BASIN PLAN TRACT 7 VALLEY GARDEN SUBDIVISION 1755 EAST LAS VEGAS STREET COLORADO SPRINGS, COLORADO

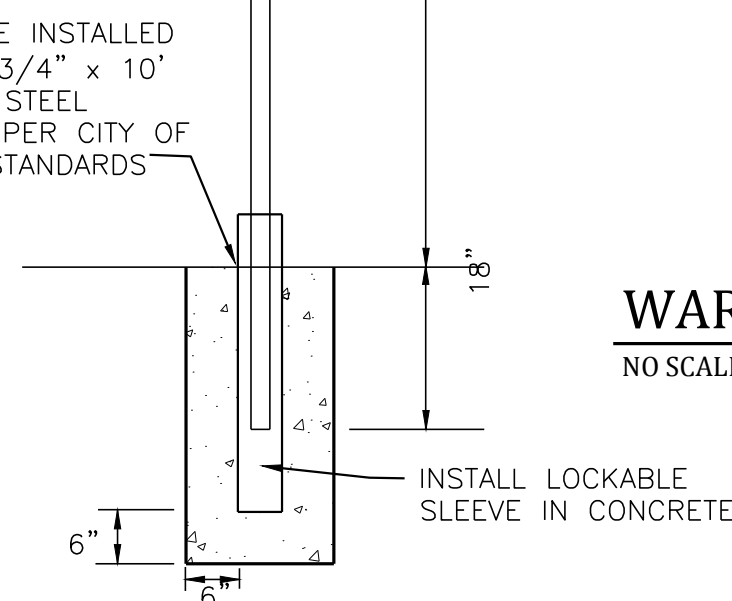
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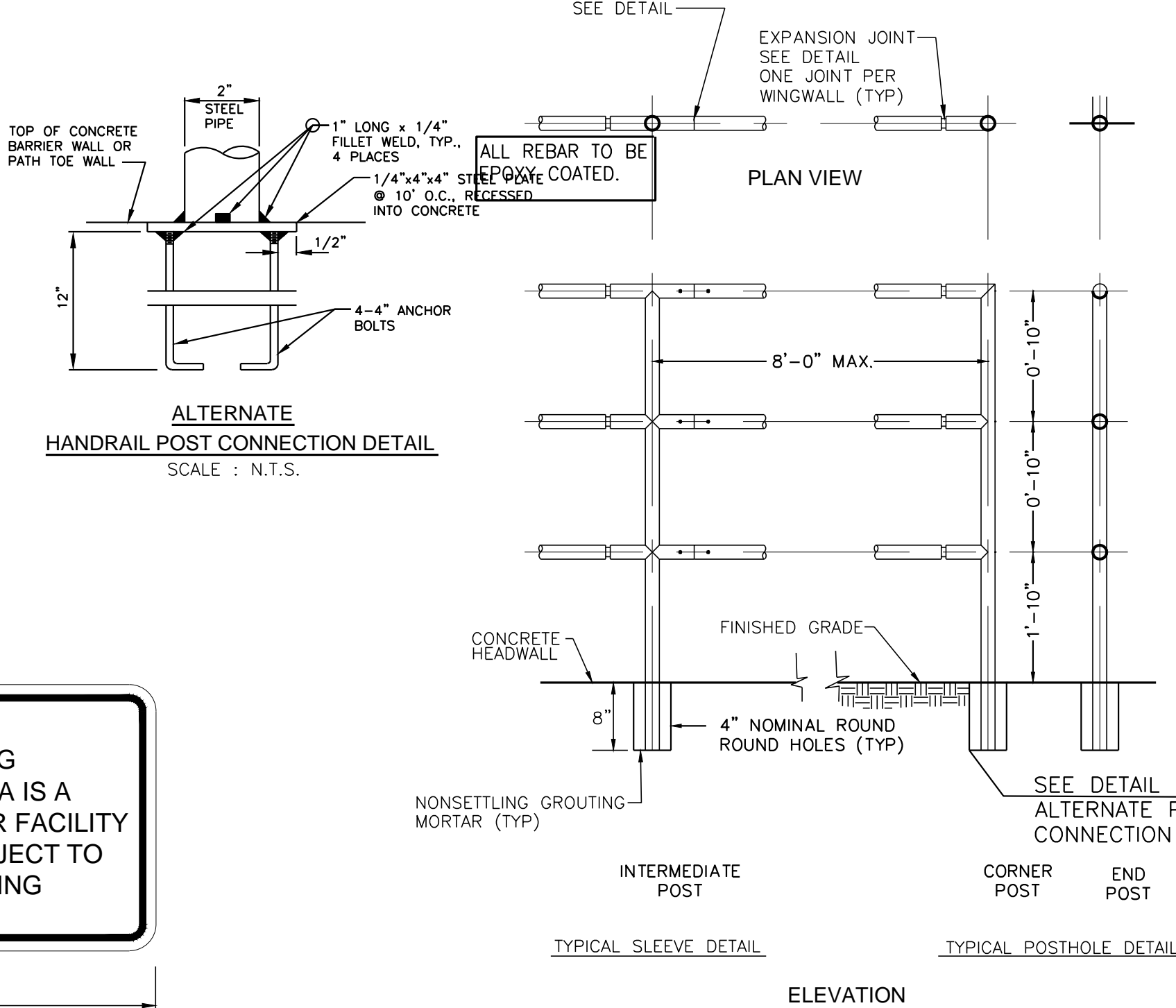
WARNING
THIS AREA IS A
STORMWATER FACILITY
AND IS SUBJECT TO
FLOODING



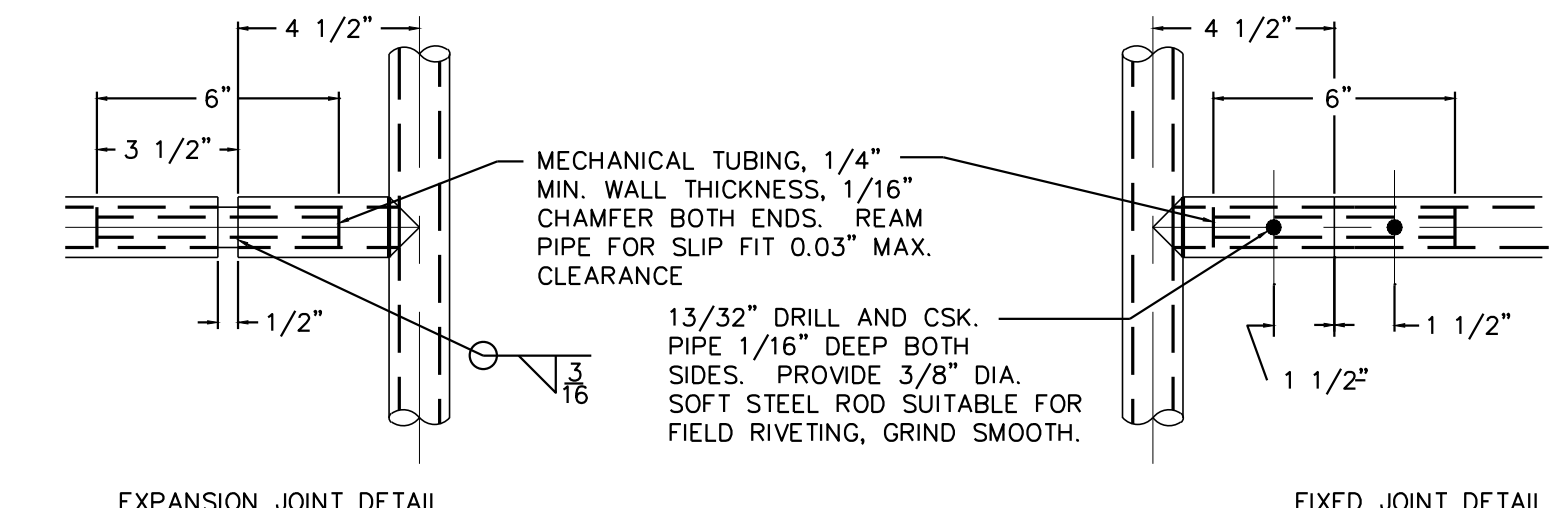
WARNING SIGN



WARNING SIGN
NO SCALE



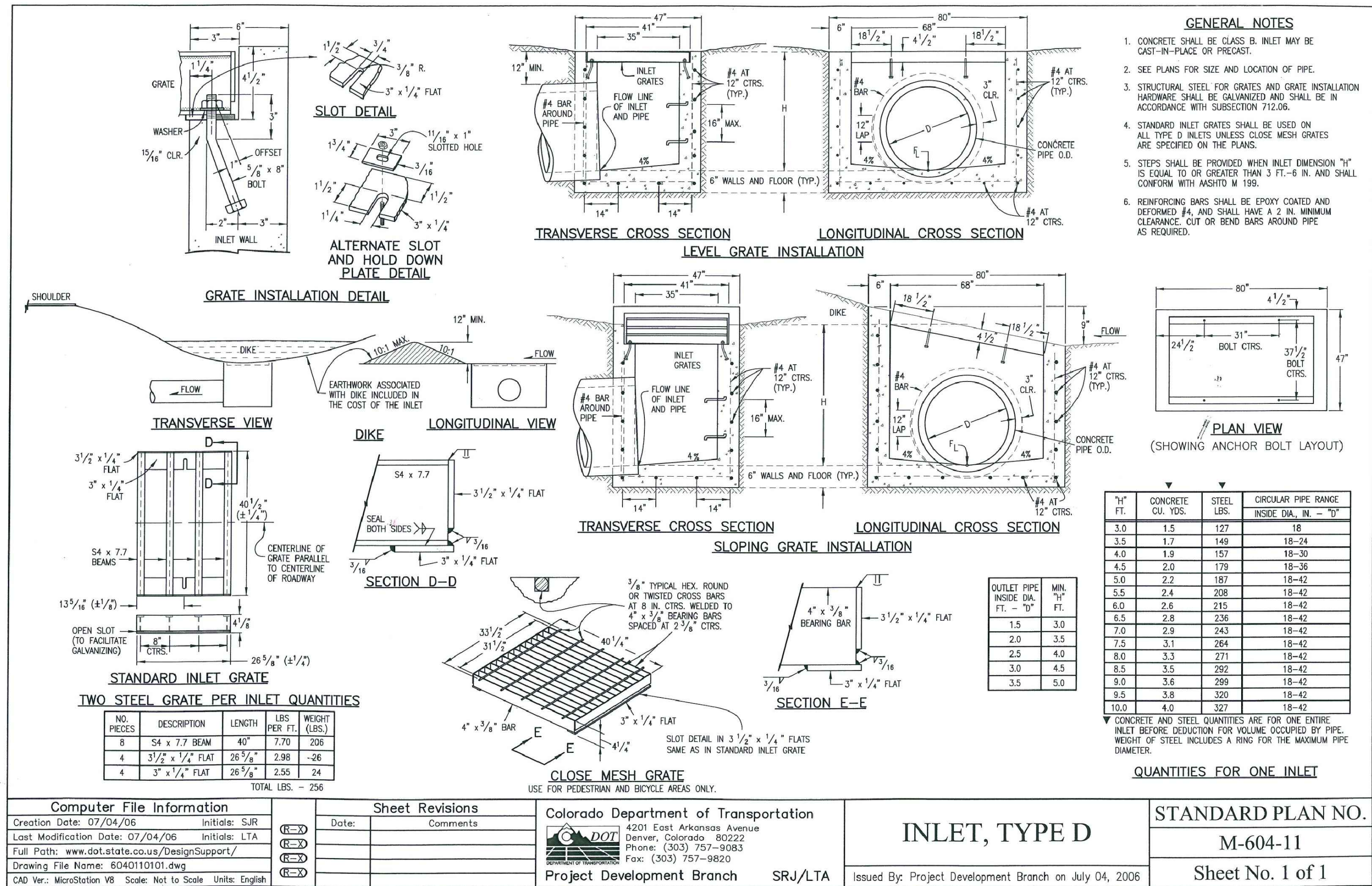
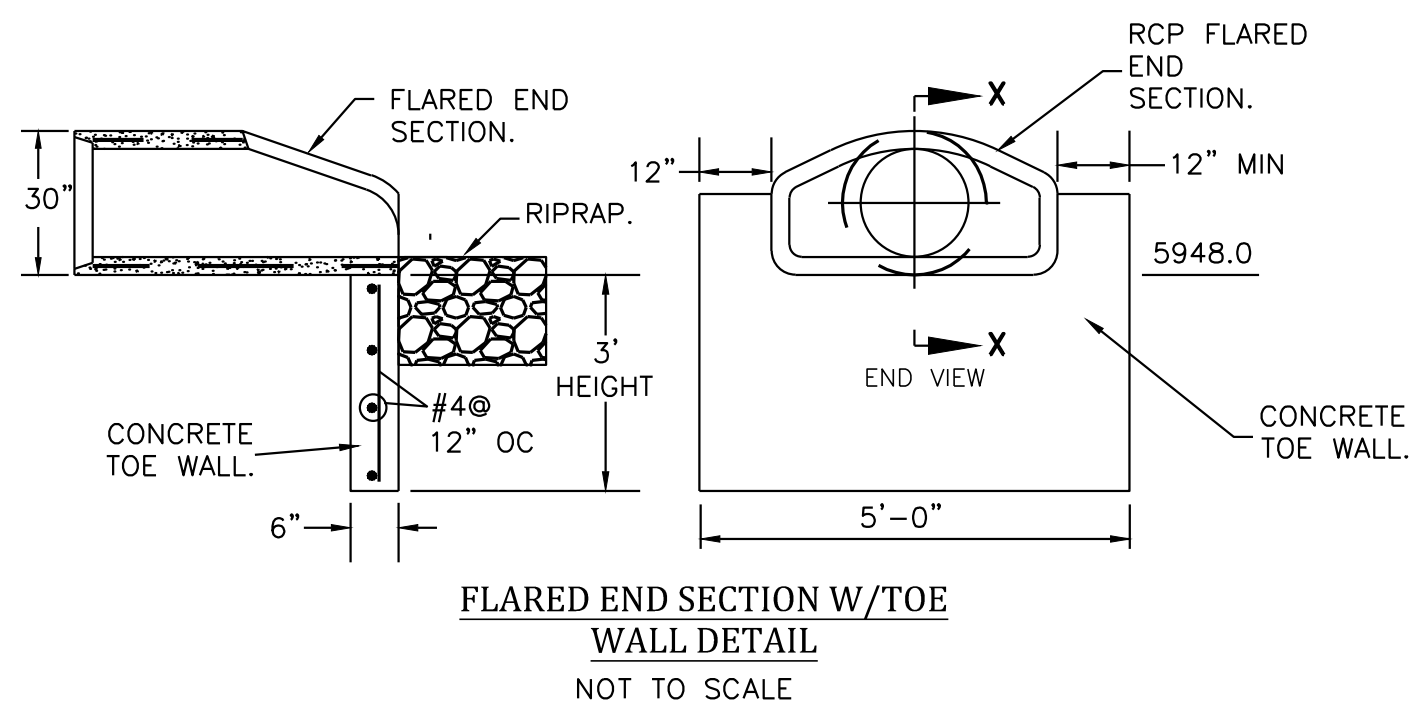
HANDRAIL DETAIL
SCALE: NTS



HANDRAIL NOTES
ALL HANDRAIL SHALL BE FABRICATED WITH NEW 2" DIAMETER STANDARD WEIGHT TUBING.
WELD ALL PIPE JOINTS WITH 1/8" REINFORCED WELDS AND DRESS
CORNERS AND EDGES OF ALL BARS, PLATES AND PIPE ENDS SHALL BE SANDED SMOOTH AND FREE OF BURRS.
ALL HANDRAIL MATERIAL REQUIRED FOR COMPLETE INSTALLATION SHALL BE PROVIDED.
HANDRAIL FINISH SHALL BE ONE COAT RED METAL PRIMER AND TWO COATS ENAMEL (RUSTOLEUM OR EQUIVALENT). COLOR SHALL BE APPROVED BY ENGINEER PRIOR TO APPLICATION.

ROCKY TOP RESOURCES EXTENDED DETENTION BASIN DETAILS TRACT 7 VALLEY GARDEN SUBDIVISION 1755 EAST LAS VEGAS STREET COLORADO SPRINGS, COLORADO

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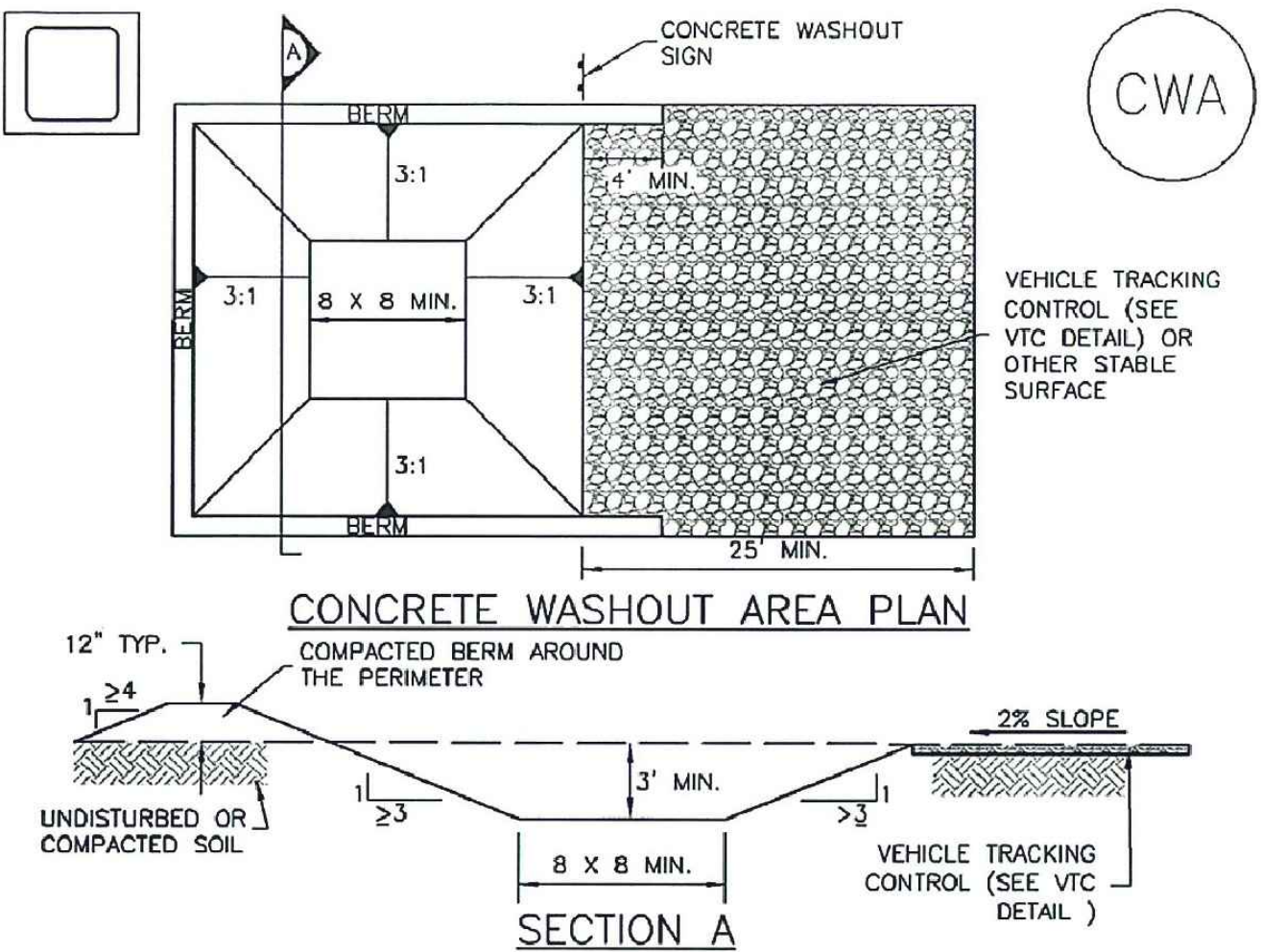


TYPE D INLET

ROCKY TOP RESOURCES
 MISCELLANEOUS AND STANDARD DETAILS
 TRACT 7 VALLEY GARDEN SUBDIVISION
 1755 EAST LAS VEGAS STREET
 COLORADO SPRINGS, COLORADO

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Concrete Washout Area (CWA) MM-1



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-CWA INSTALLATION LOCATION.
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR LAID ABOVE GROUND STORAGE ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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MM-1 Concrete Washout Area (CWA)

CWA 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.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- 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.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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

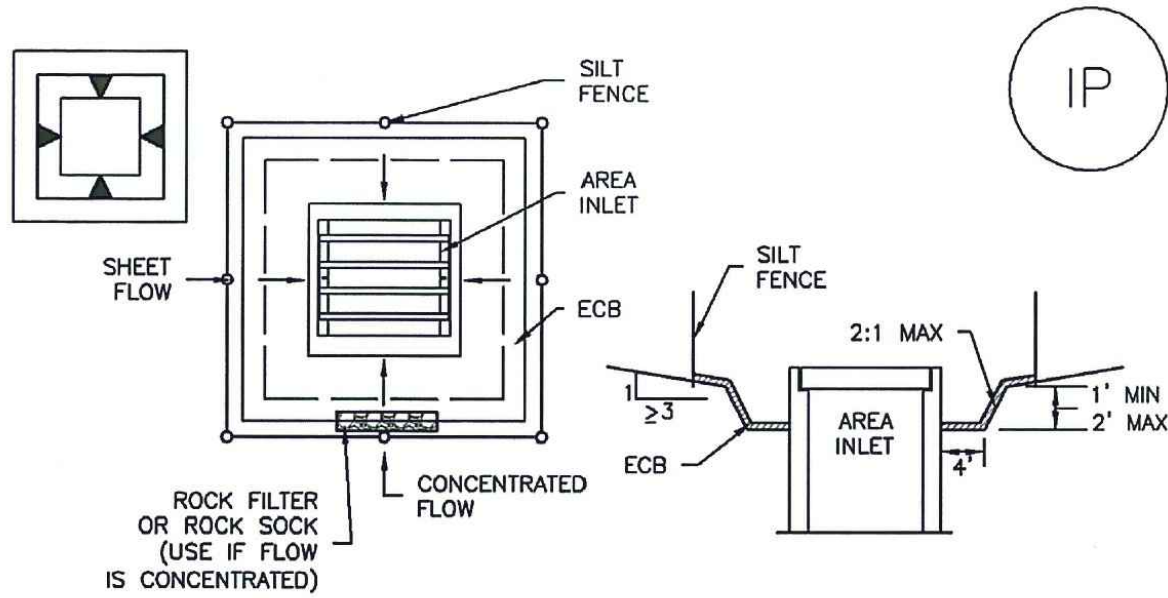
STANDARD EPC GRADING AND EROSION CONTROL NOTES

- Construction may not commence until a Construction Permit is obtained from Planning and Community Development Department (PCD) and a Preconstruction Conference is held with PCD Inspections.
- 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.
- 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.
- A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. During construction the SWMP is the responsibility of the designated Stormwater Manager. The SWMP shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP is approved and a notice to proceed has been issued, the contractor may install the initial stage erosion and sediment control BMP's as indicated on the 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 PCD inspections staff.
- Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or earth disturbance, has been completed. Disturbed areas and stockpiles, which are not at final grade but will remain dormant for longer than 30 days, shall also be mulched within 21 days after interim grading. And area that is going to remain an interim for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP's shall be maintained until permanent soil erosion control measures are implemented and established.
- Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
- All persons engaged with earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMP's in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
- All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
- Any earth disturbance shall be conducted in such a manner so as to effectively reduce 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.
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
- 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.
- Erosion control blanketing is to be used on slopes steeper than 3:1.
- 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. BMPs may be required by El Paso County Department of Public Works if deemed necessary, based on specific conditions and circumstances.
- Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.
- 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.
- The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all constructions debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance and stormwater appurtenances as a result of site development.
- 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.
- 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.
- Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
- No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditchline.
- Individuals shall comply with the "Colorado Water Quality Control Act" (Title 25, Article8, 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 the 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.
- All construction traffic must enter/exit the site at approved construction access points.
- Prior to actual construction the permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site entitled "Subsurface Soil Investigation 1755 East Las Vegas Street, Colorado Springs, CO" prepared by Entech Engineering dated April 15, 2019 and should be considered a part of these plans.
- 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-disturbed 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.
- At least ten days prior to the anticipated start of construction, for projects that will disturb 1 acre or more, the owner or operator of 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, Colorado 80246-1530
Attn: Permits Unit

Please update these notes to the latest EPC grading and erosion control plan notes listed in the new GEC checklist that was submitted.

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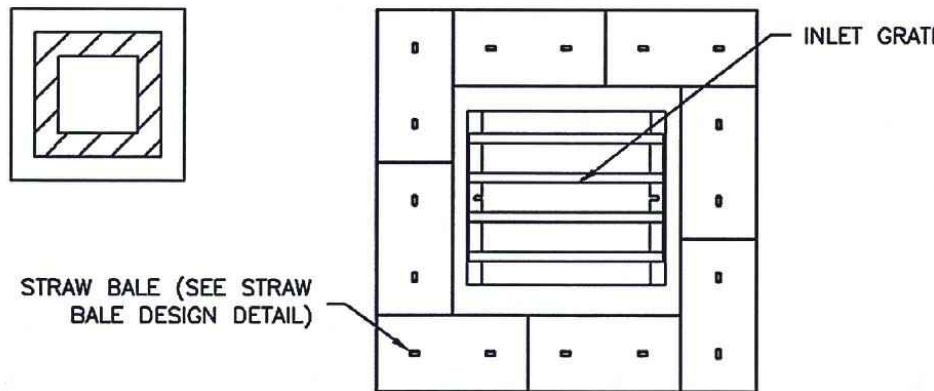
Inlet Protection (IP)



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 CONTRIBUTING DRAINAGE AREA.
- WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN 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 ABUTTING ONE ANOTHER.

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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)

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 1/4 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.

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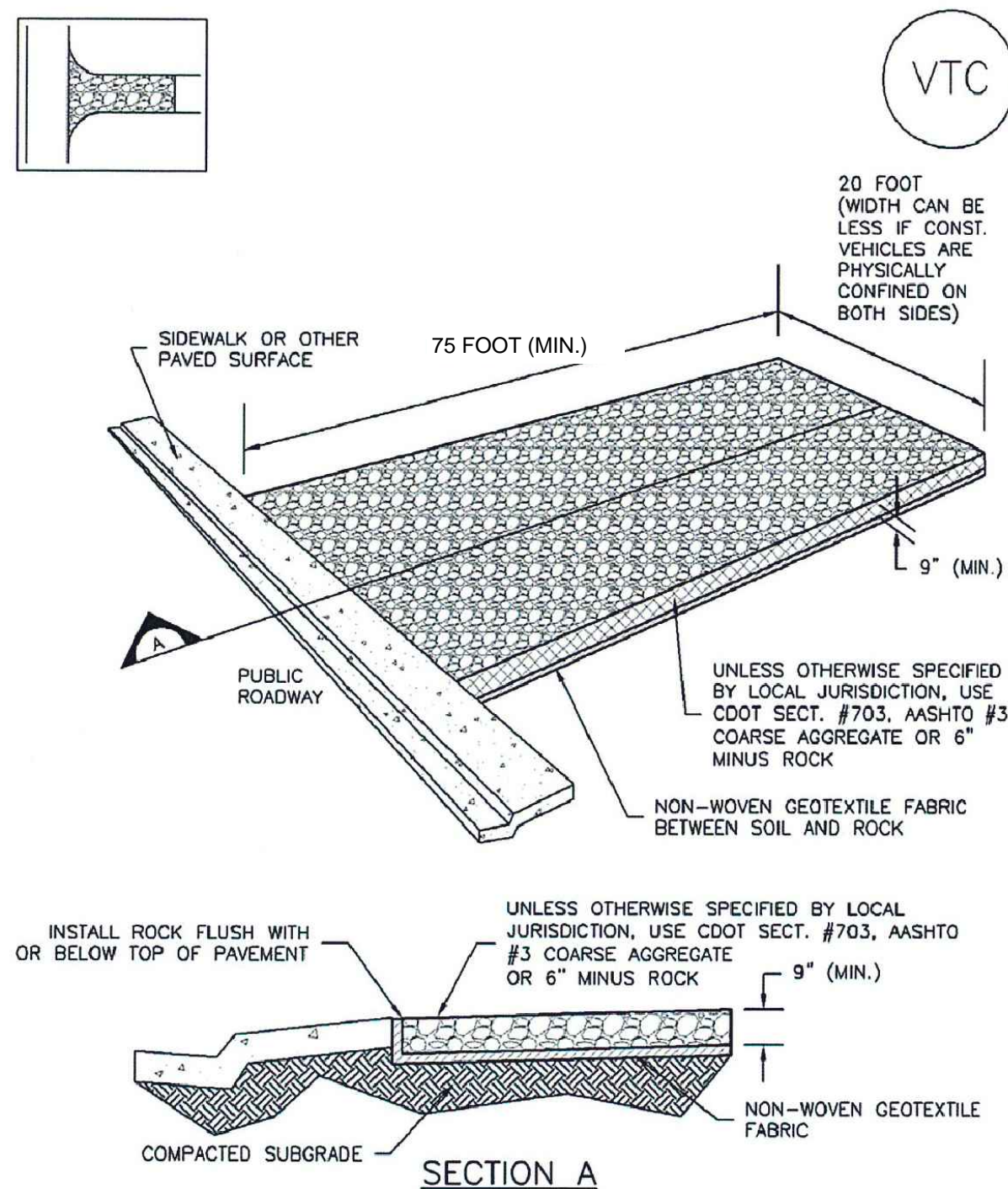
1. SEE PLAN VIEW FOR:
 - AREA OF SEEDING AND MULCHING.
 - TYPE OF SEED MIX
2. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, AND/OR SPURGE.
3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO REGULATING AGENCY UPON REQUEST.
4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT.
5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE SEEDING MIXTURE AND SEED MIXTURE SUPPLIED TO CONTRACTOR IS FORWARDED TO THE REGULATING AGENCY'S GESC IN OREGON.
6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).
7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY THE REGULATING AGENCY.
8. ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). HAUL ROADS AND OTHER COMPACTED AREAS SHALL BE LOOSENED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.
9. SOIL IS TO BE THOROUGHLY LOOSENED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE FREE OF ROCKS LARGER THAN 4 INCHES AND SOIL CLOSURES GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENED SHALL BE REJECTED.
10. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH. ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW. AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. OF STRAW PER ACRE.
11. IF THE PERMITTEE DEMONSTRATES TO THE REGULATING AGENCY THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.
12. SEEDING AND MULCHING SHALL BE COMPLETED WITHIN 30 DAYS OF INITIAL EXPOSURE OR 7 DAYS AFTER GRADING IS SUBSTANTIALLY COMPLETE IN A GIVEN AREA (AS DEFINED BY THE REGULATING AGENCY). THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
13. MULCH SHALL BE APPLIED WITHIN 24 HOURS OF SEEDING.
14. TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

1. SEEDED AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
 1. THREE (3) PLANTS PER SQUARE FOOT WITH A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE DOUGLAS COUNTY-APPROVED MIX.
 2. NARROW AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
 3. FREE OF ERODED AREAS.
 4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.
3. REQUIRED COVERAGE FOR TURF GRASS AREAS SHALL BE DEFINED AS FOLLOWS:
 1. AT LEAST 80% VEGETATIVE COVER OF GRASS SPECIES PLANTED.
 2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
 3. FREE OF ERODED AREAS.
 4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.
4. REPAIRS AND SULLY AREAS SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE COUNTY.

SEED MIX	
AREAS DISTURBED BY THE EARTHWORK SHALL BE PERMANENTLY REVEGETATED WITH NATIVE GRASSES. NATIVE SEED MIX FOR THIS PROJECT SHALL BE AS FOLLOWS:	
SPECIES	lbs/acre
WESTERN WHEAT GRASS	<i>Paspopyrum smithii</i> 3.0
SIDEOTS GRAMA	<i>Bouteloua curtipendula</i> 2.0
SLENDER WHEAT GRASS	<i>Elymus trachycaulus</i> 2.0
LITTLE BLUESTEM	<i>Schizachyrium scoparium</i> 2.0
BLUE GRAMA	<i>Bouteloua gracilis</i> 0.5
SWITCH GRASS	<i>Panicum virgatum</i> 2.0
JUNE GRASS	<i>Koeleria cristata</i> 0.5
SAND DROPSIED	<i>Sporobolus cryptandrus</i> 0.5
	<hr/> 12.5 lbs
SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL.	
IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL.	
MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL OR HYDROMULCH.	

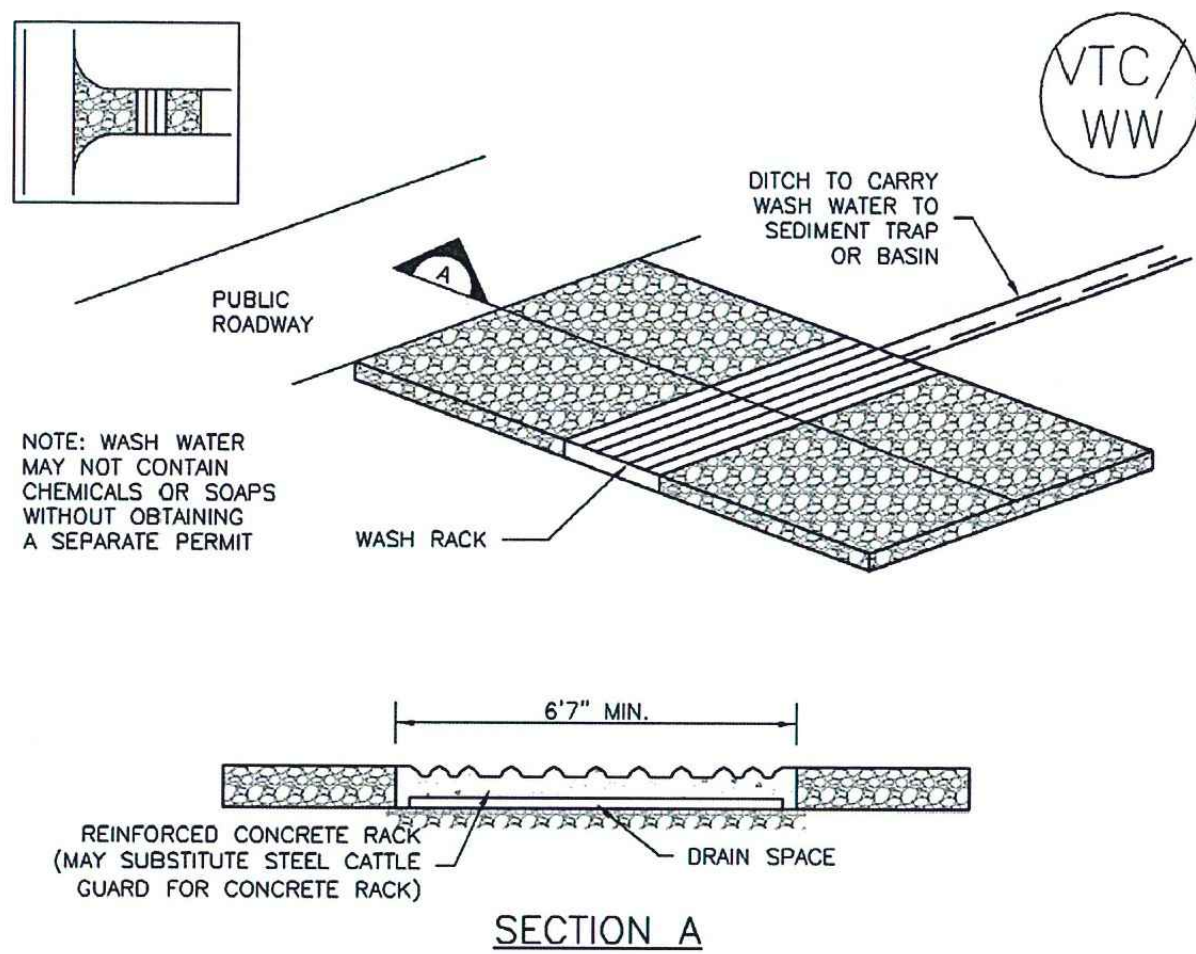


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YTC-3

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VTC-4

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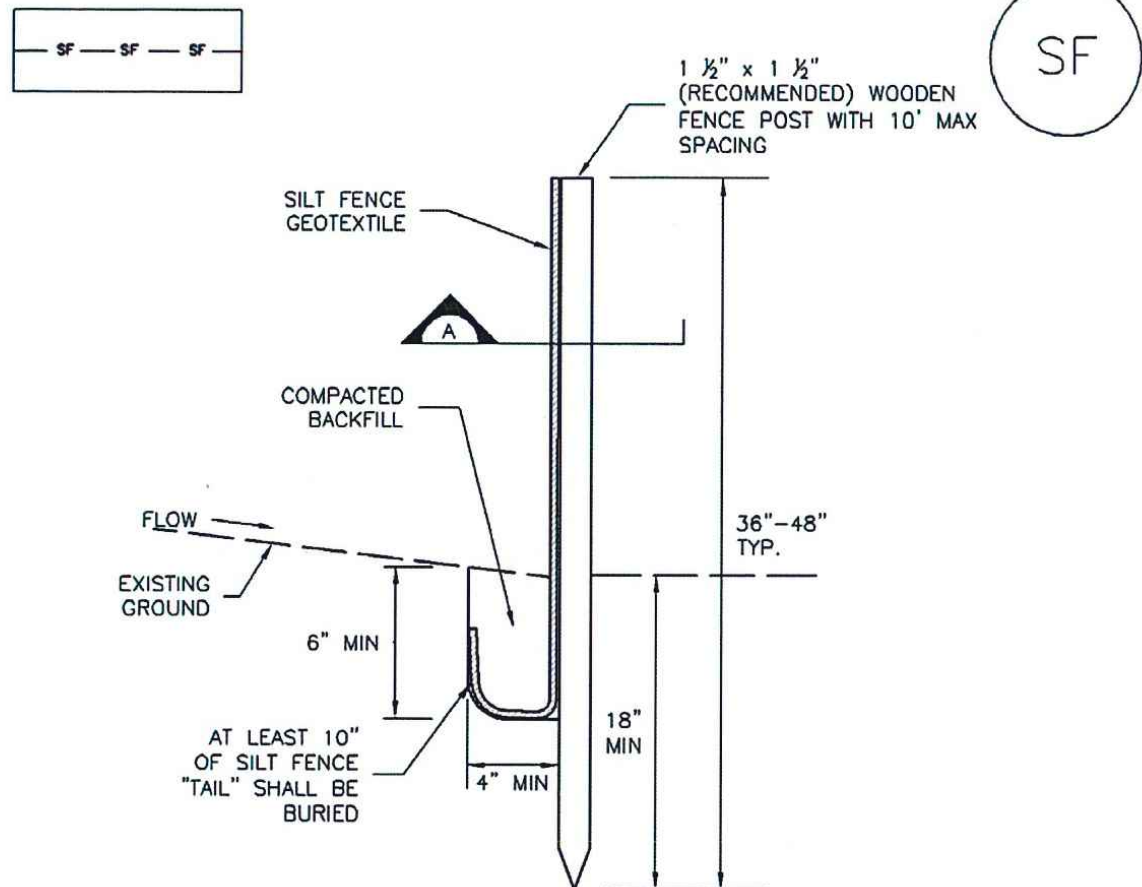


Diagram illustrating the assembly of two posts. The first post is rotated 90 degrees clockwise to join the second post. The resulting assembly shows the posts overlapping at the joint, with a note stating "POSTS SHALL OVERLAP AT JOINTS SO THAT NO GAPS EXIST IN SILT FENCE".

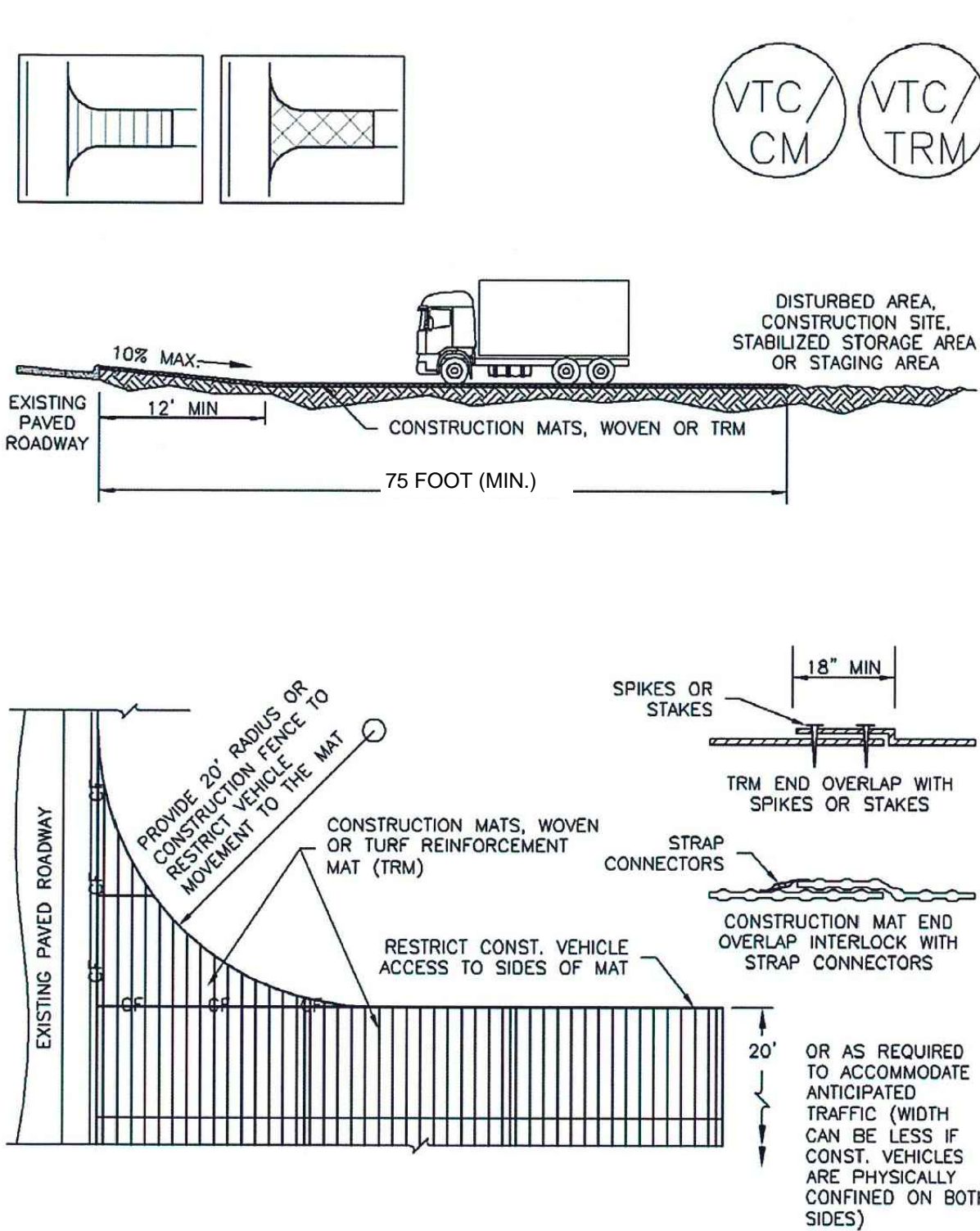
SF-1. SILT FENCE

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TC-6

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVEN FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE, NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. INSPECT 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 SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWNS OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

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

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VTC-6


1. SEE PLAN VIEW FOR
-LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
-TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED FOR SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINT WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. 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

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE 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 REPLACED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. SEDIMENT TRACKED 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.

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

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



Kiowa
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

ROCKY TOP RESOURCES
GRADING & EROSION CONTROL DETAILS
TRACT 7 VALLEY GARDEN SUBDIVISION
1755 EAST LAS VEGAS STREET
COLORADO SPRINGS, COLORADO

Project No.: 17066

Date: AUGUST 2019

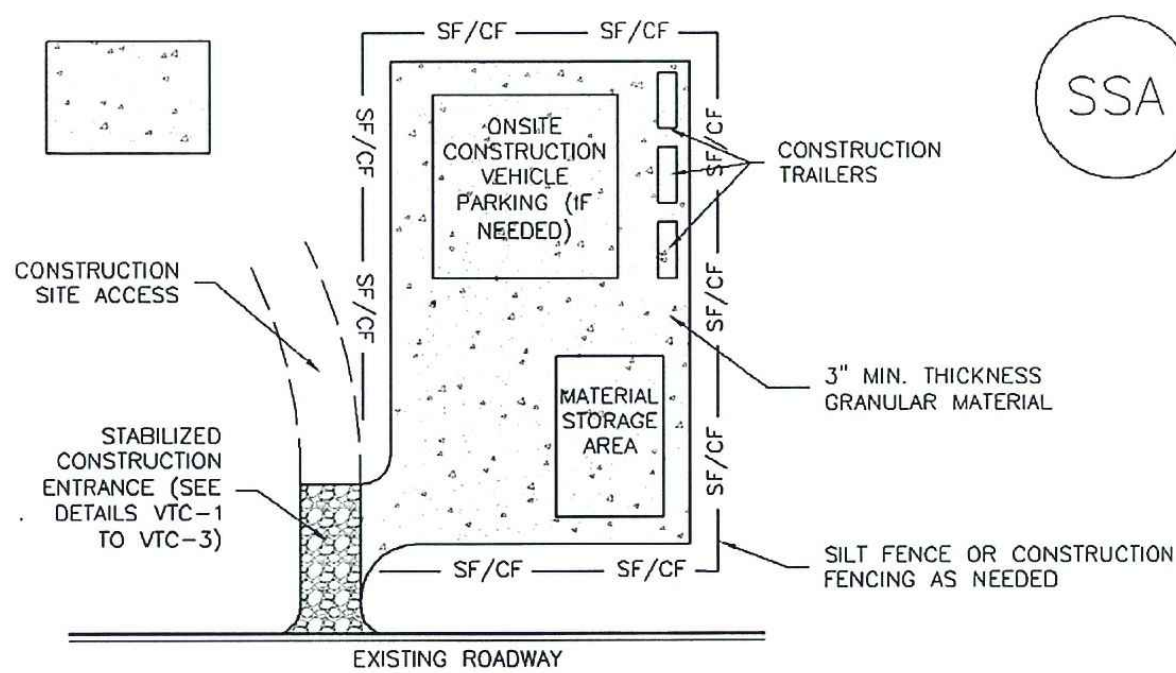
Design: RNW

Drawn: EAI

Check: RNW

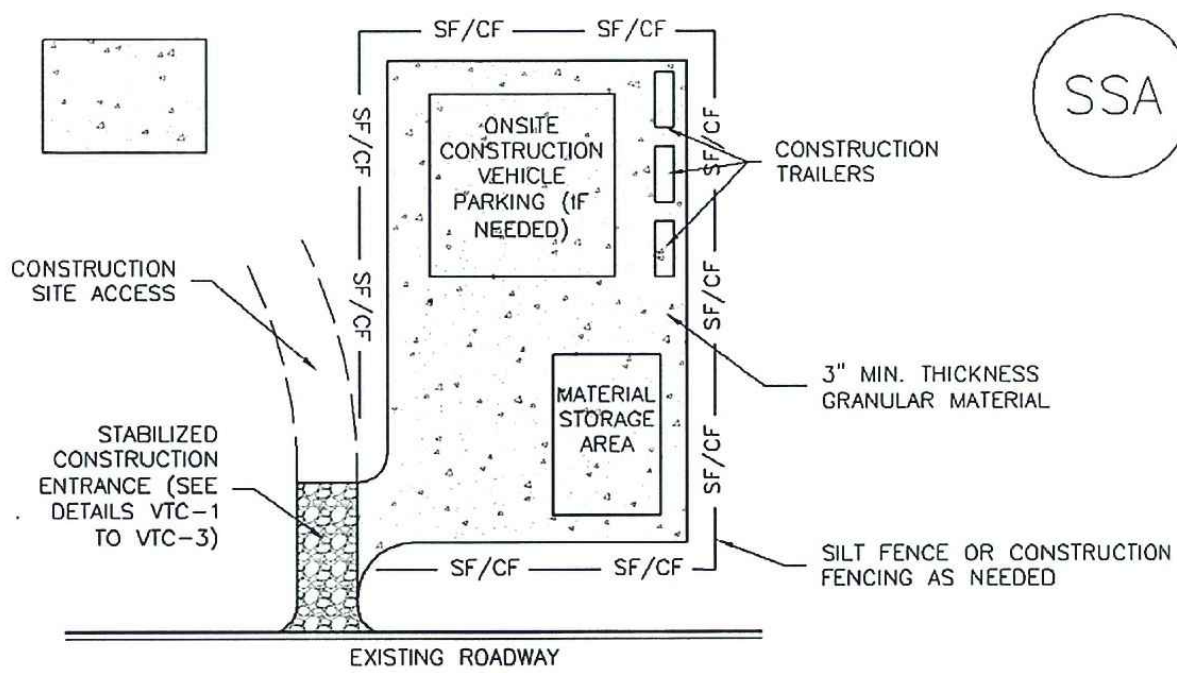
Revisions:

Stabilized Staging Area (SSA) SM-6



- 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.
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 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.

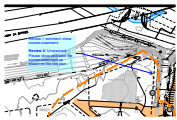
Stabilized Staging Area (SSA) SM-6



- STABILIZED STAGING AREA INSTALLATION NOTES**
1. SEE PLAN VIEW FOR
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Markup Summary

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Author: Daniel Torres
Date: 9/25/2019 10:10:08 AM
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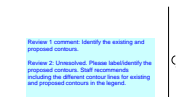
Review 1 comment: show access easement.

Review 2: Unresolved. Please show and label the access easement as shown on the site plan.



Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:12 AM
Color: ■

Please label the existing structures as was done in the previous submittal.



Subject: Text Box
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:13 AM
Color: ■

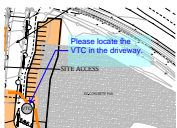
Review 1 comment: Identify the existing and proposed contours.

Review 2: Unresolved. Please label/identify the proposed contours. Staff recommends including the different contour lines for existing and proposed contours in the legend.



Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:20 AM
Color: ■

Please delineate a rough area for the SSA



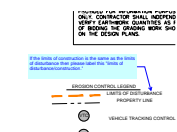
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Author: Daniel Torres
Date: 9/25/2019 10:10:20 AM
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Please locate the VTC in the driveway.



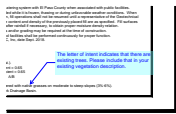
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Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:21 AM
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The site is in the Spring Creek (FOFO4200) Drainage basin. Please revise



Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:22 AM
Color: ■

If the limits of construction is the same as the limits of disturbance then please label this "limits of disturbance/construction."



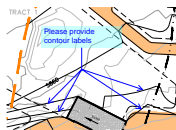
Subject: Callout
Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:22 AM
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The letter of intent indicates that there are existing trees. Please include that in your existing vegetation description.



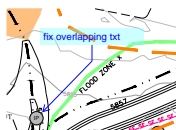
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Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:23 AM
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Please identify what this line type represents on the legend



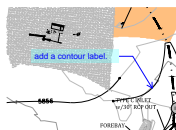
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Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:24 AM
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Please provide contour labels



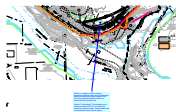
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Author: Daniel Torres
Date: 9/25/2019 10:10:25 AM
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fix overlapping txt



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Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:26 AM
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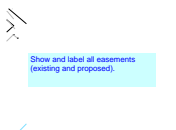
add a contour label.



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Date: 9/25/2019 10:10:27 AM
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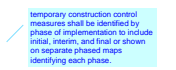
Review 1 comment: If this is acting a temporary sediment basin during construction, label it as such and provide a detail in this plan. Show that the sediment basin can contain the flow from the site.

Review 2: Unresolved. The drainage report indicates that this FSD is to be used as a temporary sediment basin. Please address the comment from review #1(see above)



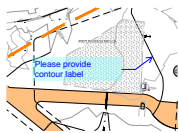
Subject: Text Box
Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:29 AM
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Show and label all easements (existing and proposed).



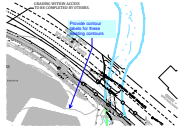
Subject: Text Box
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:30 AM
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temporary construction control measures shall be identified by phase of implementation to include initial, interim, and final or shown on separate phased maps identifying each phase.



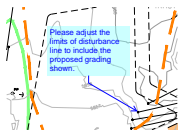
Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:30 AM
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Please provide contour label



Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:31 AM
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Provide contour labels for these existing contours



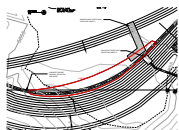
Subject: Callout
Page Label: 2
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Author: Daniel Torres
Date: 9/25/2019 10:10:32 AM
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Please adjust the limits of disturbance line to include the proposed grading shown.



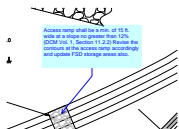
Subject: Callout
Page Label: 2
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:33 AM
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The site plan shows what appears to be a proposed OWTS area. Adjust your limits of disturbance to include the area where work is to be done for the OWTS.



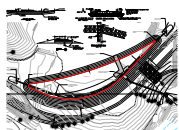
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Page Label: 3
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:35 AM
Color: ■

4,288.568 sf



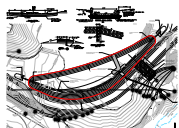
Subject: Callout
Page Label: 3
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:37 AM
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Access ramp shall be a min. of 15 ft. wide at a slope no greater than 12% (DCM Vol. 1, Section 11.2.2) Revise the contours at the access ramp accordingly and update FSD storage areas also.



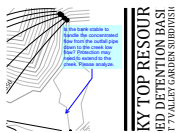
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Author: Daniel Torres
Date: 9/25/2019 10:10:39 AM
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20,859.42 sf



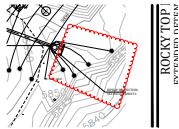
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Page Label: 3
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:43 AM
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35,958.37 sf

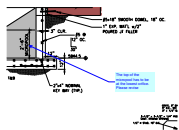


Subject: Callout
Page Label: 3
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:44 AM
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Is the bank stable to handle the concentrated flow from the outfall pipe down to the creek low flow? Protection may need to extend to the creek. Please analyze.

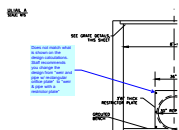


Subject: Cloud
Page Label: 3
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Author: Daniel Torres
Date: 9/25/2019 10:10:44 AM
Color: ■



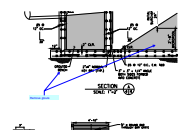
Subject: Callout
Page Label: 4
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:45 AM
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The top of the micropool has to be at the lowest orifice. Please revise



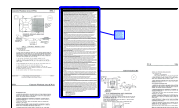
Subject: Callout
Page Label: 4
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:46 AM
Color: ■

Does not match what is shown on the design calculations. Staff recommends you change the design from "weir and pipe w/ rectangular orifice plate" to "weir & pipe with a restrictor plate"



Subject: Callout
Page Label: 4
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:47 AM
Color: ■

Remove grouts



Subject: Cloud+
Page Label: 7
Lock: Locked
Author: Daniel Torres
Date: 9/25/2019 10:10:48 AM
Color: ■

Please update these notes to the latest EPC grading and erosion control plan notes listed in the new GEC checklist that was submitted.