

ESTIMATED EARTHWORK QUANTITY:
 UNCLASSIFIED EXCAVATION (TOTAL CUT) = 11,718 CY
 * EMBANKMENT FILL = 15,902 CY
 NET (FILL) = 4,184 CY
 *(ASSUMES 15% COMPACTION FACTOR)

NOTE: THIS ESTIMATE IS PROVIDED FOR INFORMATION ONLY, REPRESENTING THE CALCULATED BULK EARTHWORK VOLUME TO FINISHED GRADE, EXCLUDING ANY ADJUSTMENT FOR PAVEMENT DEPTHS, ETC. CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF EARTHWORK QUANTITIES AS BASIS FOR BID PRICING AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

KEYED NOTES:
 ① CONTRACTOR MAY WASTE EXCESS CUT MATERIAL OR BORROW SUITABLE FILL MATERIAL FROM THIS AREA. MATCH INTO EXISTING GRADES WITH 3:1 MAX CUT AND FILL SLOPES AND MAINTAIN POSITIVE DRAINAGE IN ALL AREAS.

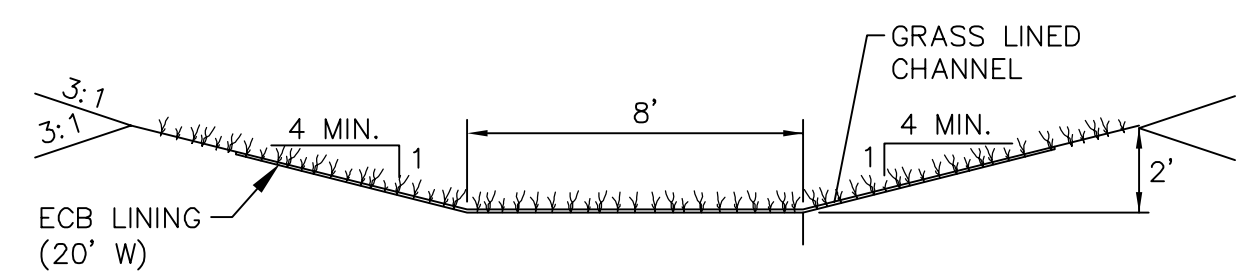
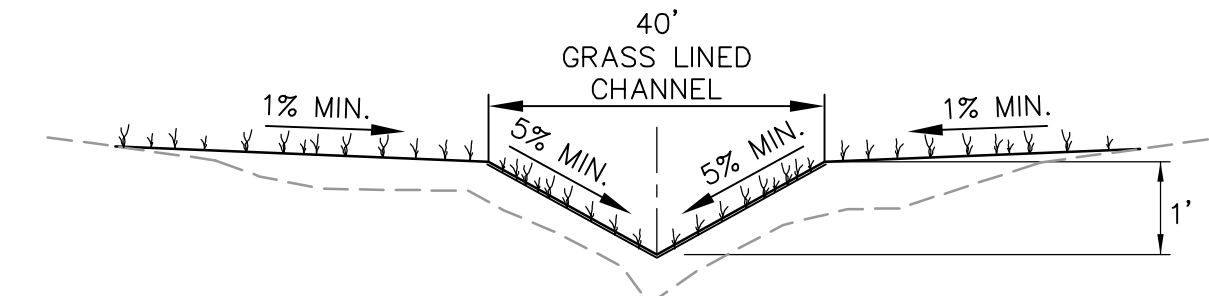
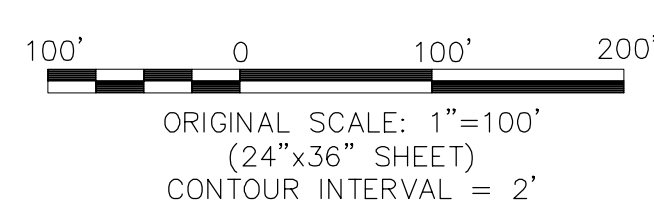
NOTES:
 EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.

- BMP PHASING**
- INITIAL BMP'S**
 - INSTALL VTC
 - INSTALL SILT FENCE
 - TEMPORARY SEDIMENT BASIN
 - INTERIM BMP'S**
 - STRAW BALE CHECK DAMS
 - FINAL BMP'S**
 - RIPRAP APRONS
 - SEEDING

- LEGEND**
- BOUNDARY LINES
 - 6520 --- EXISTING CONTOUR
 - x 82.0 PROPOSED SPOT ELEVATION (FLOWLINE)
 - x 82.0 EXISTING SPOT ELEVATION (FLOWLINE)
 - DRAINAGE CHANNEL
 - PROPOSED FLOW DIRECTION ARROW
 - PROPOSED CULVERT W/ FLARED END SECTIONS
 - IP INLET PROTECTION
 - RR RIPRAP
 - VTC VEHICLE TRACKING CONTROL PAD
 - STB OR SCL STRAW BALE BARRIER @ 300' SPACING (Label as preliminary)
 - SF SILT FENCE
 - SM SEED AND MULCH
 - ECB EROSION CONTROL BLANKET DITCH LINING (SC 150 OR EQUAL)
 - TSB TEMPORARY SEDIMENT BASIN (DURING CONSTRUCTION)
 - CWA CONCRETE WASHOUT AREA
 - SSA STABILIZED STAGING AREA
 - LIMITS OF CONSTRUCTION
 - EDB EXTENDED DETENTION BASIN

Per the Review 1 comments (9/7/17):
 1. Show the access easement to the detention pond.
 2. Provide drainage easement for basin D12 runoff (highlighted in yellow)
 3. Update the PCD File No. at the bottom right of the sheet to SP-17-007

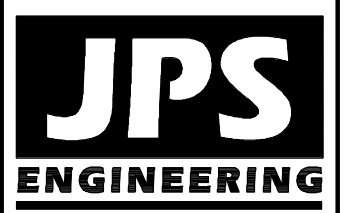
increase size of slope tag so they are legible when printed on 11x17



CHANNEL SECTION A
SCALE : NTS

CHANNEL SECTION I
SCALE : NTS

BENCHMARK:
 THE MONUMENT AT THE SOUTHWEST PROPERTY CORNER, HAVING AN ASSUMED ELEVATION OF 7650.0 (DATUM IS NAVD '88).



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 Colorado Springs, CO 80903
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CALL UTILITY NOTIFICATION CENTER OF COLORADO
 1-800-922-1987
 CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG. VERIFY FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

NO.	REVISION	DATE	BY
1	EPC SUBMITTAL	5/31/19	JPS

ABERT RANCH SUBDIVISION

SITE GRADING & EROSION CONTROL PLAN

HORIZ. SCALE: 1"=100'	DRAWN: MSP
VERT. SCALE: 1"=100'	DESIGNED: JPS
SURVEYED: HANNIGAN	CHECKED: JPS
CREATED: 11/23/18	LAST MODIFIED: 8/2/19
PROJECT NO: 110604	MODIFIED BY: MSP

C1

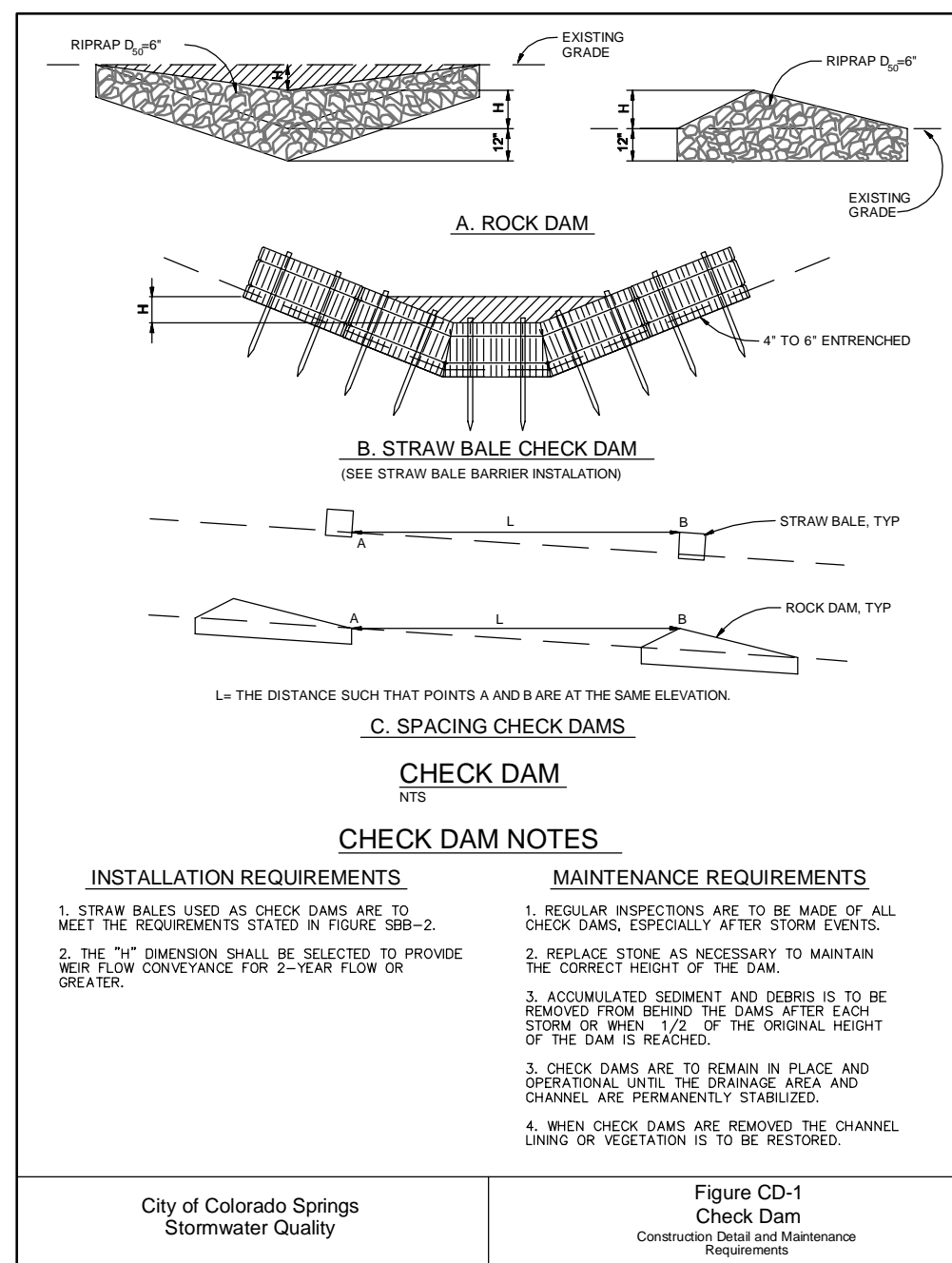
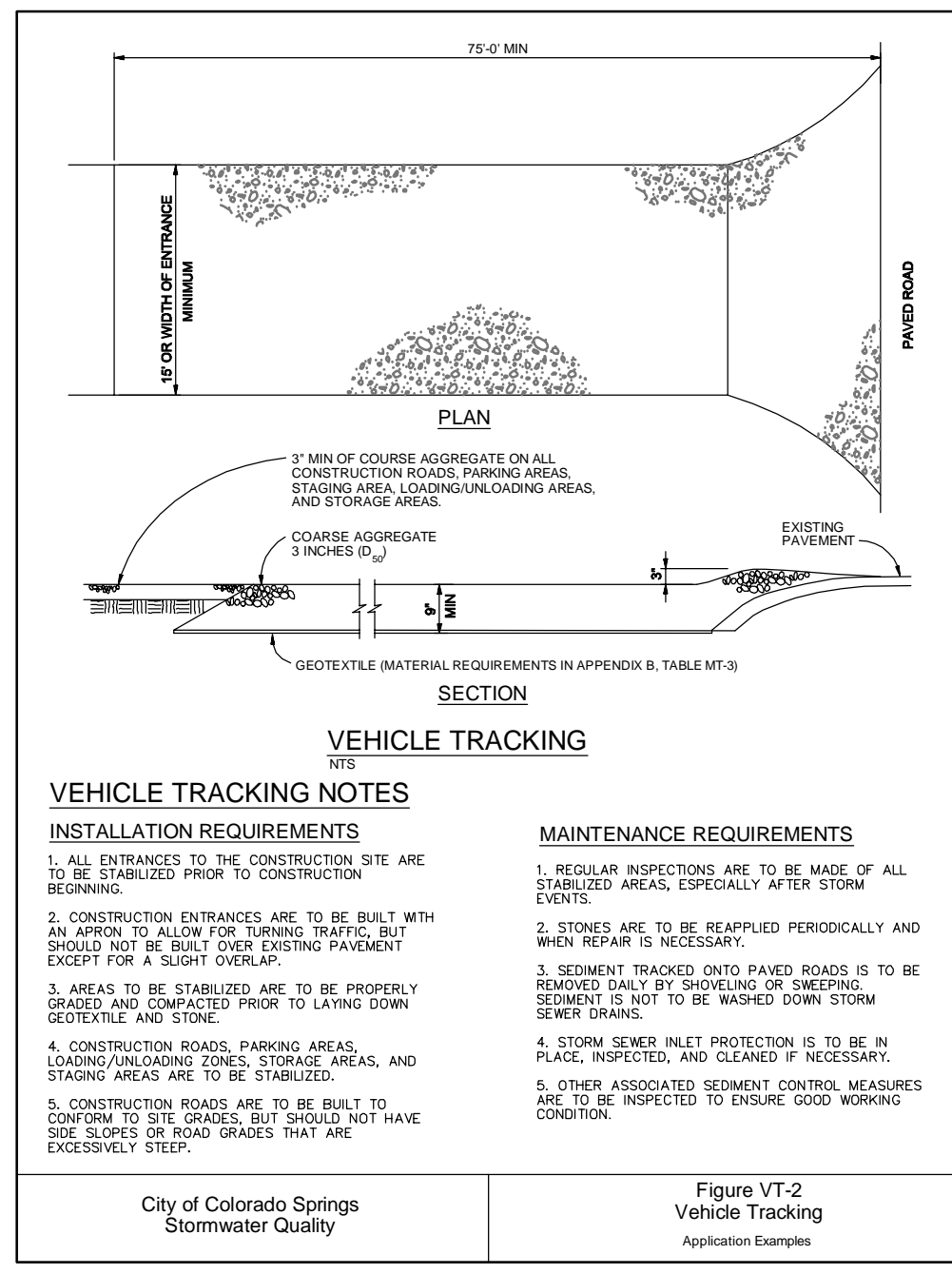
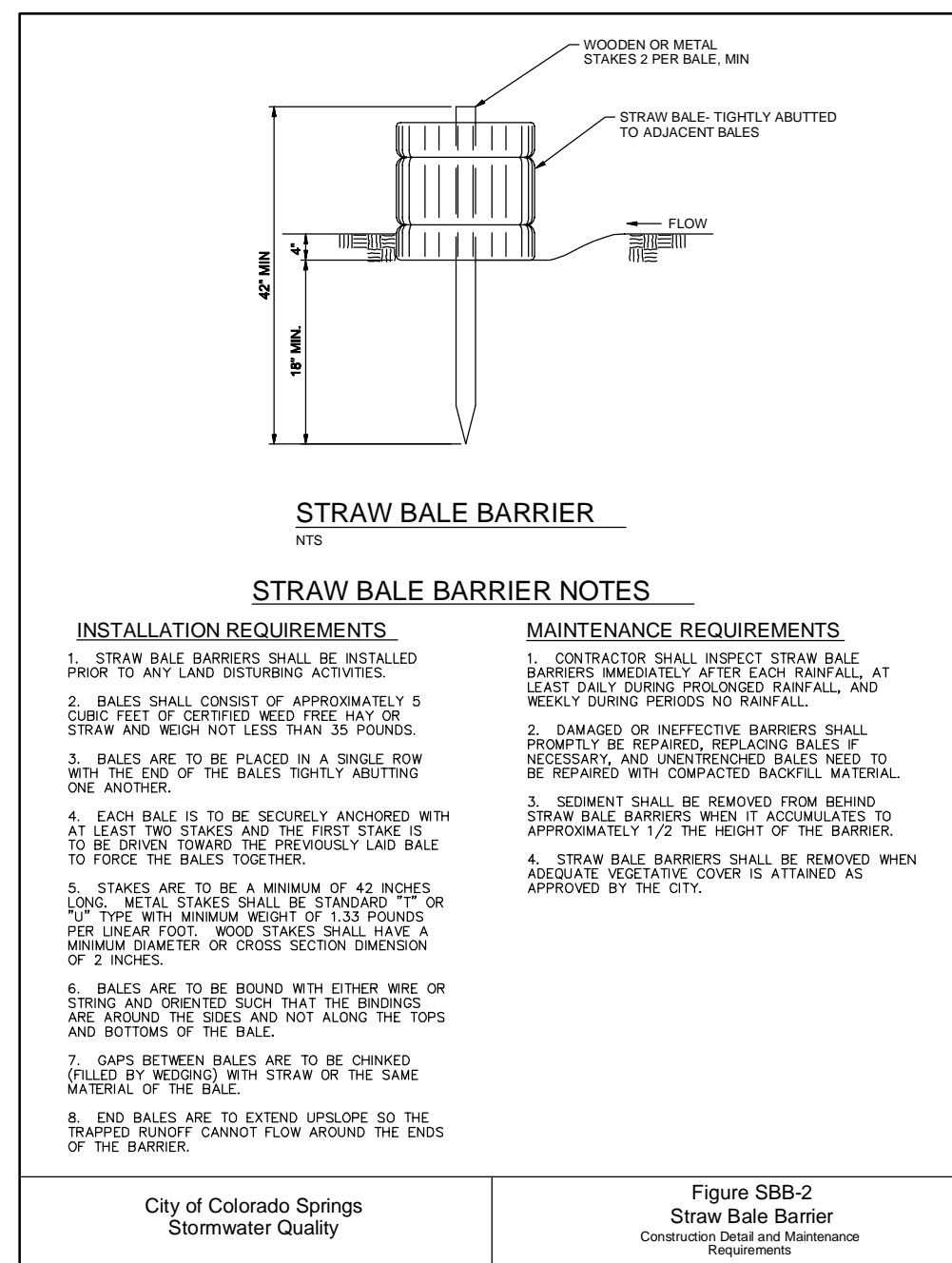
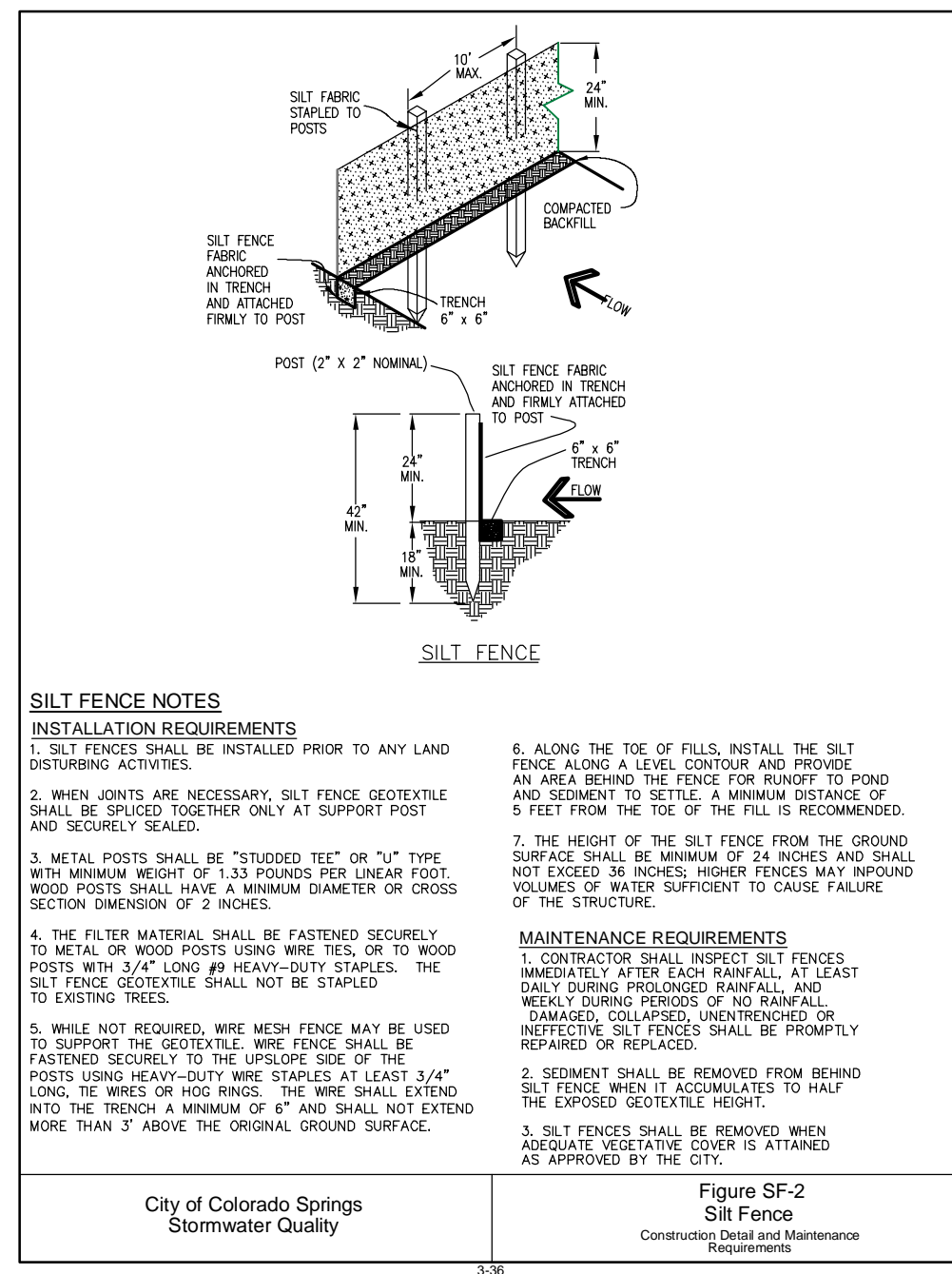
Standard Notes for El Paso County Grading and Erosion Control Plans

Revised 7/07/10

- Construction may not commence until a Construction Permit is obtained from Planning and Community Development Department and a Preconstruction Conference is held with Planning and Community Development Inspectors.
- 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 (SMWP) 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, 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 has been issued, the contractor may install the initial stage erosion and sediment control BMPs 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.
- 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 final 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. An area that is going to remain in an interim state for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMPs 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 in earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMPs 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. BMP's may be required by El Paso County Engineering 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 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.
- 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, 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.
- 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 shall be considered a part of these plans.
- 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, CO 80246-1530
 Attn: Permits Unit

NOTE:
 NOTWITHSTANDING ANY DETAILS, NOTES OR PLANS SHOWN ON THESE DRAWINGS, ALL EROSION CONTROL DESIGNS AND INSTALLATIONS SHALL CONFORM TO EL PASO COUNTY STANDARDS AND POLICIES UNLESS OTHERWISE APPROVED IN WRITING.



SEEDING MIX:

GRASS	VARIETY	AMOUNT IN PLS
		LBS. PER ACRE
CRESTED WHEAT GRASS	EPHRAIM OR HYCREST	4.0 LBS.
PERENIAL RYE	LINN	2.0 LBS.
WESTERN WHEATGRASS	SARTON	3.0 LBS.
SMOOTH BROME GRASS	LINCOLN OR MANCHAR	5.0 LBS.
SIDEOATS GRAMA	EPHRAIM	2.5 LBS.
TOTAL:		16.5 LBS.

SEEDING & FERTILIZER APPLICATION: DRILL SEED OR HYDRO-SEED PER CDOT SPEC. SECTION 212.

MULCHING APPLICATION: CONFORM TO CDOT SPEC-SECTION 213.

SEDIMENT CONTROL MAINTENANCE PROGRAM:

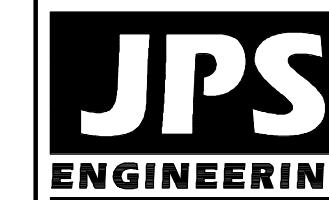
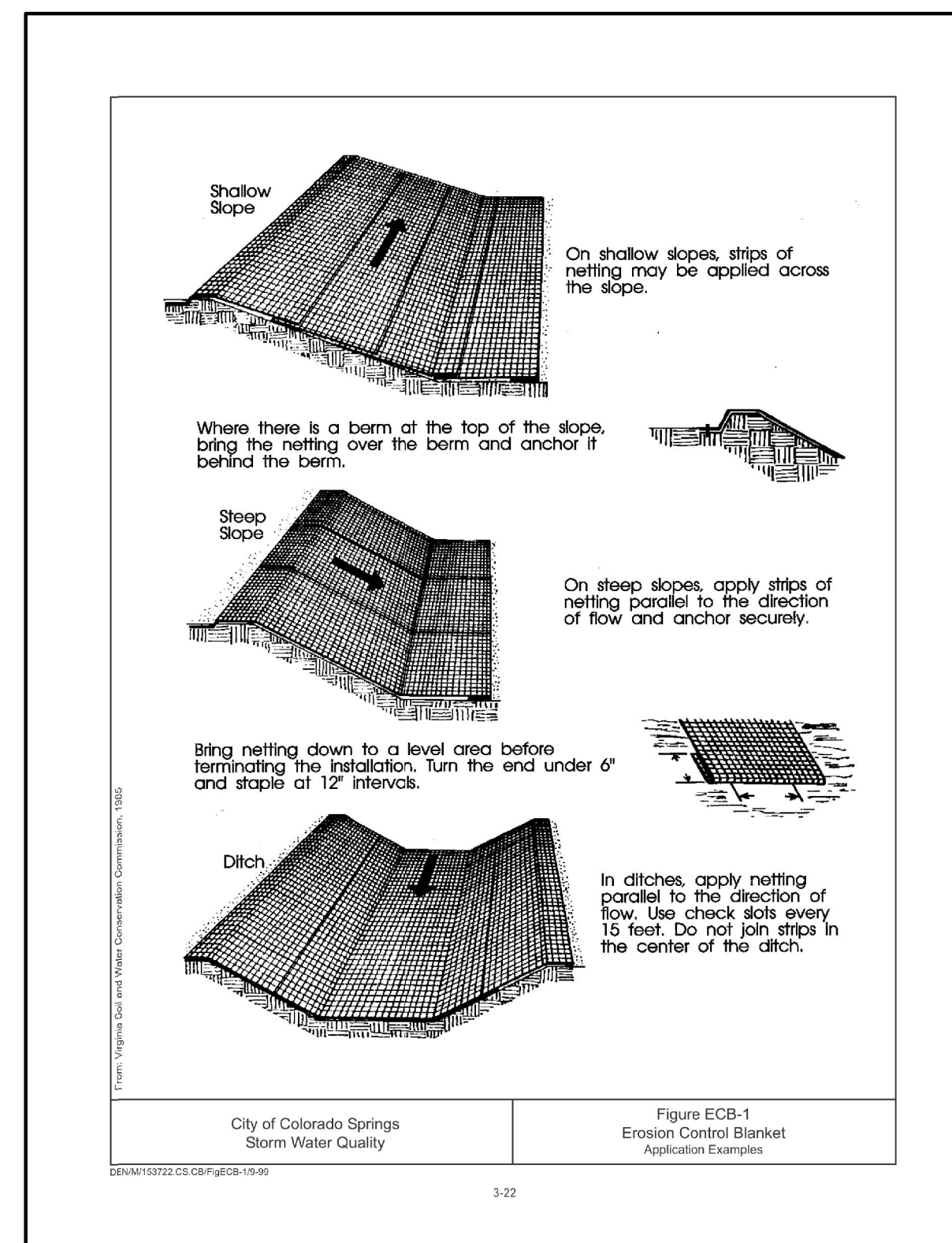
PERIODIC SITE INSPECTIONS BI-WEEKLY
 RE-VEGETATION OF EXPOSED SOILS WITHIN 21 DAYS OF GRADING
 SEDIMENT REMOVAL FROM BMP'S MONTHLY
 REMOVAL OF BMP'S AFTER STABILIZATION ACHIEVED

1 AND AFTER ANY PRECIPITATION OR SNOW MELT EVENT THAT CAUSES SURFACE EROSION.

2 ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED WHEN THE SEDIMENT LEVEL REACHES ONE HALF THE HEIGHT OF THE BMP OR AT ANY TIME THAT SEDIMENT OR DEBRIS ADVERSELY IMPACTS THE FUNCTION OF THE BMP.

ESTIMATED TIME SCHEDULE:

INSTALL BMP'S APRIL 2019
 ROADWAY GRADING APRIL 2019
 SEEDING & MULCHING AUGUST 2019
 STABILIZATION AUGUST 2020



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NO.	REVISION	BY	DATE
1	EPC SUBMITTAL	JPS	2/19/19

EROSION CONTROL NOTES & DETAILS

HORIZ. SCALE: N/A	DRAWN: MSP
VERT. SCALE: N/A	DESIGNED: JPS
SURVEYED: HANNIGAN	CHECKED: JPS
CREATED: 11/26/18	LAST MODIFIED: 2/19/19
PROJECT NO: 111604	MODIFIED BY: MSP

SHEET: C2



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FOR THE MARKING OF UNDERGROUND
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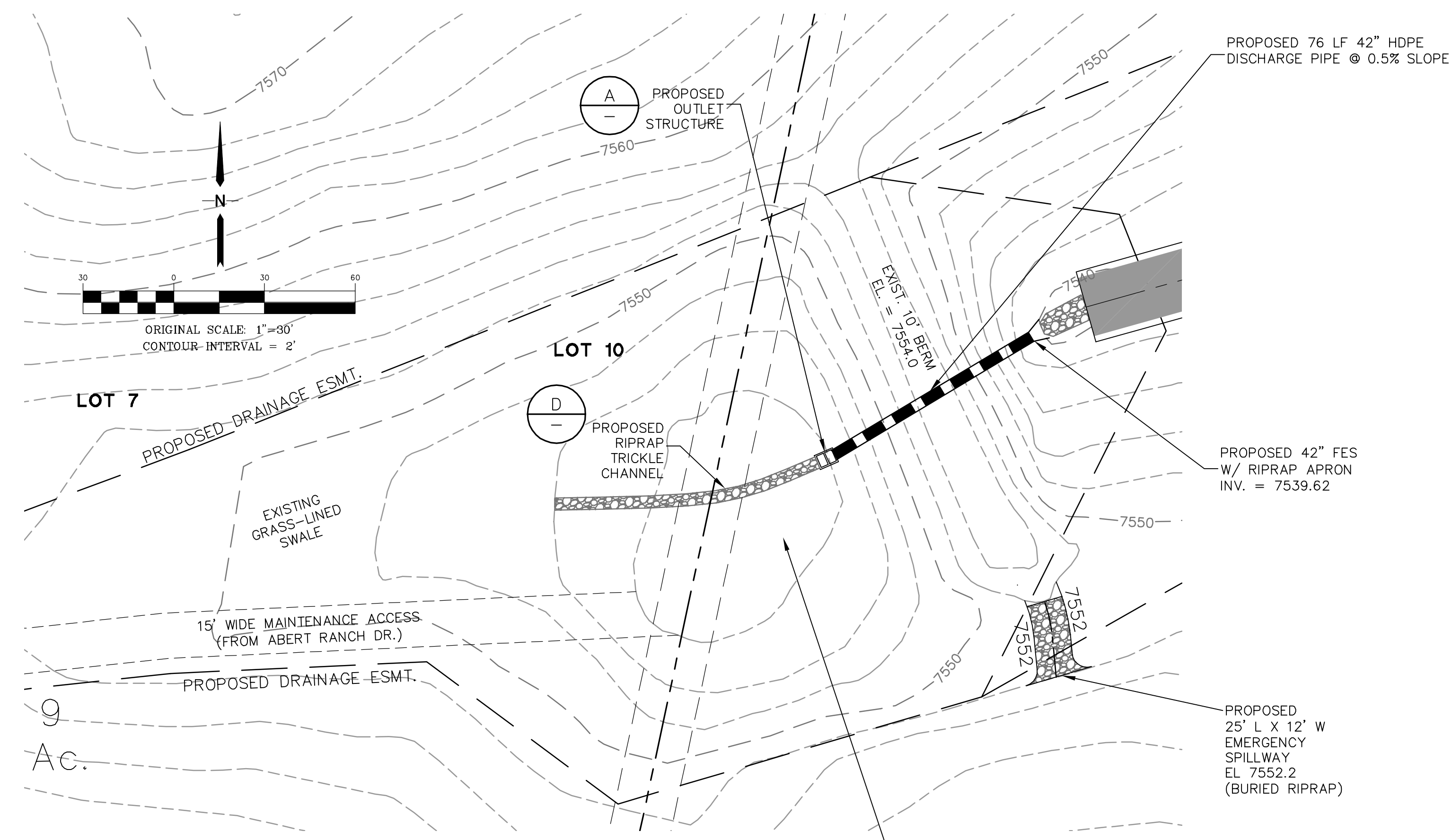
No.	REVISION	DATE
1	EPC SUBMITTAL	2/19/19

ABERT RANCH SUBDIVISION

DETENTION POND I PLAN & DETAILS

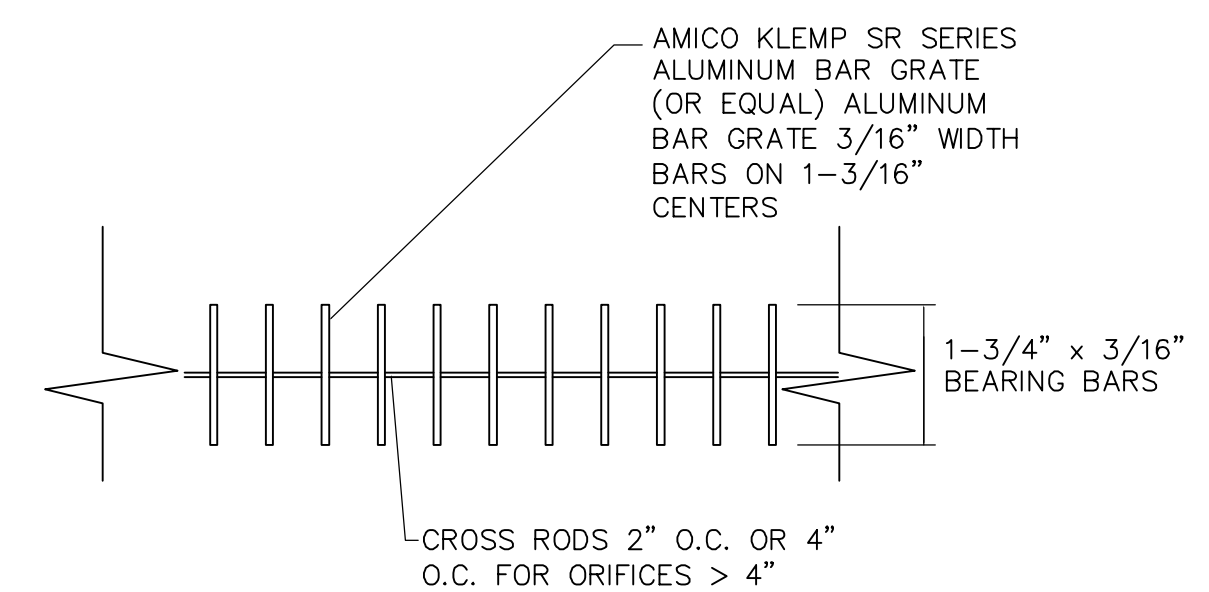
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VERT. SCALE:	N/A	DESIGNED:	JPS
SURVEYED:	HANNIGAN	CHECKED:	JPS
CREATED:	11/28/18	LAST MODIFIED:	2/19/19
PROJECT NO.:	111604	MODIFIED BY:	MSP

C3

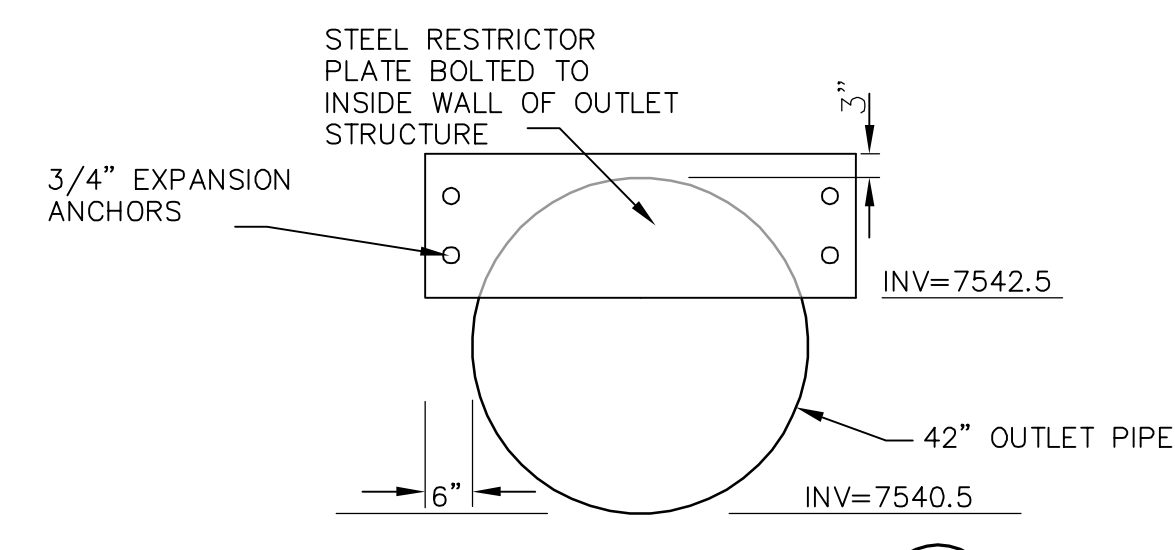


DETENTION POND I PLAN
SCALE: 1" = 30"

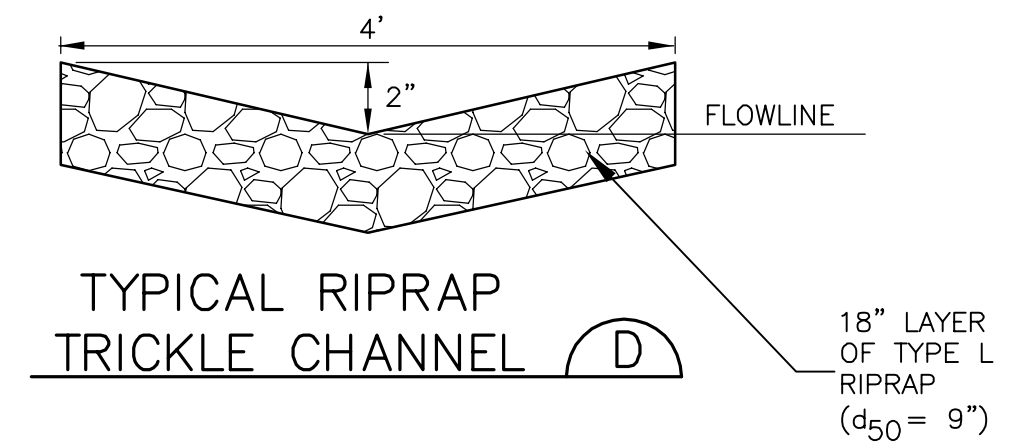
DETENTION POND I
(UPGRADE EXIST. STOCK POND)
BOT EL = 7544.0
SPILLWAY EL = 7552.2
TOP EL = 7554.0
100-YR FSD VOL = 3.3 AF
DESIGN VOL = 3.4 AF



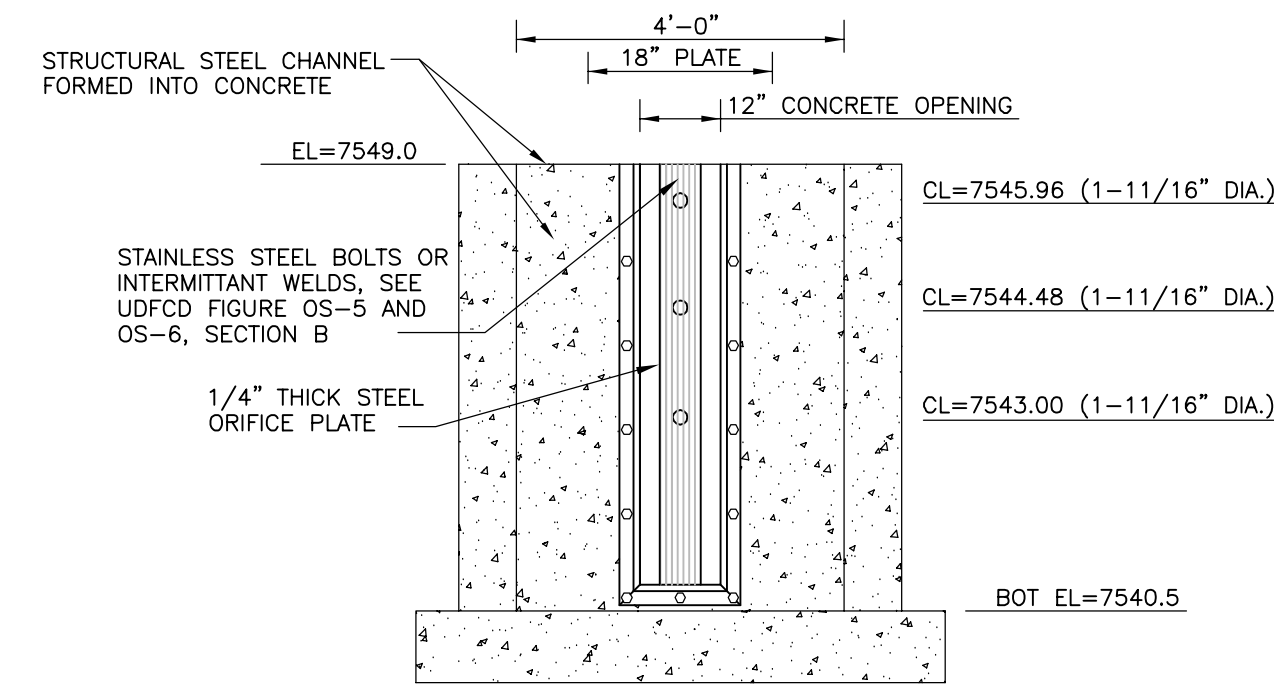
TRASH GRATE SECTION (B)
NTS



RESTRICTOR PLATE DETAIL (C)
NTS

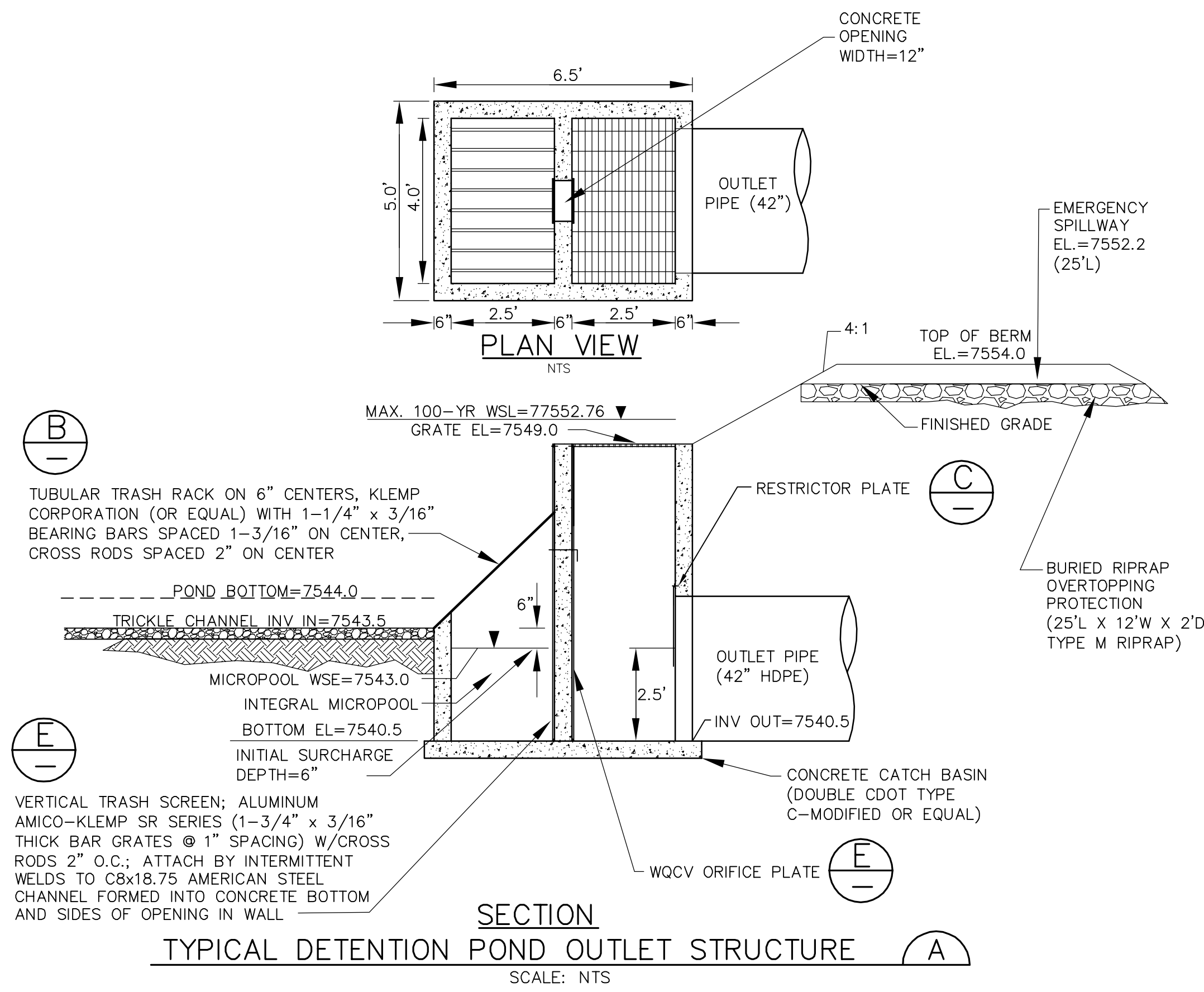


TYPICAL RIPRAP TRICKLE CHANNEL (D)
18" LAYER OF TYPE L RIPRAP (d₅₀ = 9")



- ORIFICE PLATE NOTES:**
- MINIMIZE THE NUMBER OF COLUMNS.
 - PROVIDE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE.
 - BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.
- EURV AND WQCV TRASH RACKS:**
- WELL-SCREEN TRASH RACKS (FOR CIRCULAR ORIFICES) SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
 - STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.
- OVERFLOW TRASH RACKS:**
- ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED AND LOCKABLE OR BOLTABLE ACCESS PANELS.
 - TRASH RACKS SHALL BE STAINLESS STEEL, ALUMINUM, OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
 - TRASH RACKS SHALL BE DESIGNED SUCH THAT THE DIAGONAL DIMENSION OF EACH OPENING IS SMALLER THAN THE DIAMETER OF THE OUTLET PIPE.
 - STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.

ORIFICE PLATE AND TRASH RACK DETAILS AND NOTES (E)
NTS



TYPICAL DETENTION POND OUTLET STRUCTURE (A)
SCALE: NTS

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