



1-800-922-1987

CLEAR VIEW INDUSTRIAL PARK, FILING 2A

GRADING, STORM AND EROSION CONTROL PLANS

EPC STORMWATER REVIEW COMMENTS
IN ORANGE BOXES WITH BLACK TEXT

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



VICINITY MAP
N. T. S.

El Paso County:

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

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, Volumes 1 and 2, and Engineering Criteria Manual as amended.

In accordance with 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

Owner/Developer's Statement:

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

Kevin J. Ferguson, Manager (Lots 1A, 2A, 4A)
Clear View Properties I, LLC
9720 Arroya Lane
Colorado Springs, CO 80908

Owner/Developer's Statement:

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

Robert C. Bullard, Manager (Lot 3A)
Dilligaf Leasing, LLC
3950 Clear View Loop
Colorado Springs, CO 80911

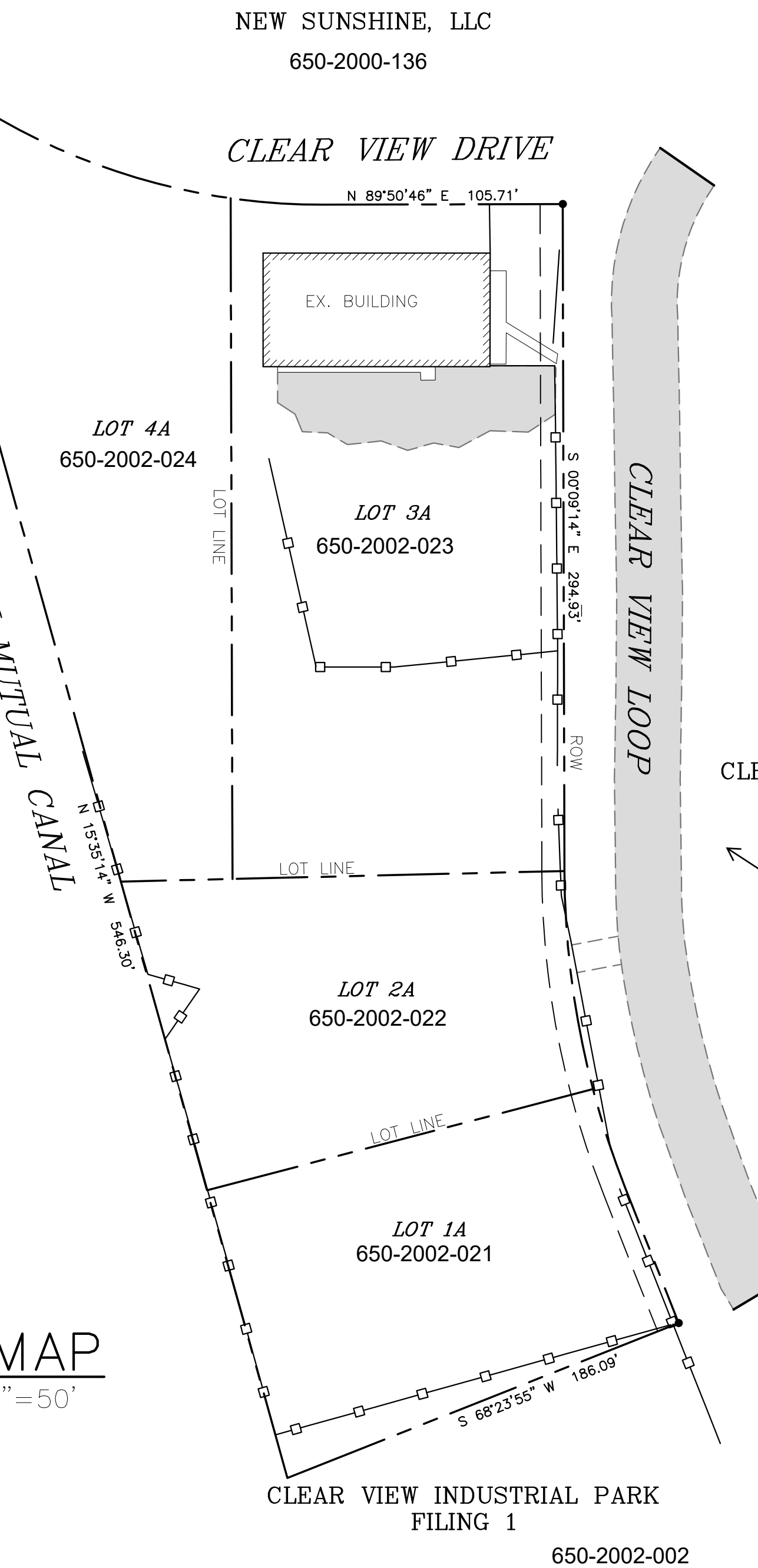
SECURITY WATER AND
WASTEWATER DISTRICT
650-2000-138

SITE MAP
SCALE: 1"=50'

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.

Jonathan Moore, P.E. #34944
For and Behalf of CTR Engineering, Inc.



Rename plans to
"Clear View Industrial
Park Filing 2B".

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CLEAR VIEW INDUSTRIAL PARK
FILING 1
650-2001-007

Have CTR Engineering and Barron Land coordinate to remove inconsistencies between Construction Drawings and Plat Drawings.

Update to show proposed lot divisions for this replat.

Add a list of contacts that includes: engineer for this project, owner of project, county, Fountain Mutual Canal District, and any utility companies that have lines running through project.

Revise PCD File No. to: SF2029

PCD FILE NO. CDR208

NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: TITLE SHEET			
DESIGNED BY: JCM	SCALE:	DATE ISSUED: OCT, 2020	
DRAWN BY: JCM	HH:		
CHECKED BY: JH	V:	SHEET NO. 1 OF 15 SHEETS	
DWG: C:\Temp\CV\CAD\Grad\1 Title Sheet-Grad.dwg			



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GRADING, STORM AND EROSION CONTROL PLANS

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STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

Revise to include standard construction notes (attached next to this comment).



1	Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.
2	Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.
3	A separate Stormwater Management Plan (SMMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SMMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SMMP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
4	Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.
5	Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.
6	All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.
7	Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.
8	Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.
9	All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that affect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.
10	Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved.

11	Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s).
12	Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off site.
13	Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream.
14	During dewatering operations of uncontaminated ground water may be discharged on site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.
15	Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.
16	Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
17	Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
18	Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.
19	The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.
20	The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
21	No chemical(s) having the potential to be released in stormwater are to be stored or used onsite unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.
22	Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.
23	No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.

24	Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.
25	All construction traffic must enter/exit the site only at approved construction access points.
26	Prior to construction the permittee shall verify the location of existing utilities.
27	A water source shall be available on site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.
28	The soils report for this site has been prepared by _____ and shall be considered a part of these plans.
29	At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SMMP), 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

Update notes so that text is legible.

NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: GENERAL NOTES			
DESIGNED BY: JCM	SCALE:	DATE ISSUED: OCT, 2020	
DRAWN BY: JCM	HH:		
CHECKED BY: JH	V:	SHEET NO. 2 OF 15 SHEETS	
DWG: C:\Temp\CV\CAD\Grad\2 GENERAL NOTES.dwg			



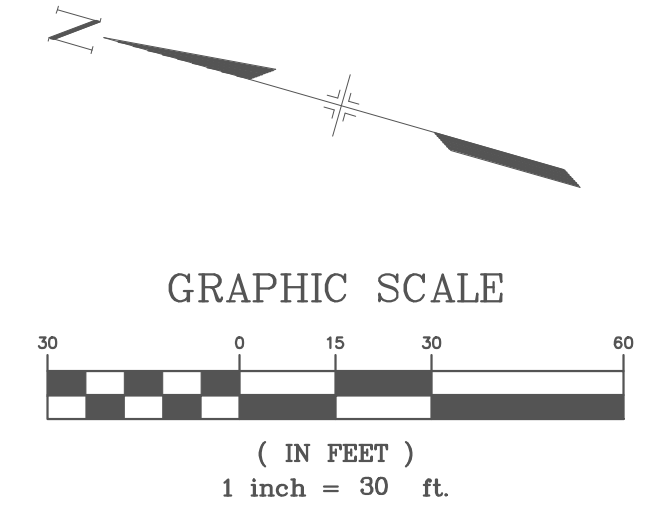
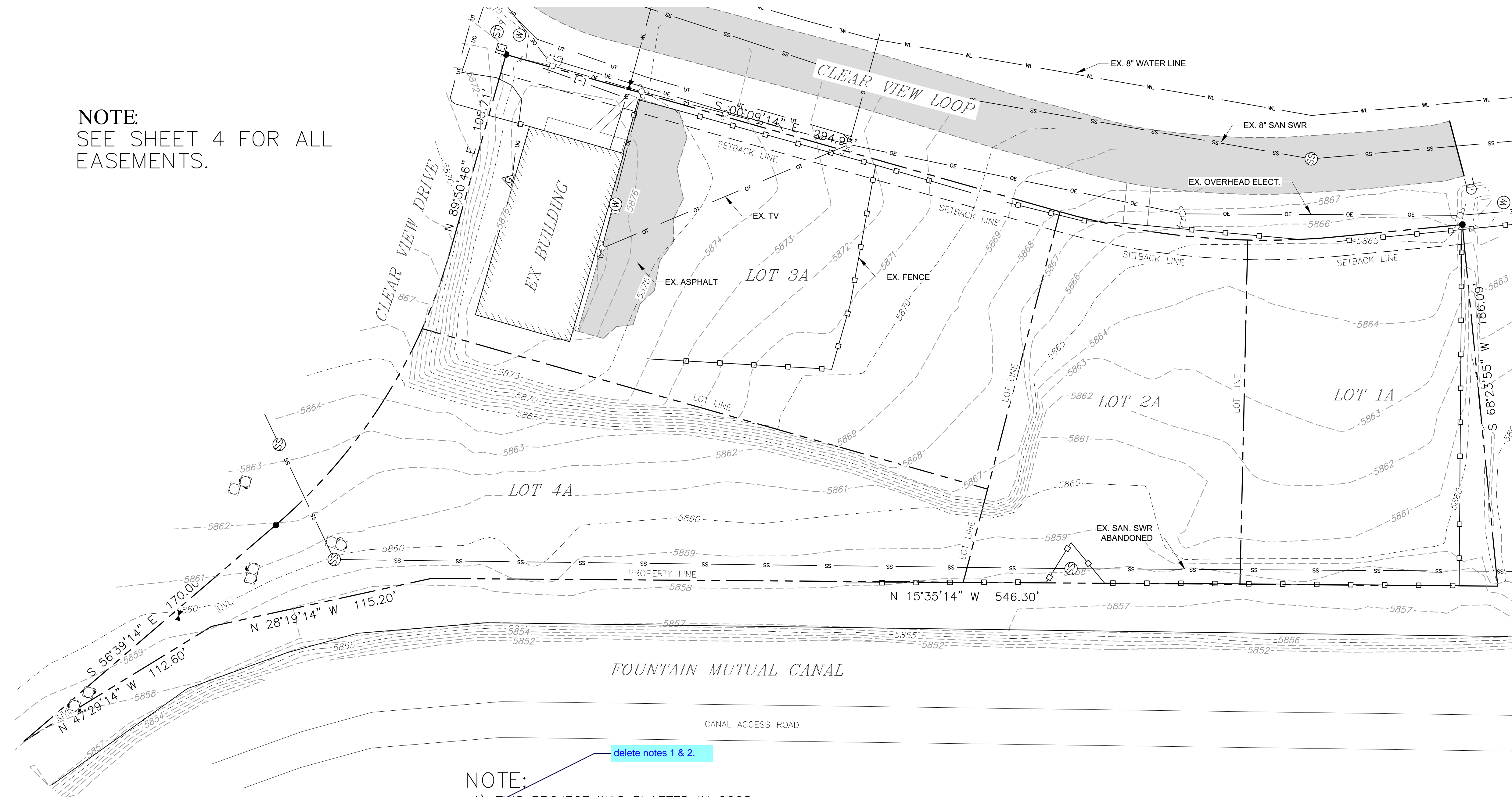
1-800-922-1987

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NOTE:
SEE SHEET 4 FOR ALL EASEMENTS.



LEGEND

- EXISTING CONTOURS
- EXISTING FENCE
- EXISTING LOTS LINES

NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
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PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: EXISTING SITE PLAN			
DESIGNED BY: JCM	SCALE: 1"=40'	DATE ISSUED: OCT. 2020	
DRAWN BY: JCM	CHECKED BY: JH	SHEET NO. 3 OF 15 SHEETS	
DWG:			

NOTE:

- 1) THIS PROJECT WAS PLATTED IN 2008
- 2) APPROXIMATELY \$60,000 OF WATER QUALITY ASSURANCE IMPROVEMENTS WAS POSTED AT TIME OF PLATTING IN 2008
- 3) LOT 3A CONTAINS THE ONLY EXISTING BUILDING
- 4) LOT 4A WILL ONLY CONTAIN THE WATER QUALITY POND AND NO BUILDINGS AND WILL BE DEDICATED AS A DRAINAGE TRACT.
- 5) LOT 1A AND 2A WILL BE DEVELOPED AT A LATER DATE
- 6) LOT 1A AND 2A WILL SUBMIT INDIVIDUAL SITE DEVELOPMENT PLANS ONCE THEY ARE SOLD TO A BUILDER
- 7) A GEOTECHNICAL REPORT WILL ACCOMPANY THESE CONSTRUCTION DRAWINGS.

Use proposed replatted lot names to avoid confusion about lots.

delete notes 1 & 2.

Update notes to remove inconsistencies. Lot 2a and 4a are combined to a single lot, therefore the pond within lot 2b will become a drainage easement.



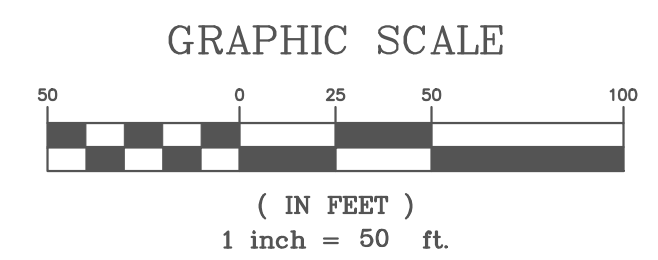
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Submit a license agreement for the private driveway and gate located within the public ROW.



LEGEND

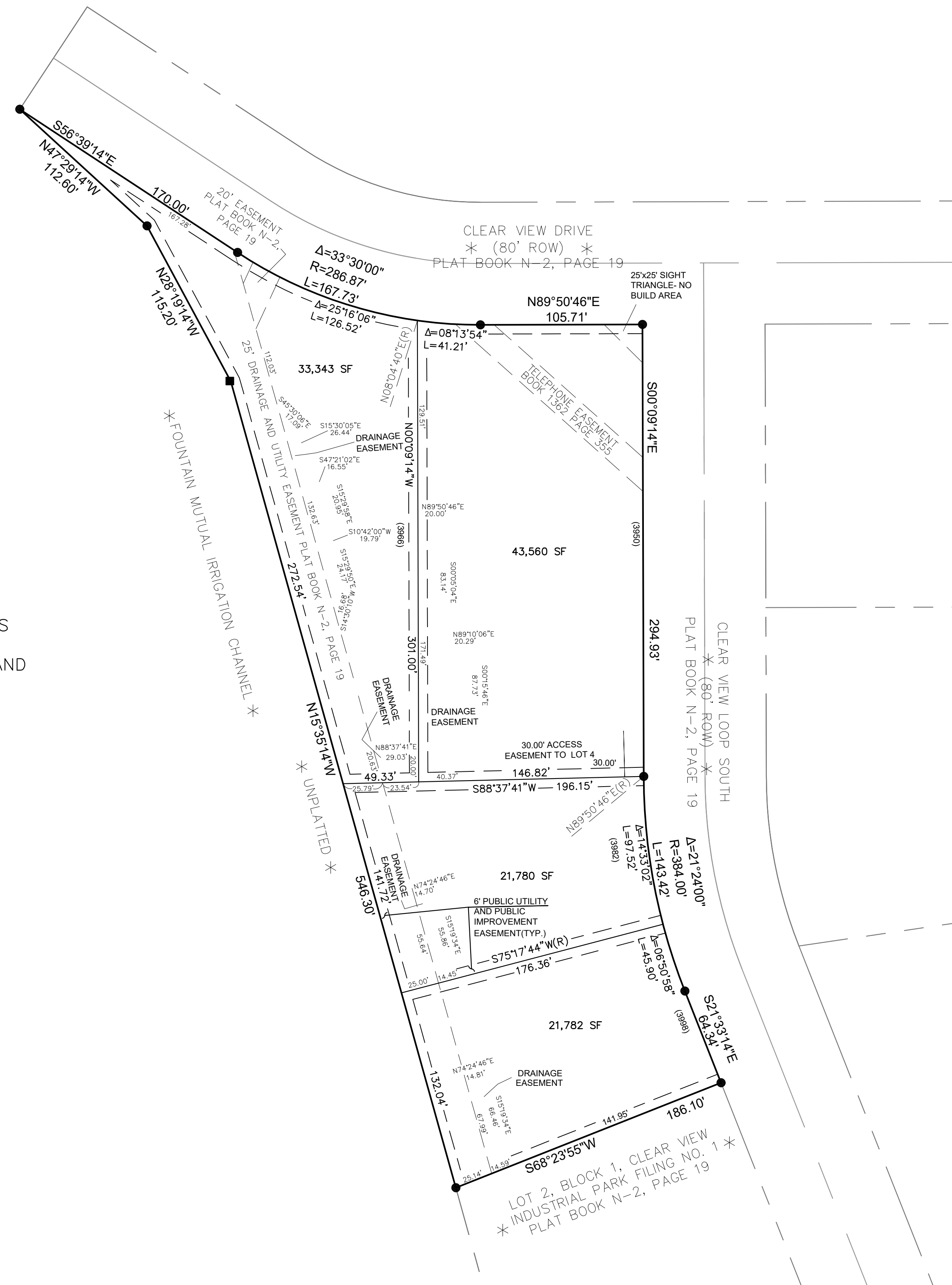
- EXISTING EASEMENTS
- EXISTING LOTS LINES

Staff recommends deleting this sheet from the plan set. Easements still needs to be shown on all plan views.

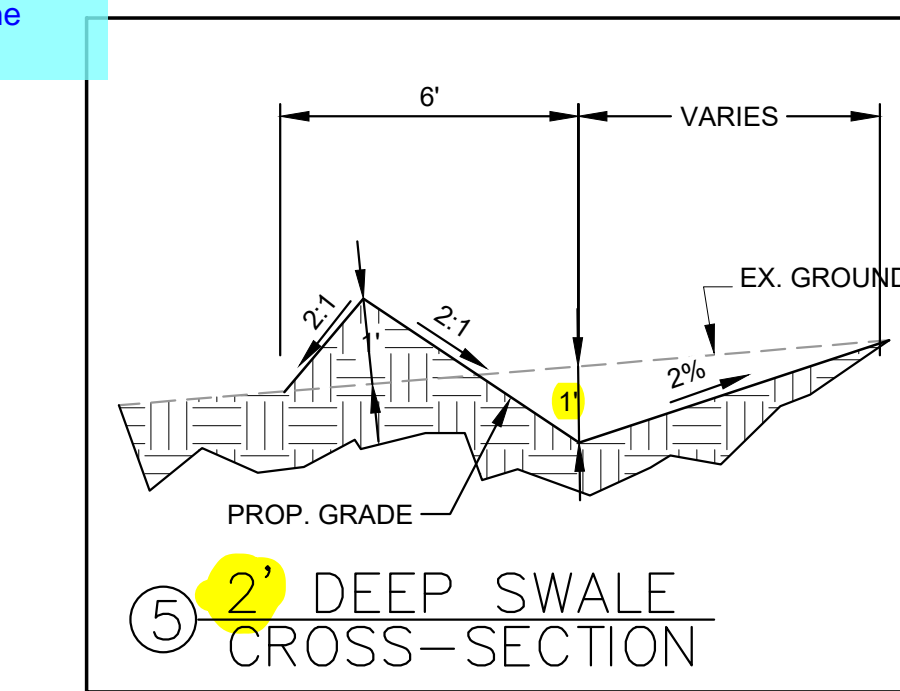
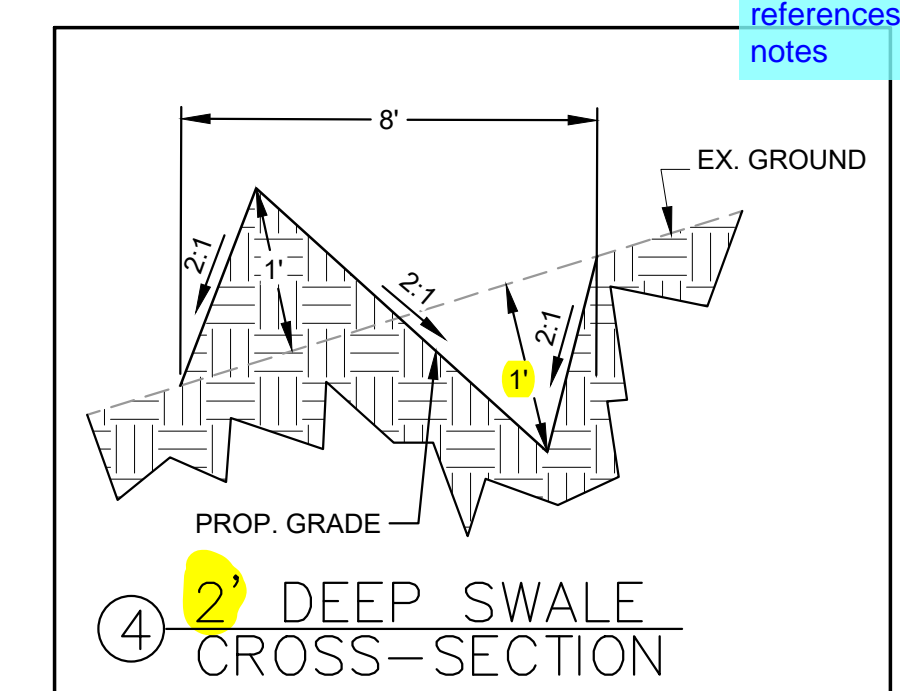
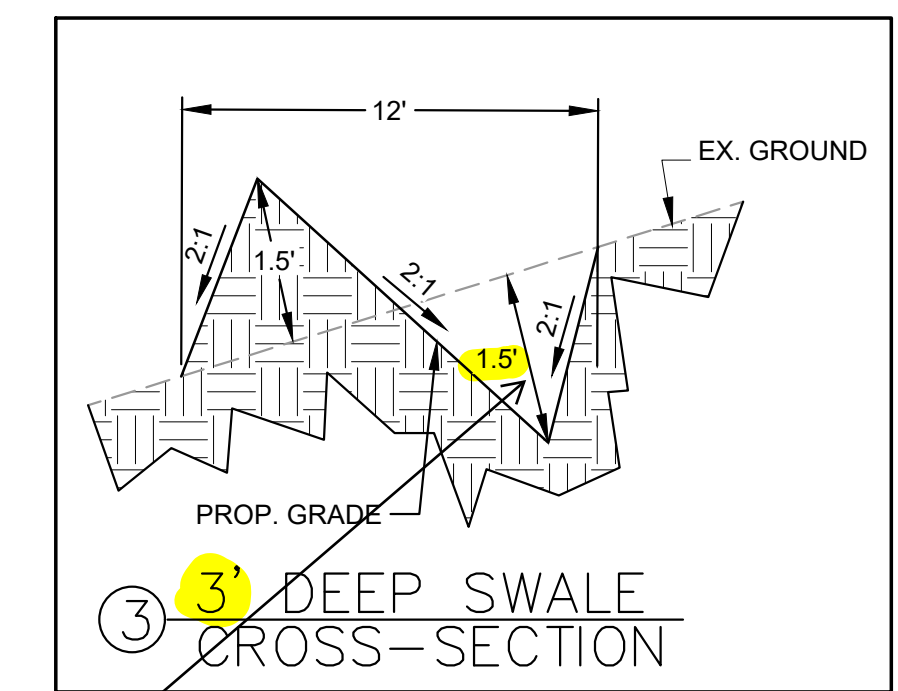
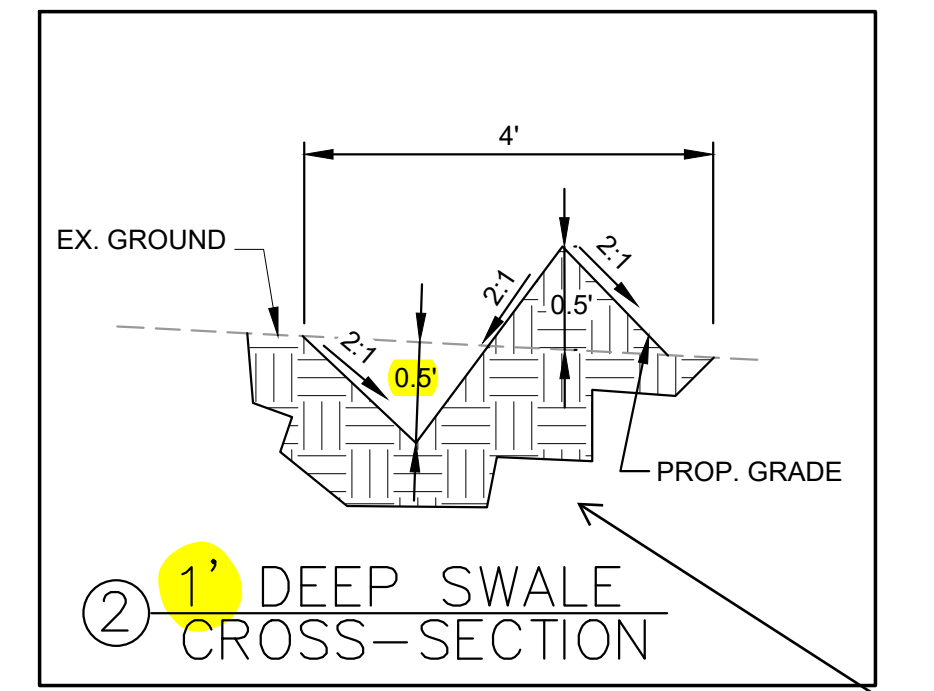
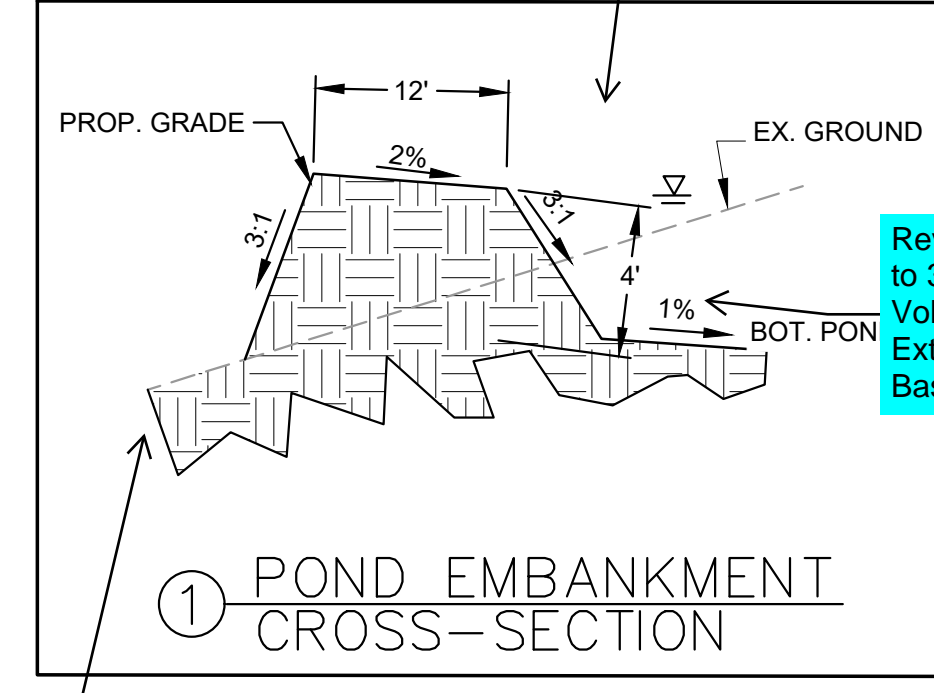
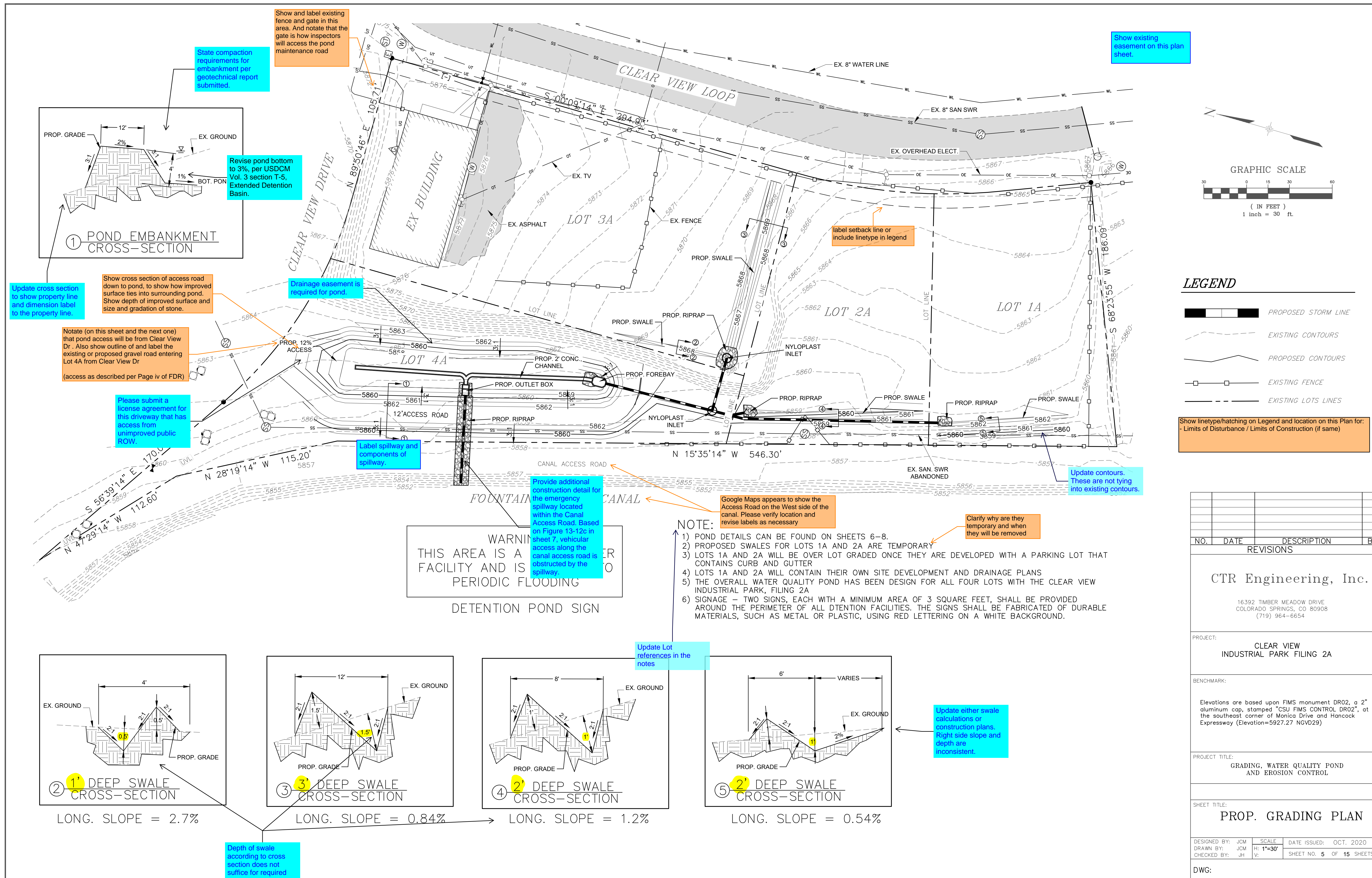
NOTE:

- 1) THIS PROJECT WAS PLATTED IN 2008
- 2) ALL OF THE DRAINAGE EASEMENTS WILL BE REWORKED AS PART OF THE REPLAT
- 3) LOT 4A WILL ONLY CONTAIN THE WATER QUALITY POND AND NO BUILDINGS AND WILL BE REPLATTED AS A DRAINAGE TRACT

Update notes using proposed replatted lot numbers to clarify what lots note is referring to. Rename as drainage easement.

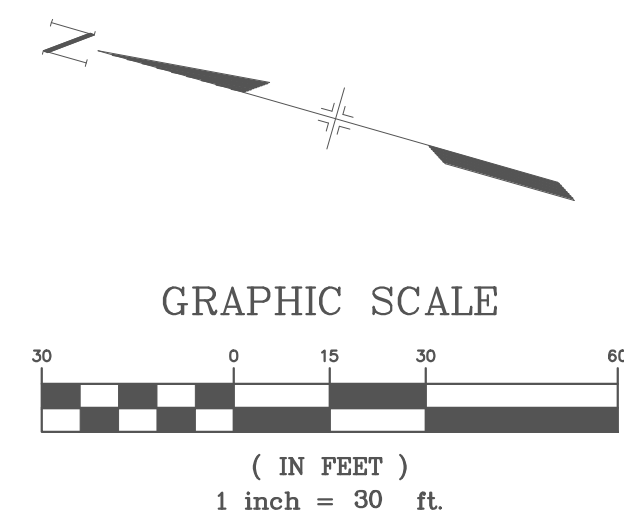


NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: EXISTING EASEMENT PLAN			
DESIGNED BY: JCM	SCALE: 1"=50'	DATE ISSUED: OCT, 2020	
DRAWN BY: JCM		SHEET NO. 4 OF 15 SHEETS	
CHECKED BY: JH			
DWG:			



Depth of swale according to cross section does not suffice for required normal depth according to drainage report. Revise. This applies to all swales.

Update either swale calculations or construction plans. Right side slope and depth are inconsistent.



LEGEND

- PROPOSED STORM LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING FENCE
- EXISTING LOTS LINES

Show linetype/hatching on Legend and location on this Plan for:
- Limits of Disturbance / Limits of Construction (if same)

NO.	DATE	DESCRIPTION	BY
REVISIONS			

CTR Engineering, Inc.
16392 TIMBER MEADOW DRIVE
COLORADO SPRINGS, CO 80908
(719) 964-6654

PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A

BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)

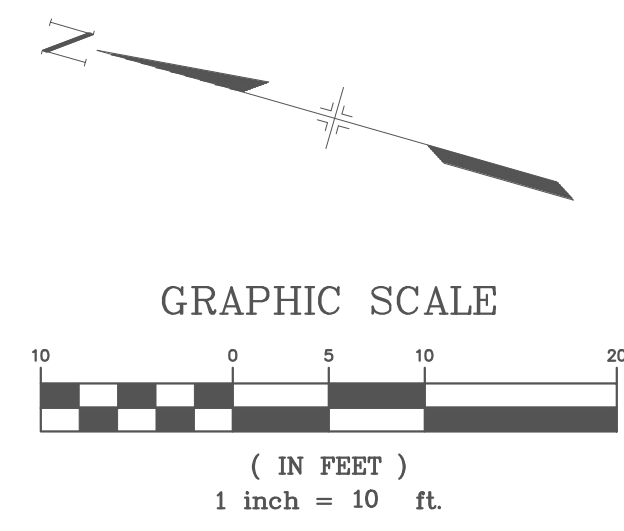
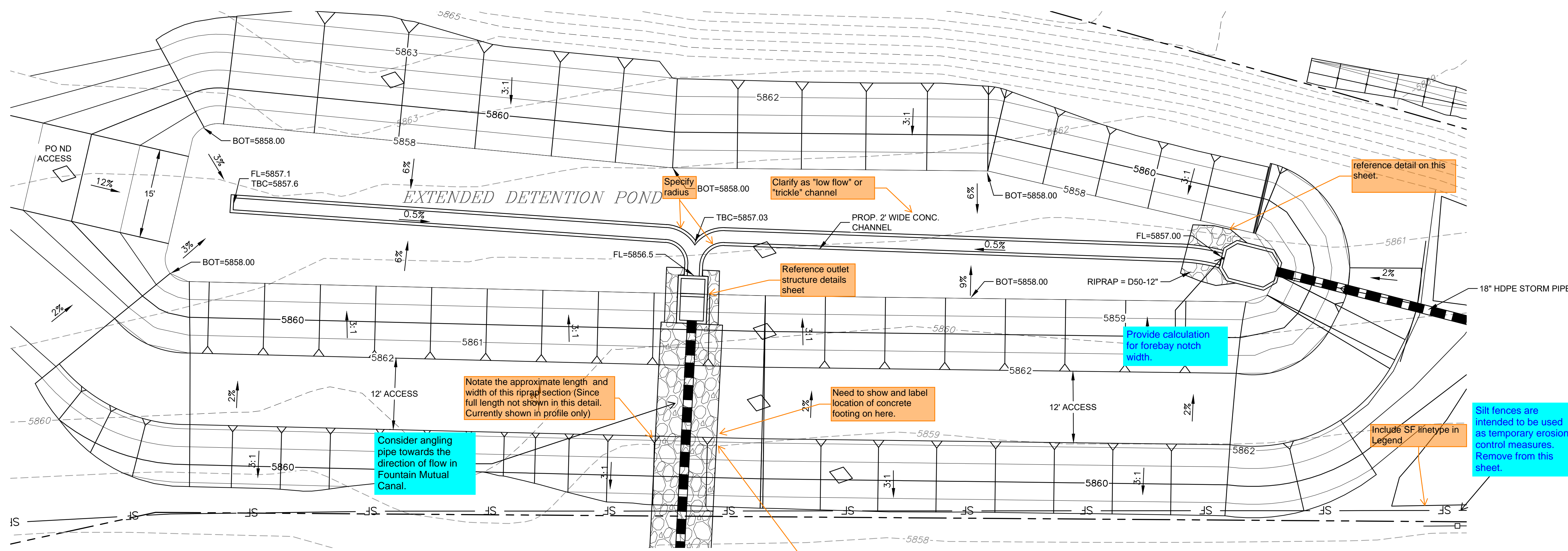
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL

SHEET TITLE: PROP. GRADING PLAN

DESIGNED BY: JCM SCALE: DATE ISSUED: OCT. 2020
DRAWN BY: JCM HH: 1"=30'
CHECKED BY: JH V: SHEET NO. 5 OF 15 SHEETS

DWG:

C:\Temp\CV\CAD\Grad\6 GRADING - Pond Details.dwg, 10/3/2020 5:56:28 PM, DWG To PDF.pc3



LEGEND

	PROPOSED STORM LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING FENCE
	EXISTING LOTS LINES

Add the following to the Legend:
 - Limits of Disturbance / Limits of Construction (if same)
 - Drainage Arrows
 - Silt Fence

THICKNESS REQUIREMENTS FOR GRANULAR BEDDING

Minimum Bedding Thickness (Inches)

Riprap Designation	Fine Grained Soils* (Two Layer System)		Course Grained Soils**
	Type I	Type II	Type II
L, G, SM	4	4	6
M	4	4	6
H	4	6	8
VH	4	6	8

*May substitute one 12 inch layer of Type II bedding. Substitution of one layer of Type II bedding shall not be permitted at drop structures. Use of a combination of filter fabric and Type II bedding at drop structures is acceptable.

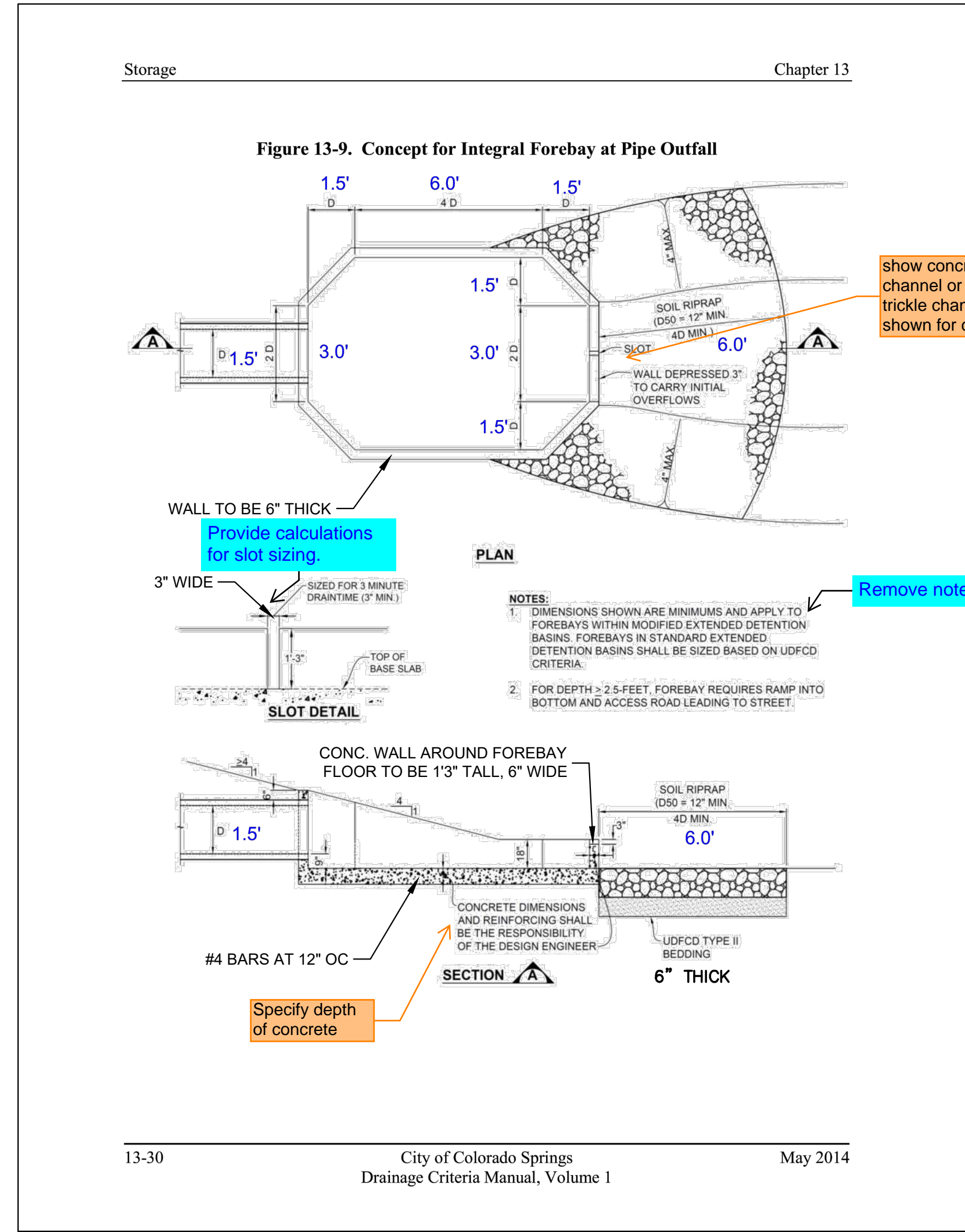
** Fifty percent or more by weight retained on the #40 sieve.

RIPRAP CLASSIFICATION

VL = D50 = 6"
 L = D50 = 9"
 M = D50 = 12"
 H = D50 = 18"
 VH = D50 = 24"

GRADATION FOR GRANULAR BEDDING

U.S. Standard Sieve Size	Percent Weight By Passing Type I	Square Mesh Sieves Type II
3"	-	90 - 100
1-1/2"	-	-
3/4"	-	20 - 90
3/8"	100	-
#4	95 - 100	0 - 20
#16	45 - 80	-
#50	10 - 30	-
#100	2 - 10	-
#200	0 - 2	0 - 3



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SHEET TITLE: POND DETAILS			
DESIGNED BY: JCM	SCALE: 1"=10'	DATE ISSUED: OCT. 2020	
DRAWN BY: JCM			
CHECKED BY: JH			SHEET NO. 6 OF 15 SHEETS
DWG:			

Emergency Spillway (Rectangular or Trapezoidal)		
Spillway Invert Stage =	3.90	ft (relative)
Spillway Crest Length =	3.00	feet
Spillway End Slopes =	3.00	H:V
Height above Max Water Surface =	1.00	feet

Figure 13-12c. Emergency Spillway Protection

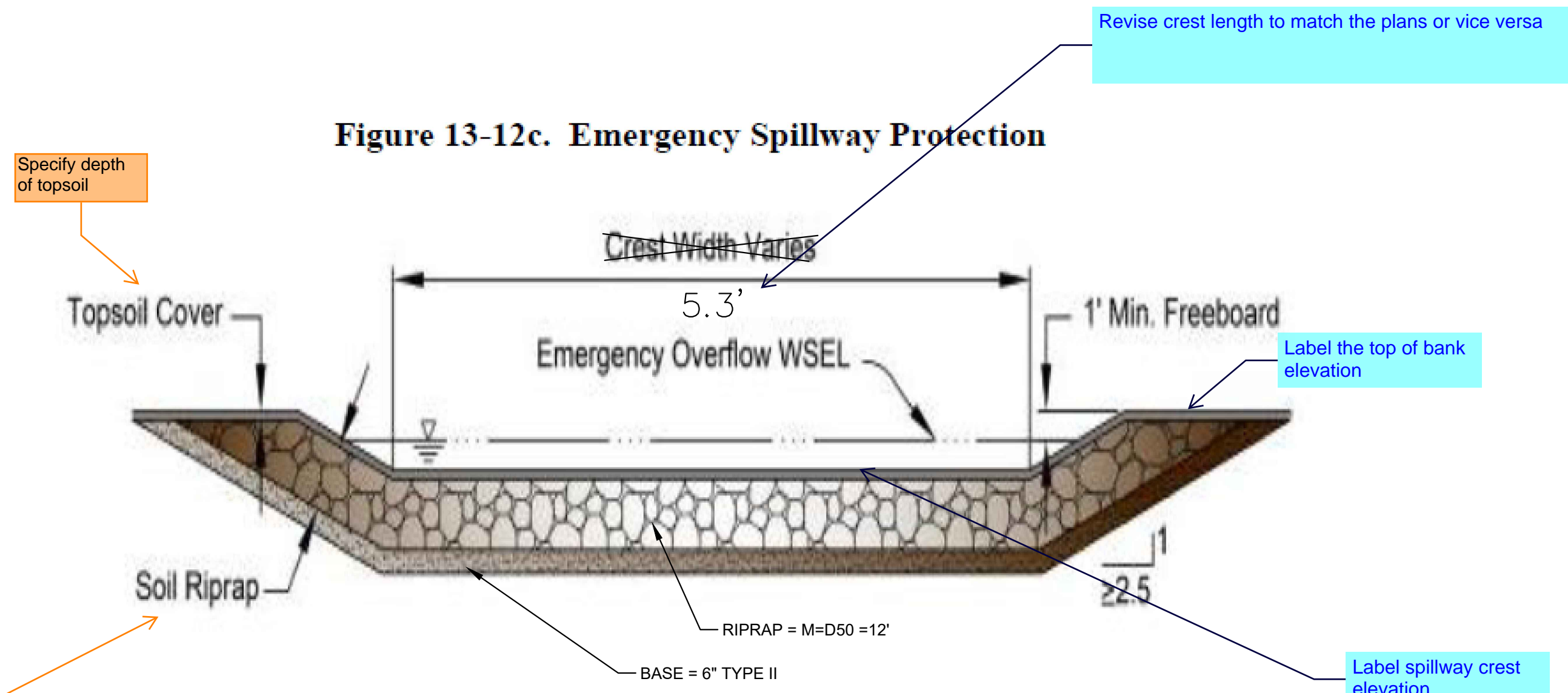
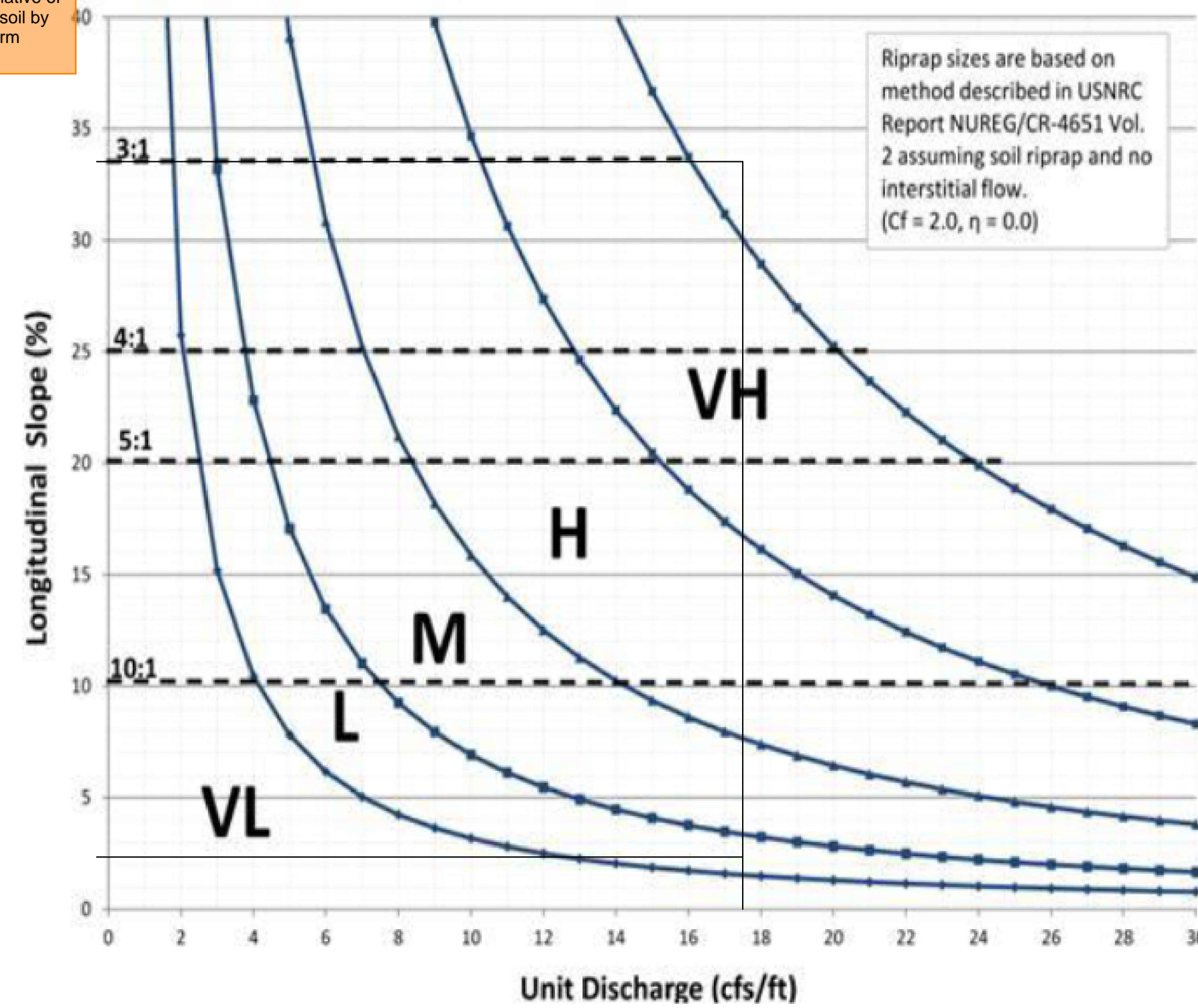


Figure 13-12d. Riprap Types for Emergency Spillway Protection



VH = D50 = 24" FOR 3:1 SLOPE ONLY
 L = D50 = 9" FOR ALL OTHER SITE RIPRAP

Figure 13-12b. Emergency Spillway Profile at Embankment

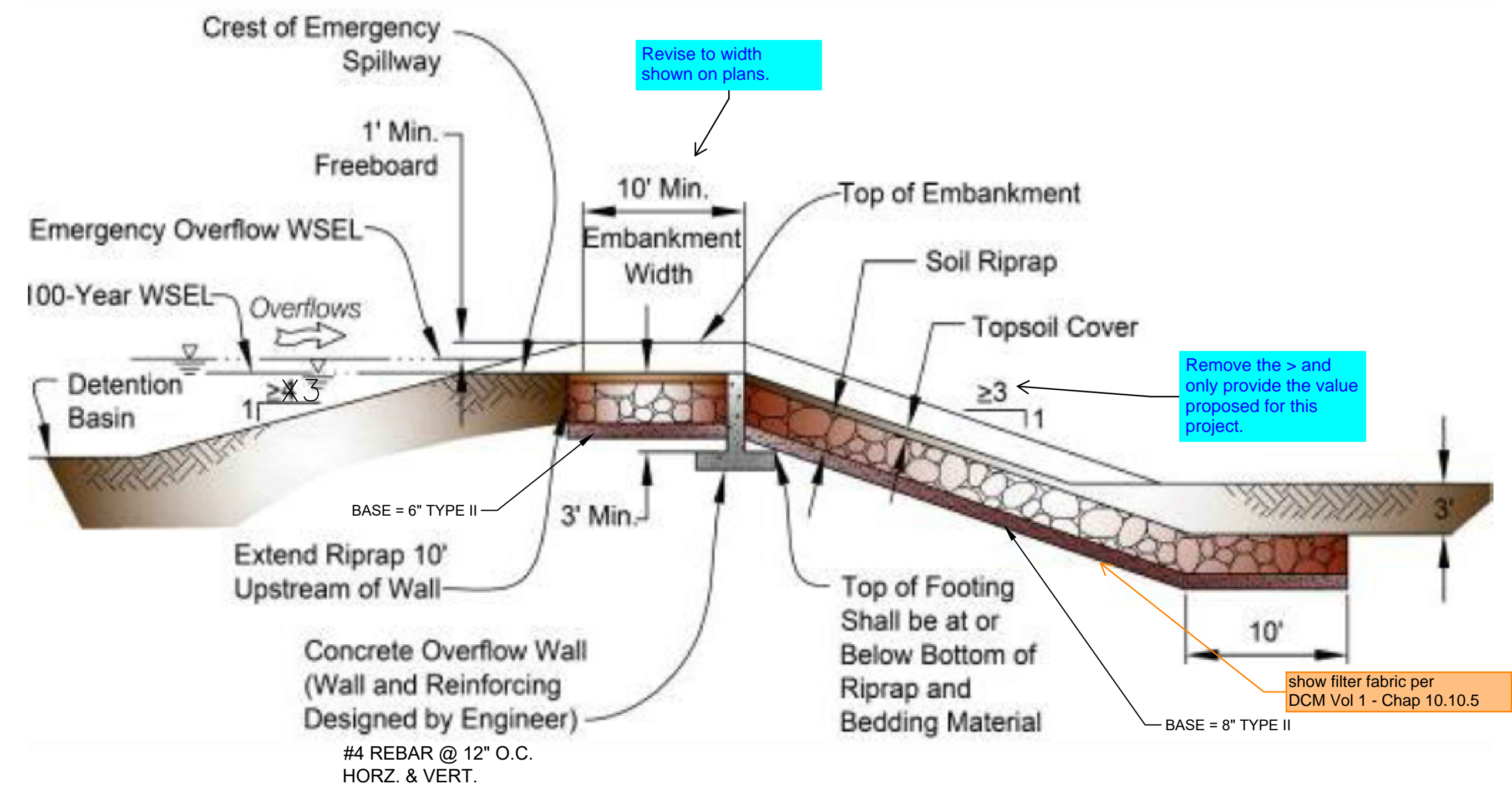
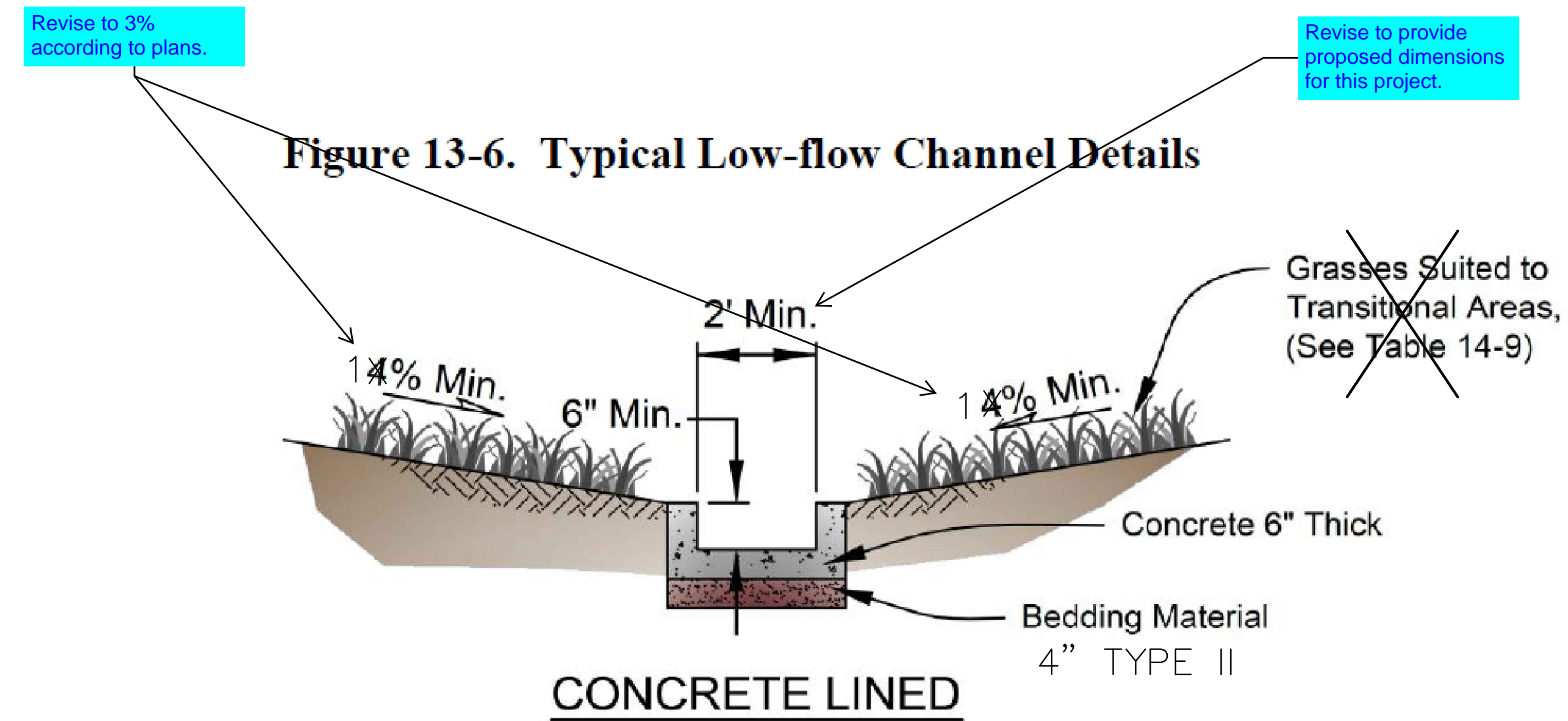


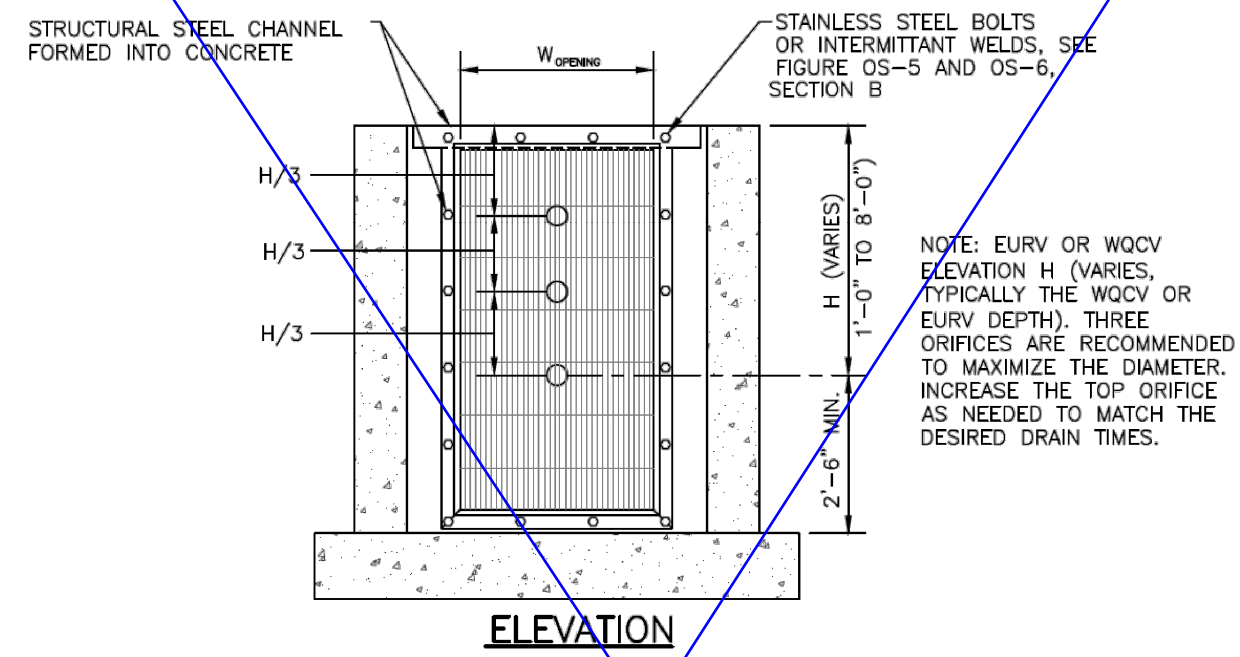
Figure 13-6. Typical Low-flow Channel Details



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SHEET TITLE: POND DETAILS (2)			
DESIGNED BY: JCM	SCALE:	DATE ISSUED: OCT, 2020	
DRAWN BY: JCM	HT: NTS	SHEET NO. 7 OF 15 SHEETS	
CHECKED BY: JH	V:		
DWG:			

Outlet Structures

T-12

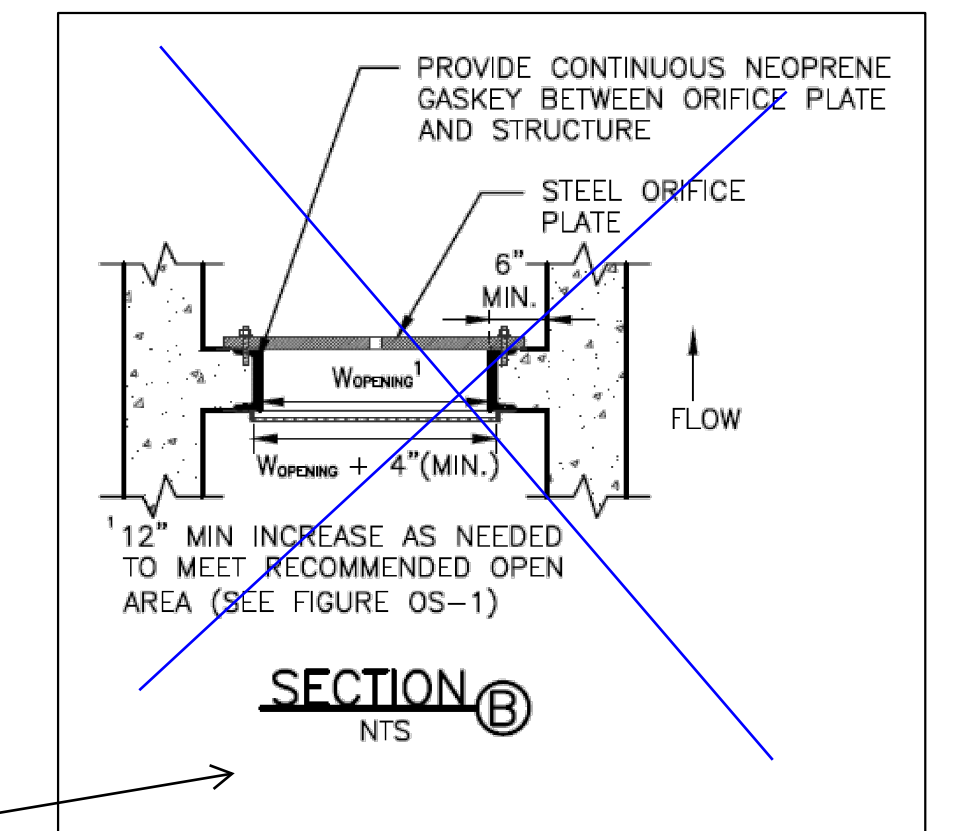
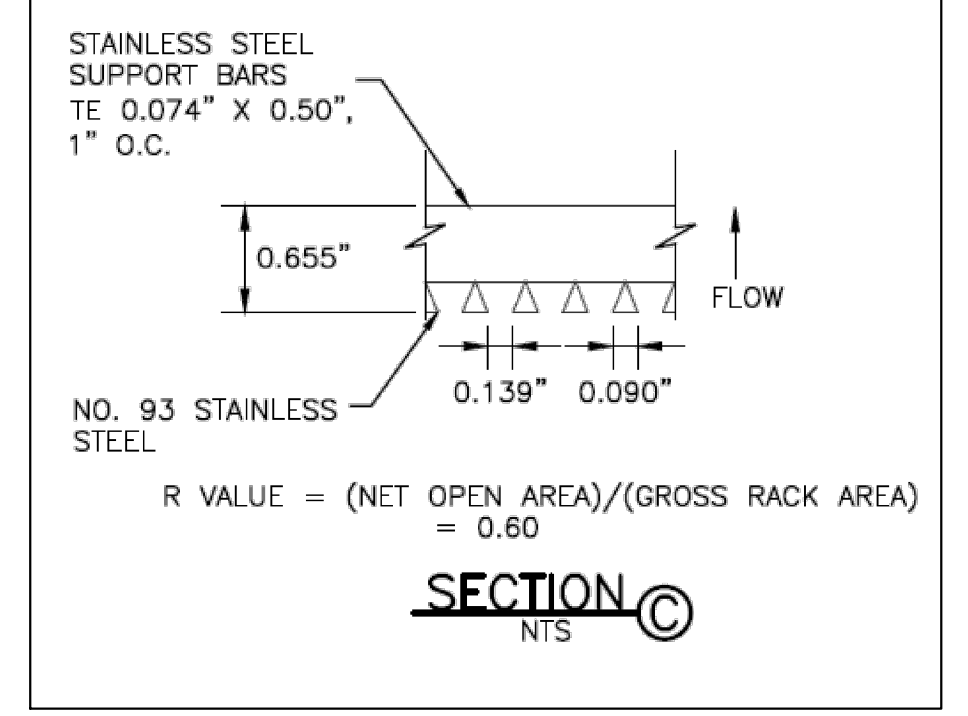
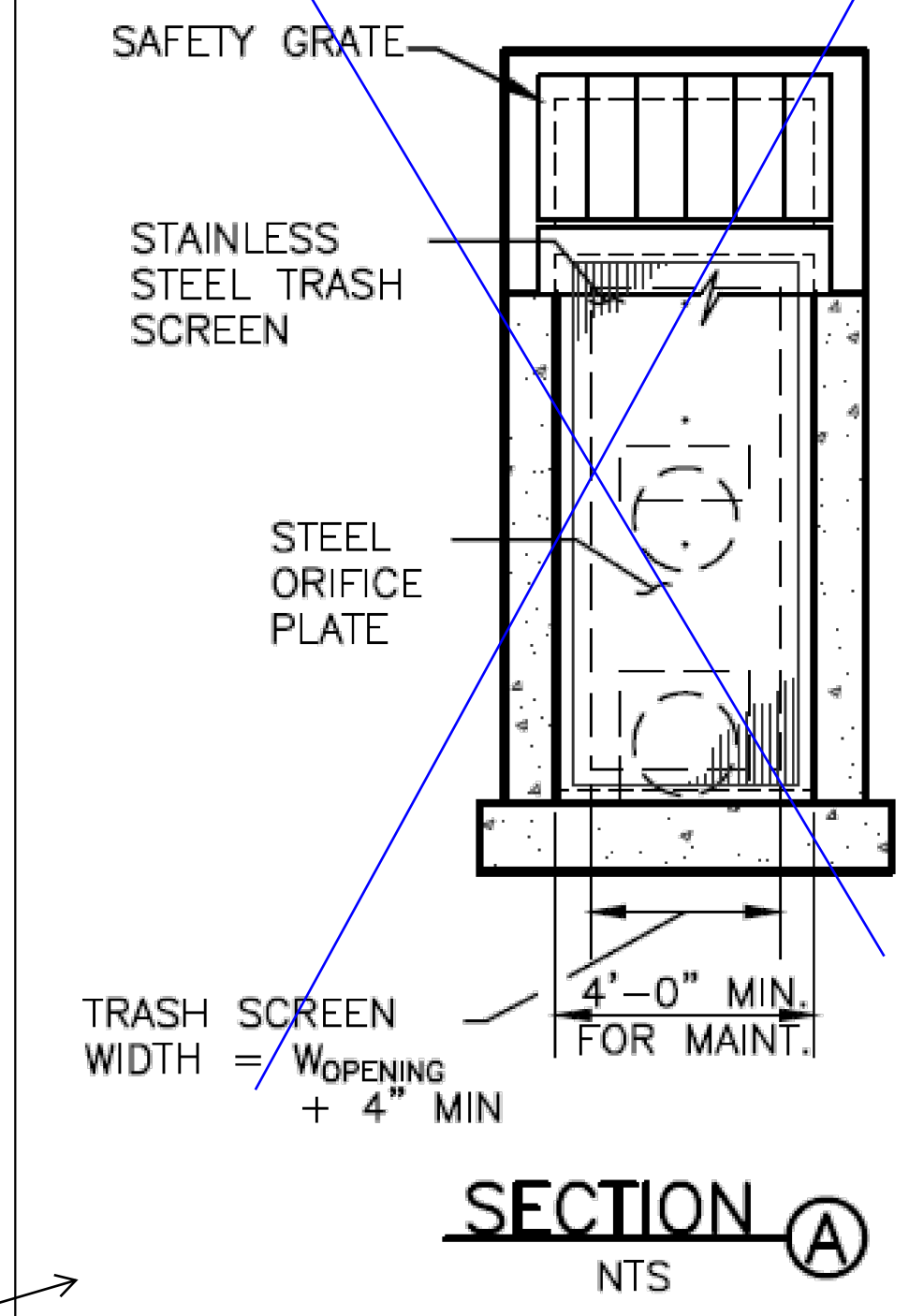
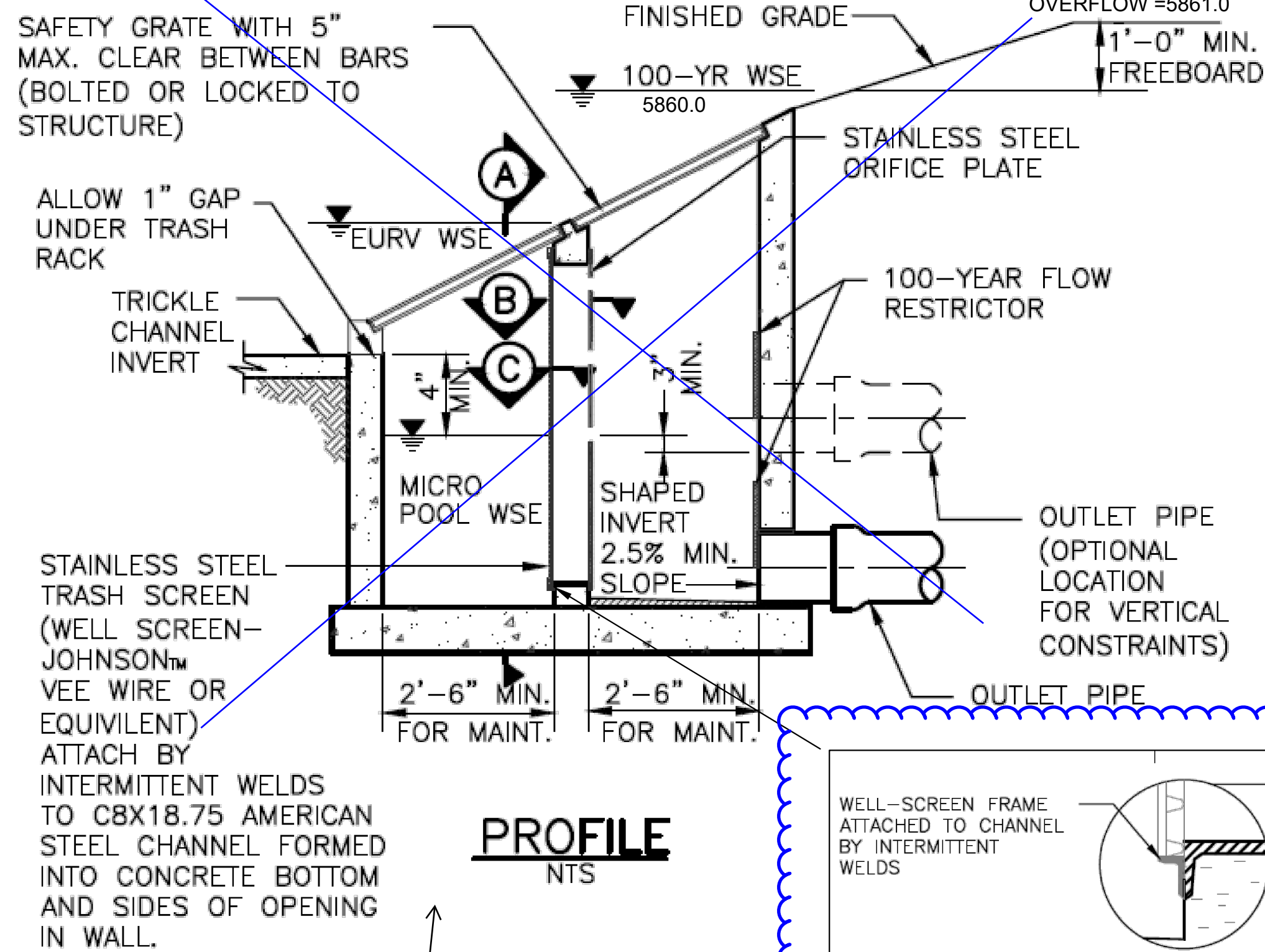


ORIFICE PLATE NOTES:

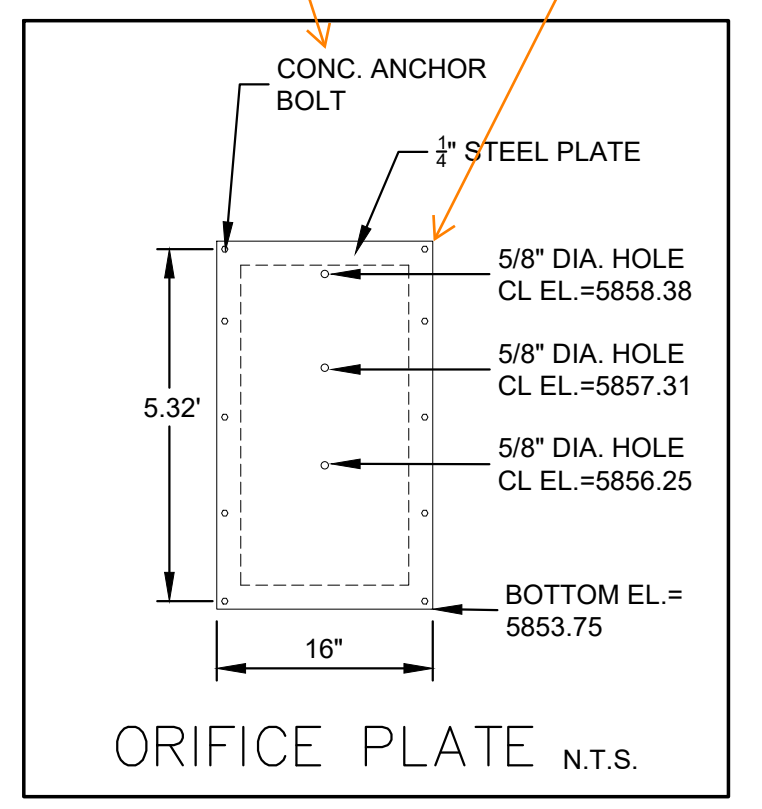
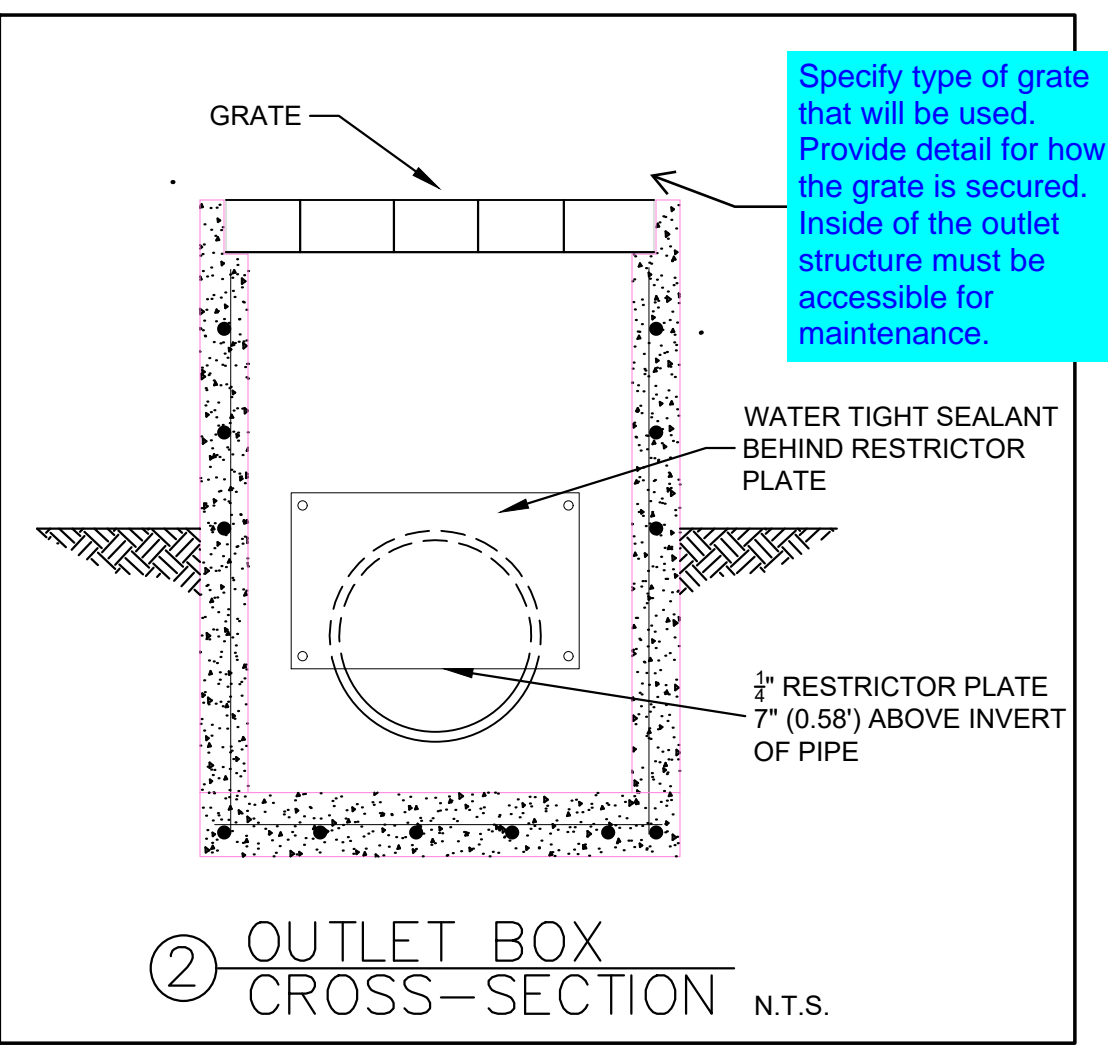
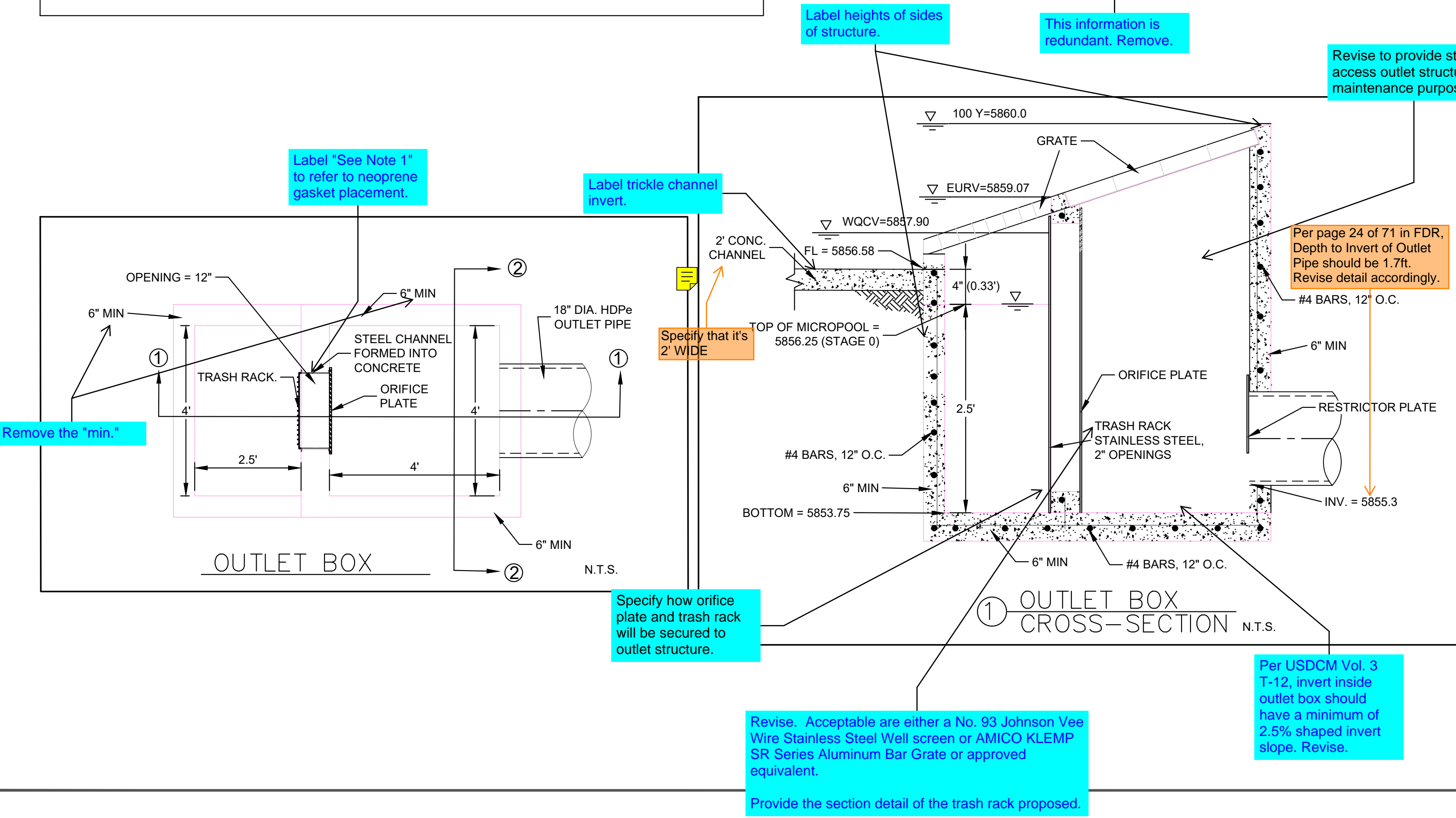
1. PROVIDE CONTINUOUS NEOPRENE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE.
 2. BOLT PLATE TO CONCRETE 12" MAX. ON CENTER. SEE TABLE OS-2 FOR PLATE THICKNESS.
- EURV AND WQCV TRASH RACKS:**
1. WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
 2. BAR GATE TRASH RACKS SHALL BE ALUMINUM AND SHALL BE BOLTED USING STAINLESS STEEL HARDWARE.
 3. TRASH RACK OPEN AREAS ARE FOR SPECIFIED TRASH RACK MATERIALS. TOTAL TRASH RACK SIZE MAY NEED TO BE ADJUSTED FOR MATERIALS HAVING DIFFERENT OPEN AREA/GROSS AREA RATIO (R VALUE).
 4. STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.
- OVERFLOW SAFETY GRATES:**
1. ALL SAFETY GRATES SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED AND LOCKABLE OR BOLTABLE ACCESS PANELS.
 2. SAFETY GRATES SHALL BE STAINLESS STEEL, ALUMINUM, OR STEEL. STEEL GRATES SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
 3. SAFETY GRATES SHALL BE DESIGNED SUCH THAT THE DIAGONAL DIMENSION OF EACH OPENING IS SMALLER THAN THE DIAMETER OF THE OUTLET PIPE.
 4. STRUCTURAL DESIGN OF SAFETY GRATES SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.

Figure OS-4. Orifice plate and trash rack detail and notes

November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 OS-7



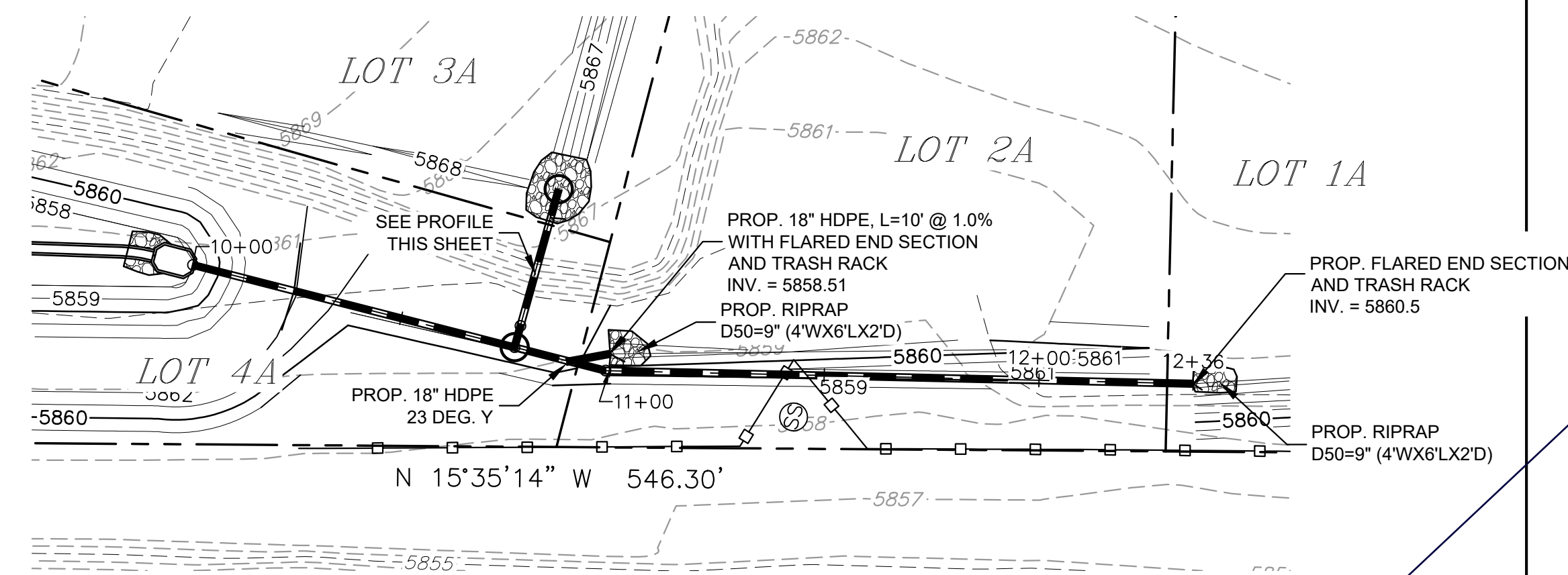
- NOTE:**
- 1) PROVIDE CONTINUOUS NEOPRENE GASKET BETWEEN ORIFICE PLATE AND CONCRETE STRUCTURE.
 - 2) ALL EXTERIOR STEEL SHALL BE WITH STAINLESS OR HOT DIPPED GALVANIZED.
 - 3) ALL METAL SURFACES ARE TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND.
- Add note: Per geotech report, all concrete placed on site is to use Type II cement.



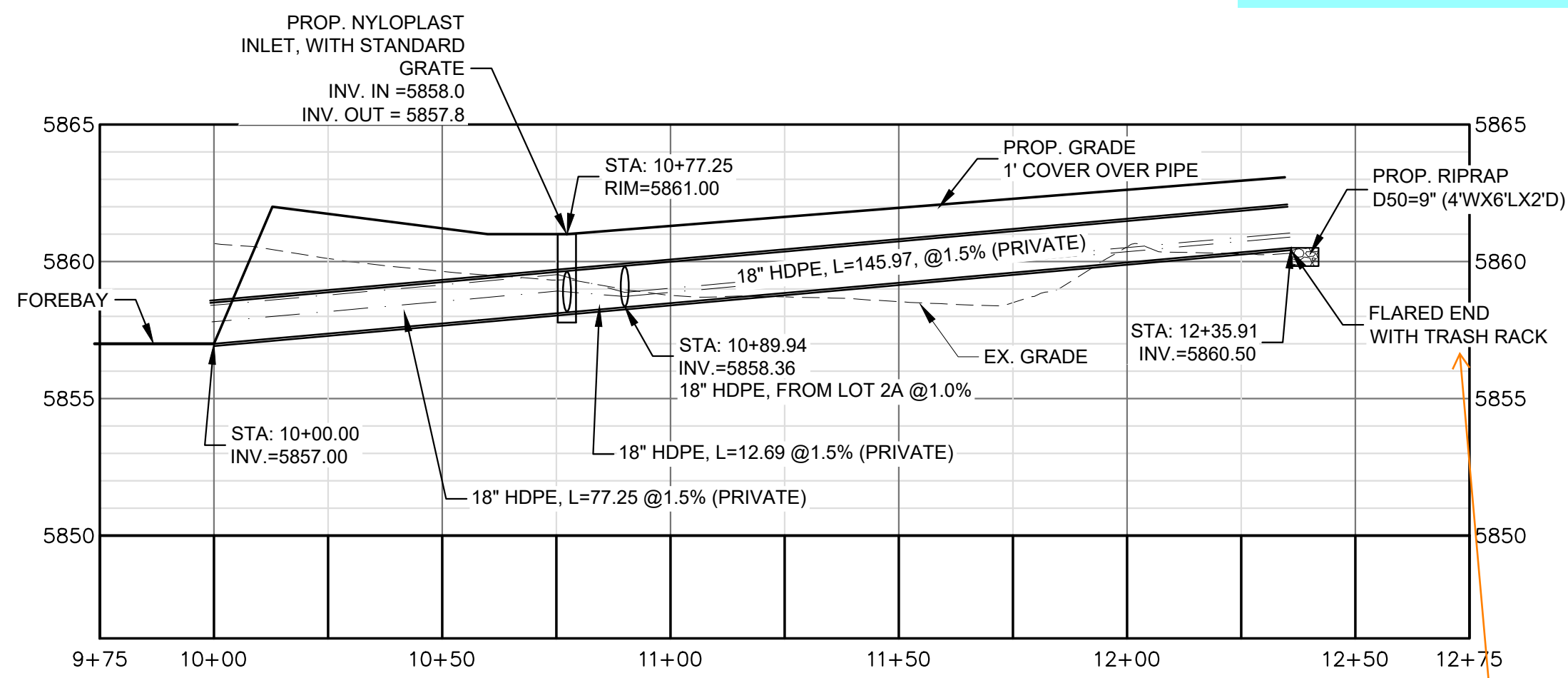
NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK:			
Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: OUTLET BOX DETAILS			
DESIGNED BY: JCM	SCALE: NTS	DATE ISSUED: OCT. 2020	
DRAWN BY: JCM	CH: NTS		
CHECKED BY: JH	V:	SHEET NO. 8 OF 15 SHEETS	
DWG:			

C:\Temp\CV\CAD\Grad\8 GRADING - Outlet Box Details.dwg, 10/3/2020 6:00:17 PM, DWG To PDF.pc3

C:\Temp\CV\CAD\Grad\9 STORM P&P.dwg, 10/3/2020 6:07:12 PM, DWG To PDF.pc3



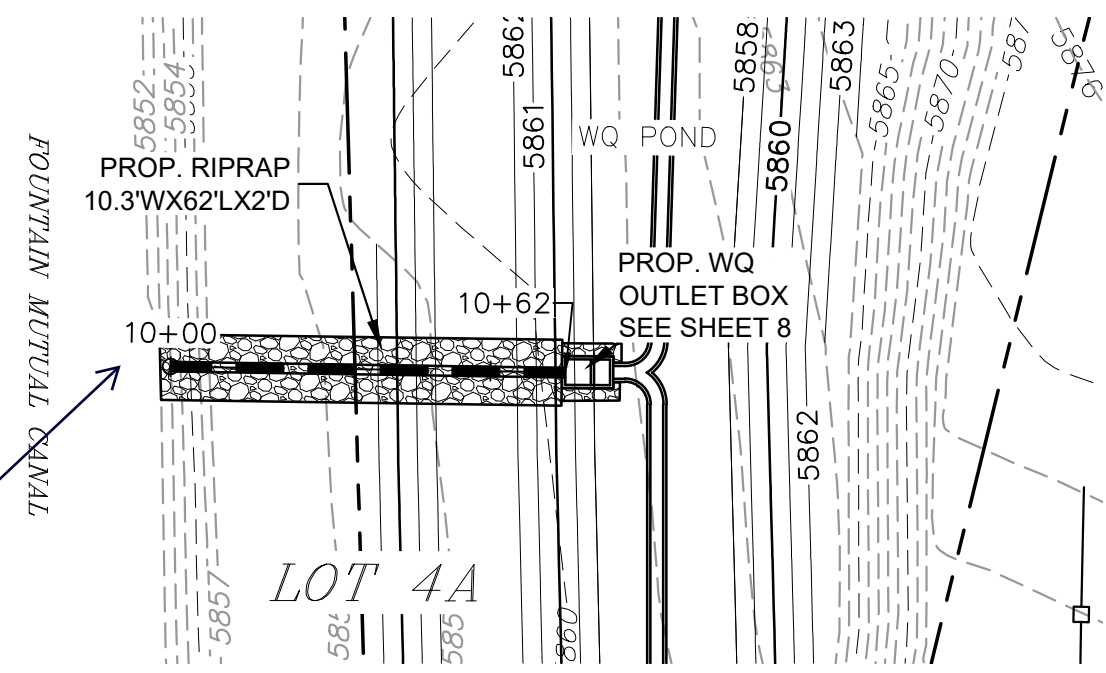
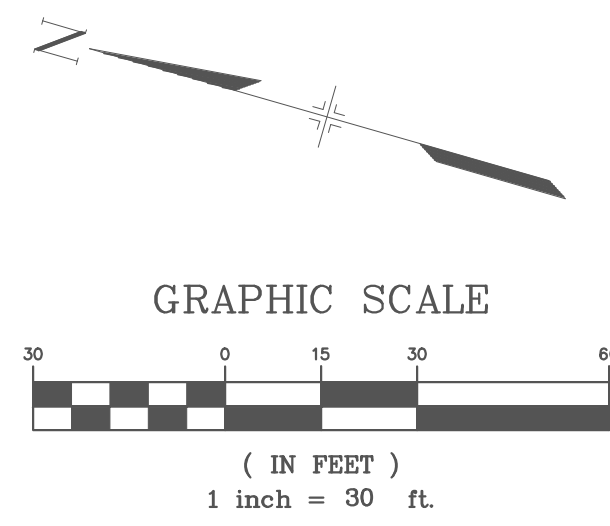
STORM LINE TO POND



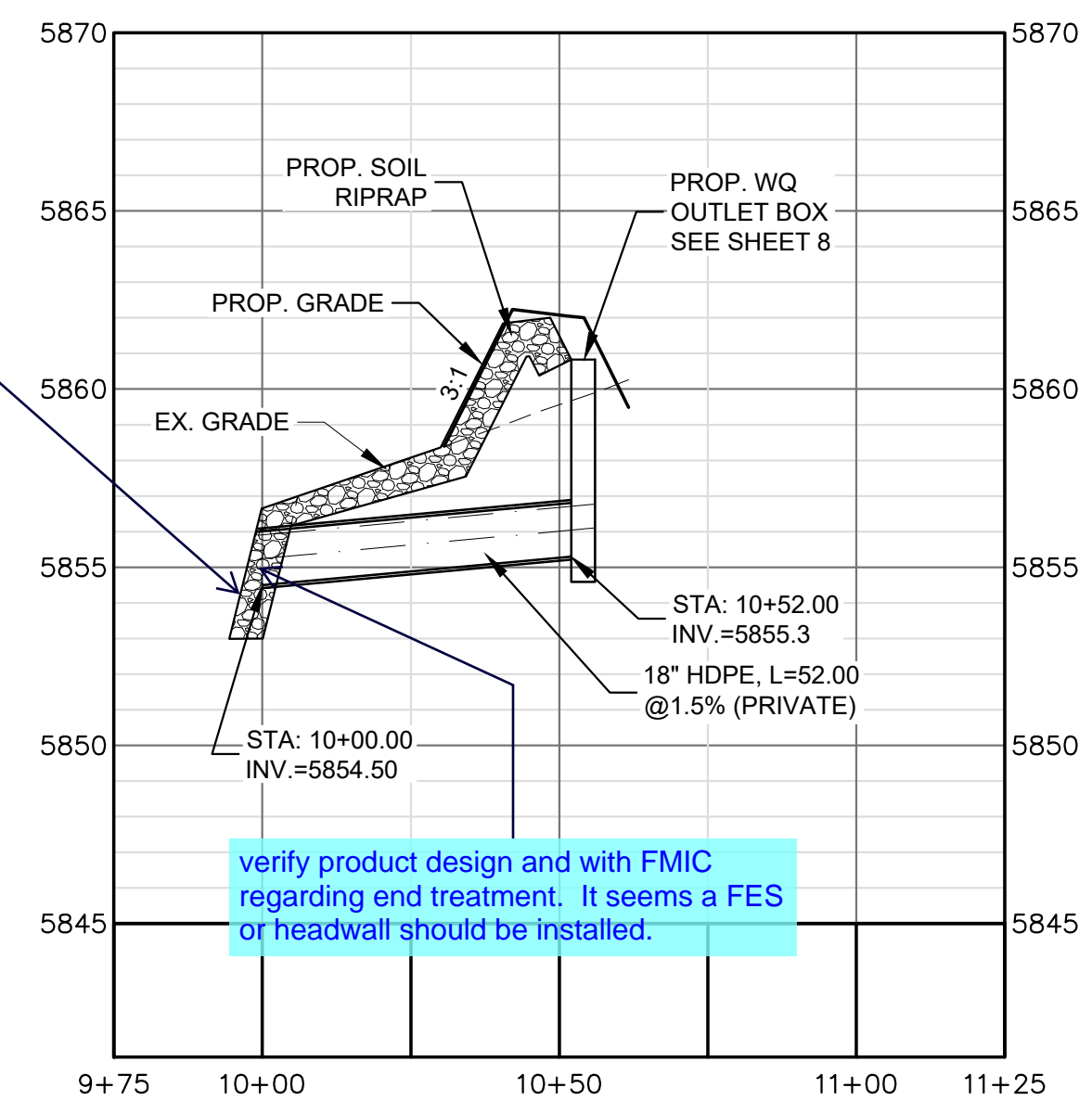
STORM PROFILE

HOR: 1"=30"
VERT: 1"=5"

Reference trash rack & inlet detail & sheet



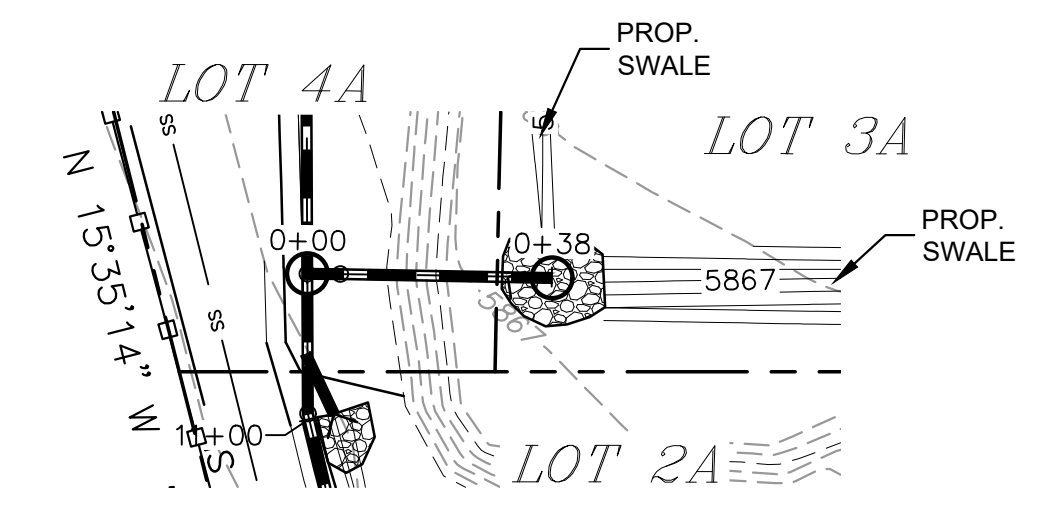
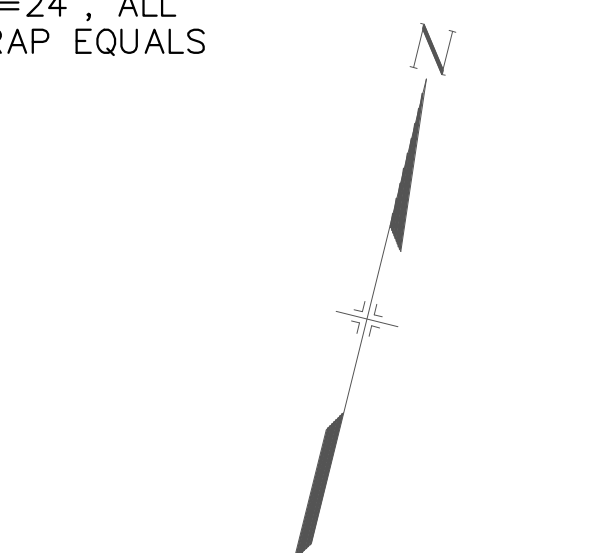
OUTLET PIPE



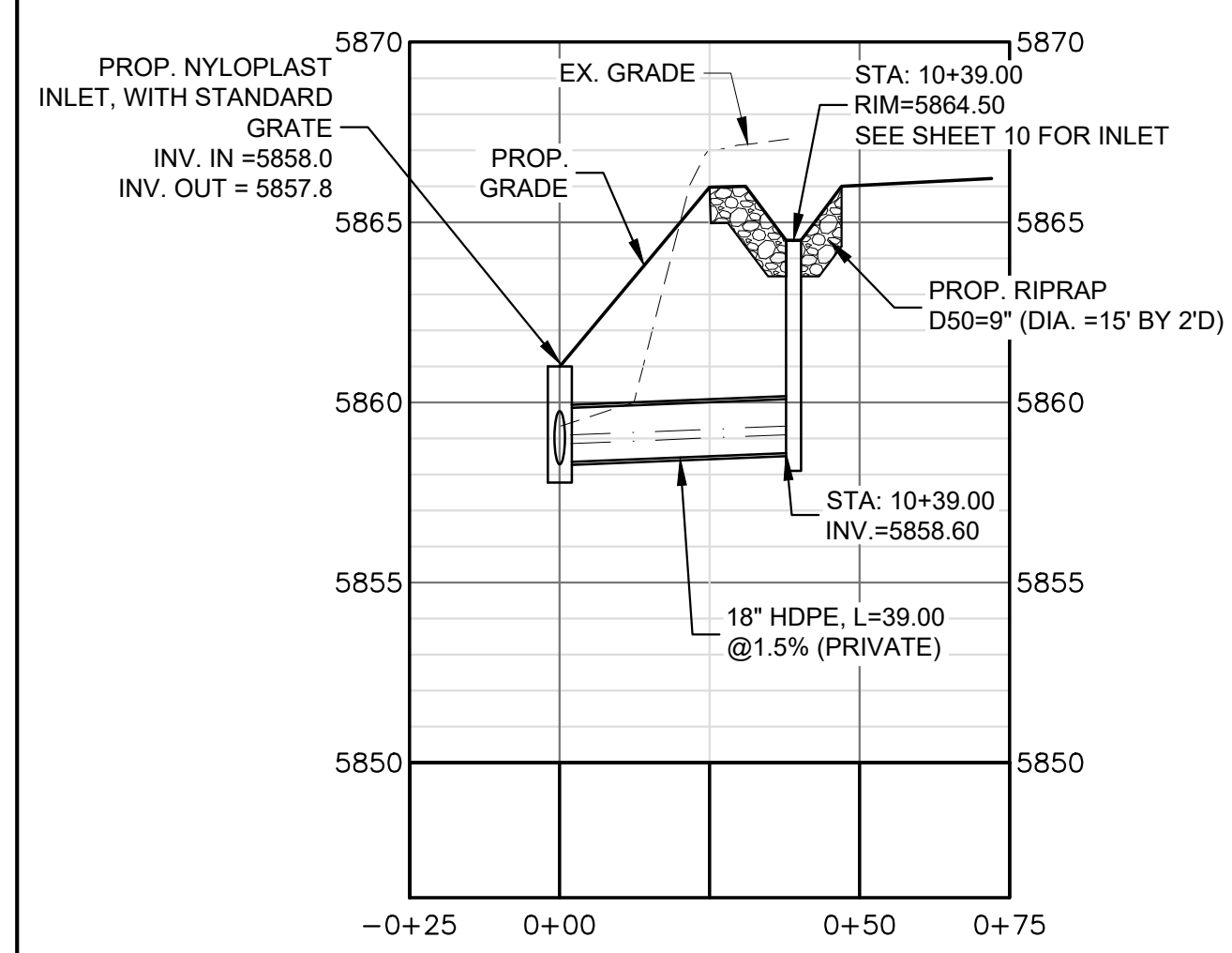
STORM PROFILE

HOR: 1"=30"
VERT: 1"=5"

verify product design and with FMIC regarding end treatment. It seems a FES or headwall should be installed.

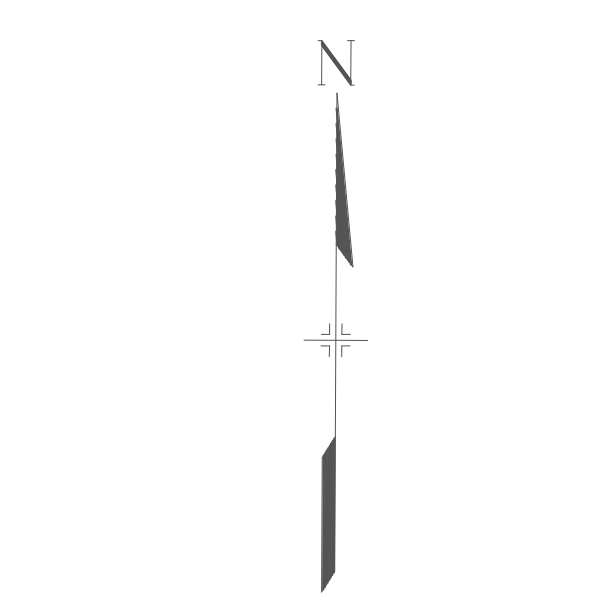


STORM PIPE FROM LOT 3A



STORM PROFILE

HOR: 1"=30"
VERT: 1"=5"



- NOTE:
- 1) SEE SHEET 10 FOR NYLOPLAST DETAILS.
 - 2) SEE SHEET 12 FOR FLARED END SECTIONS AND TRASH GUARD.

LEGEND

- PROPOSED STORM LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING FENCE
- EXISTING LOTS LINES
- HGL & EGL

NO.	DATE	DESCRIPTION	BY
REVISIONS			

CTR Engineering, Inc.

16392 TIMBER MEADOW DRIVE
COLORADO SPRINGS, CO 80908
(719) 964-6654

PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A

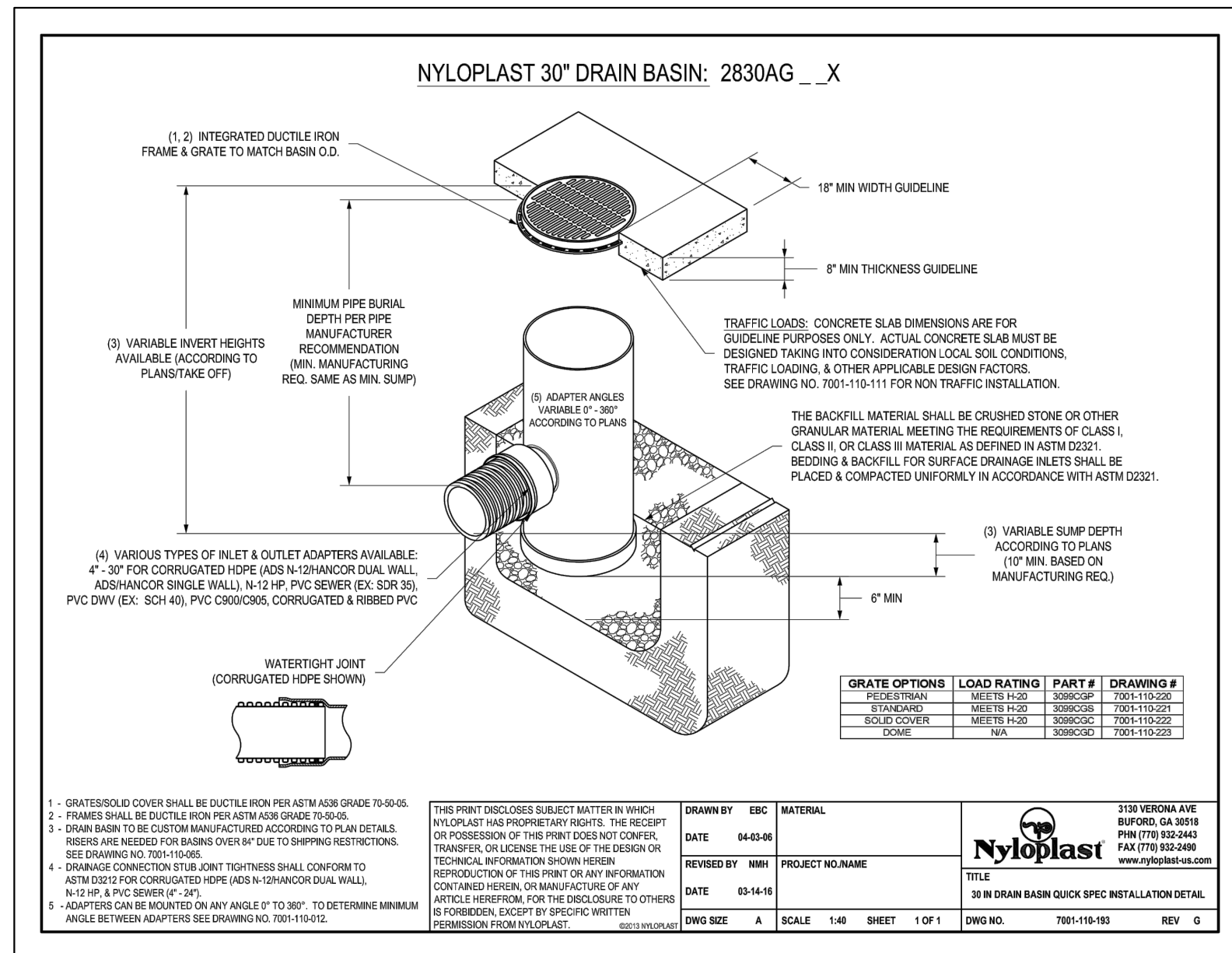
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)

PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL

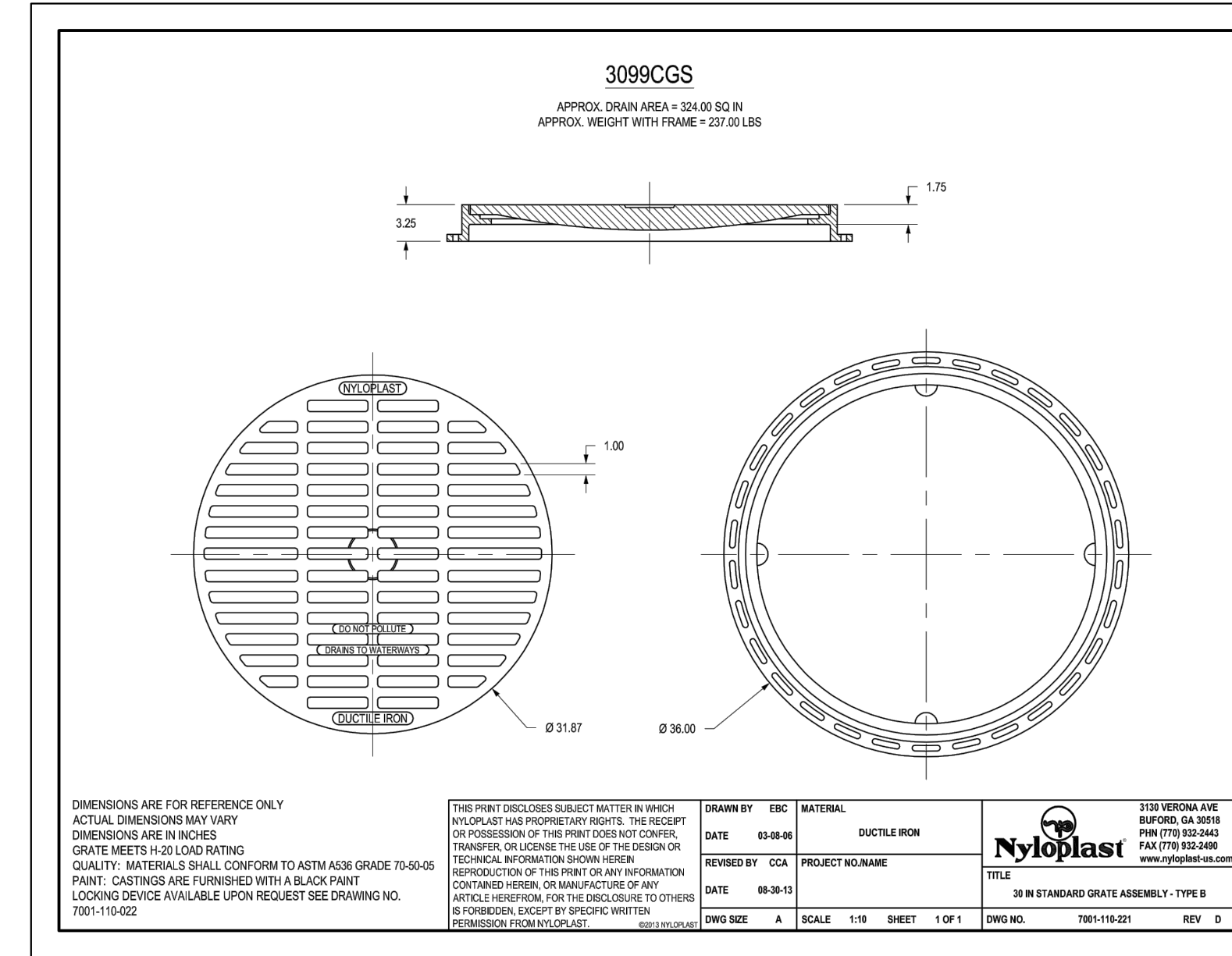
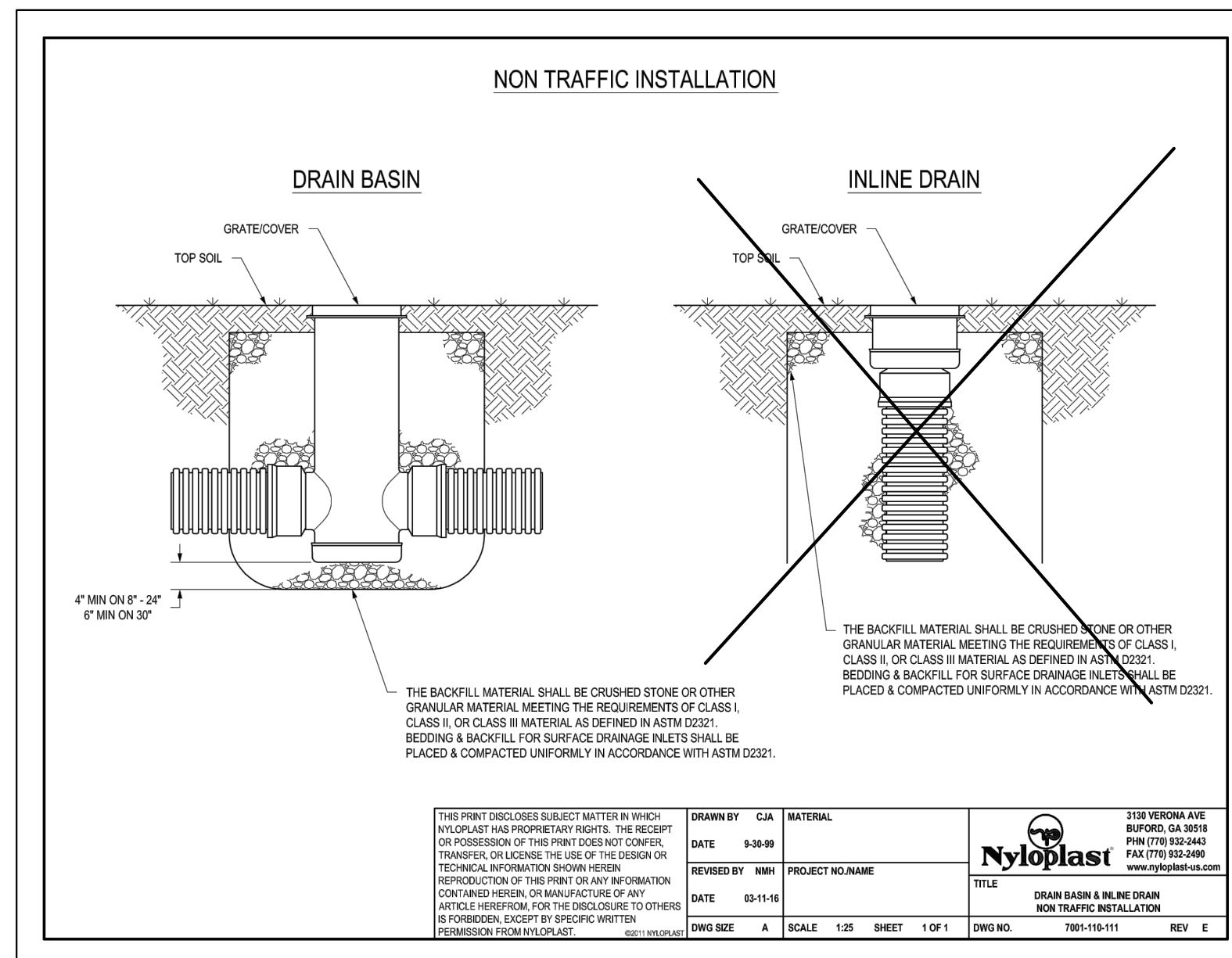
SHEET TITLE: STORM PLAN AND PROFILE

DESIGNED BY: JCM SCALE: DATE ISSUED: OCT, 2020
DRAWN BY: JCM H: 1"=30"
CHECKED BY: JH V: SHEET NO. 9 OF 15 SHEETS

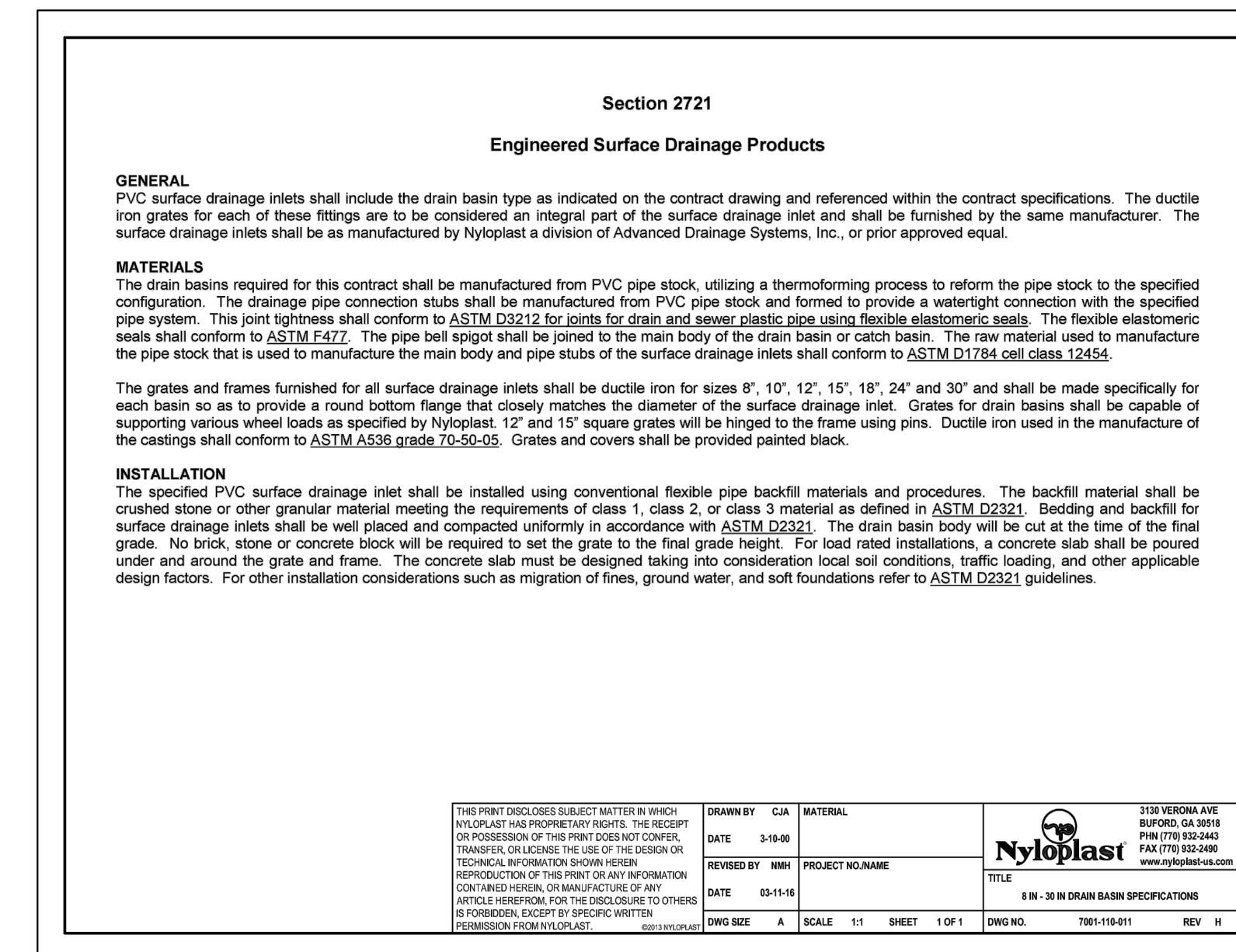
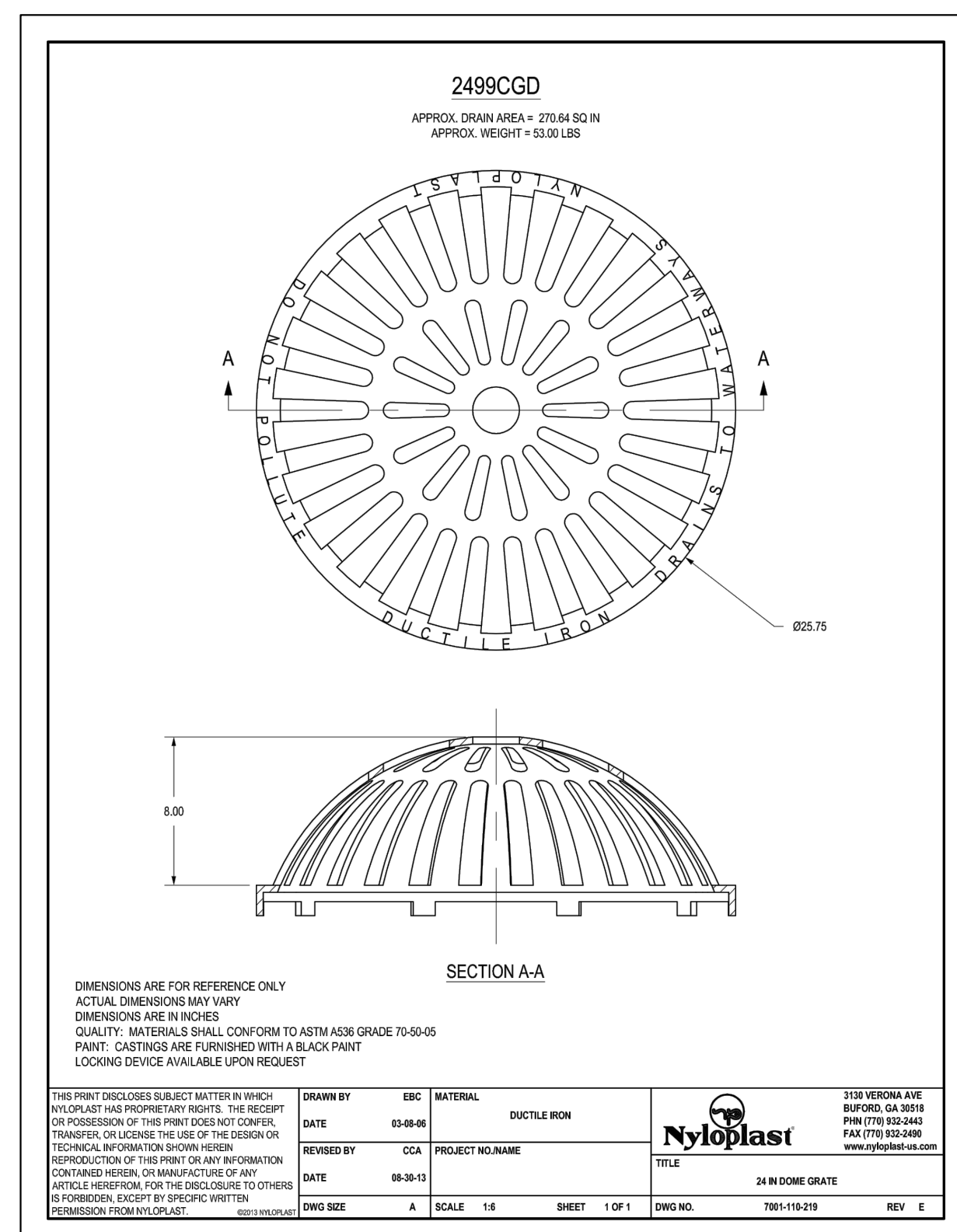
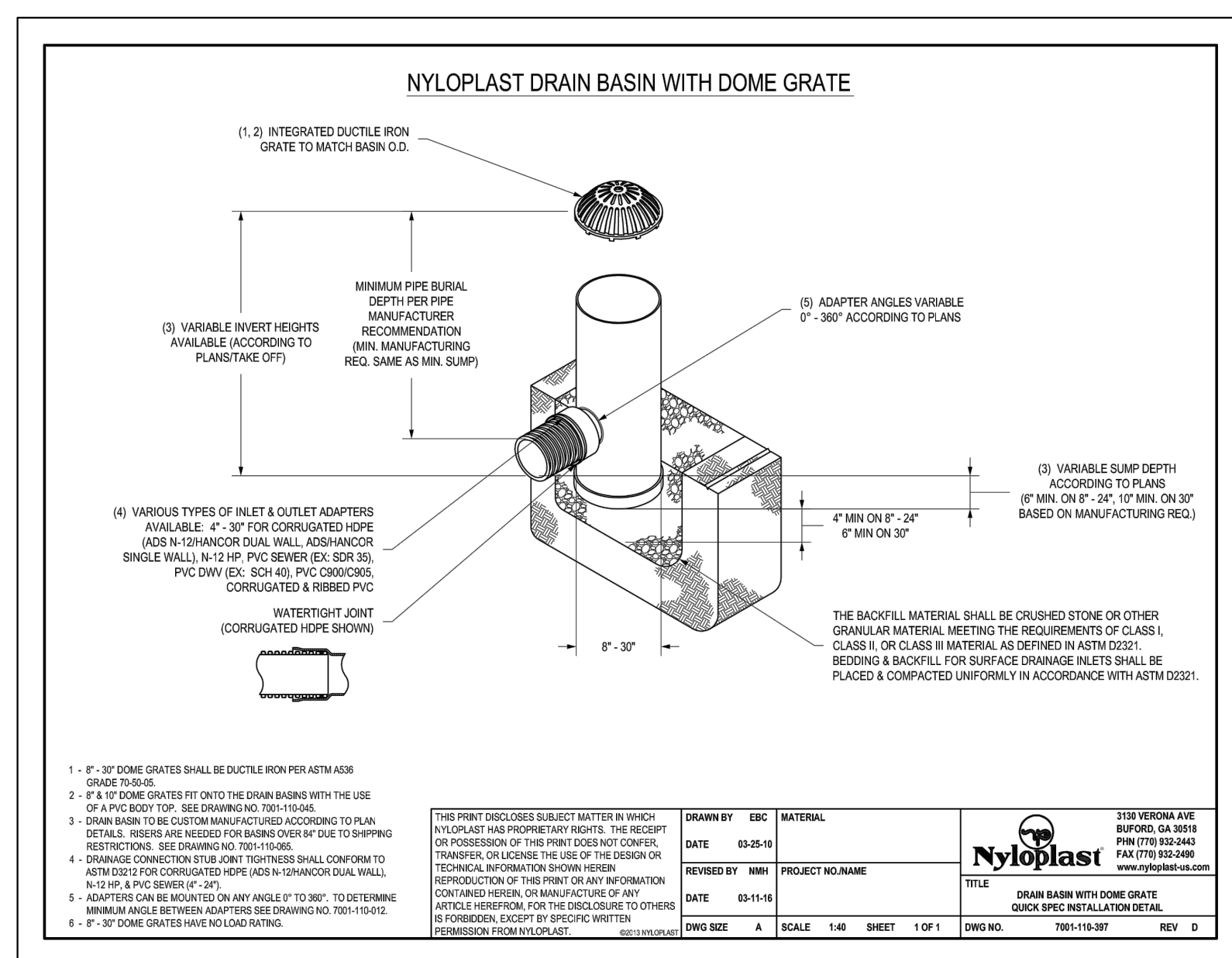
DWG:



INLINE STORM STA: 10+77.30

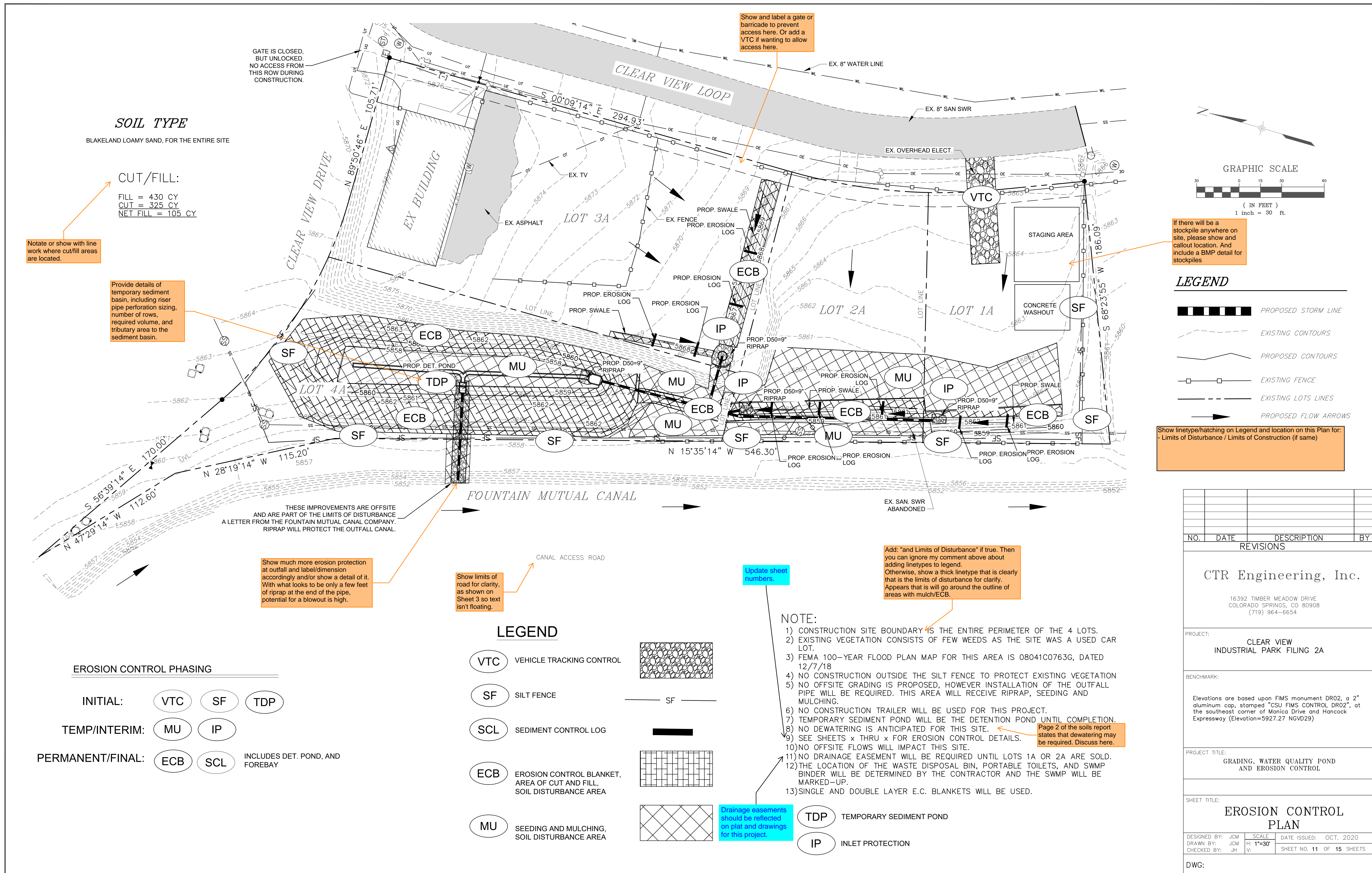


LOT 3A



NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: NYLOPLAST DETAILS			
DESIGNED BY: JCM	SCALE: NA	DATE ISSUED: OCT. 2020	
DRAWN BY: JCM	HH: NA		
CHECKED BY: JH	V: NA	SHEET NO. 10 OF 15 SHEETS	
DWG:			

C:\Temp\CV\CAD\Grad\11 GRADING & EC Plan.dwg, 10/3/2020 6:12:05 PM, DWG To PDF.pc3



SOIL TYPE
BLAKELAND LOAMY SAND, FOR THE ENTIRE SITE

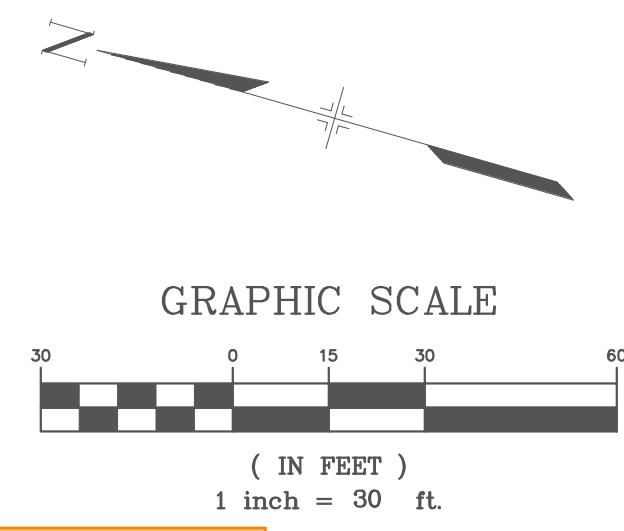
CUT/FILL:
FILL = 430 CY
CUT = 325 CY
NET FILL = 105 CY

Notate or show with line work where cut/fill areas are located.

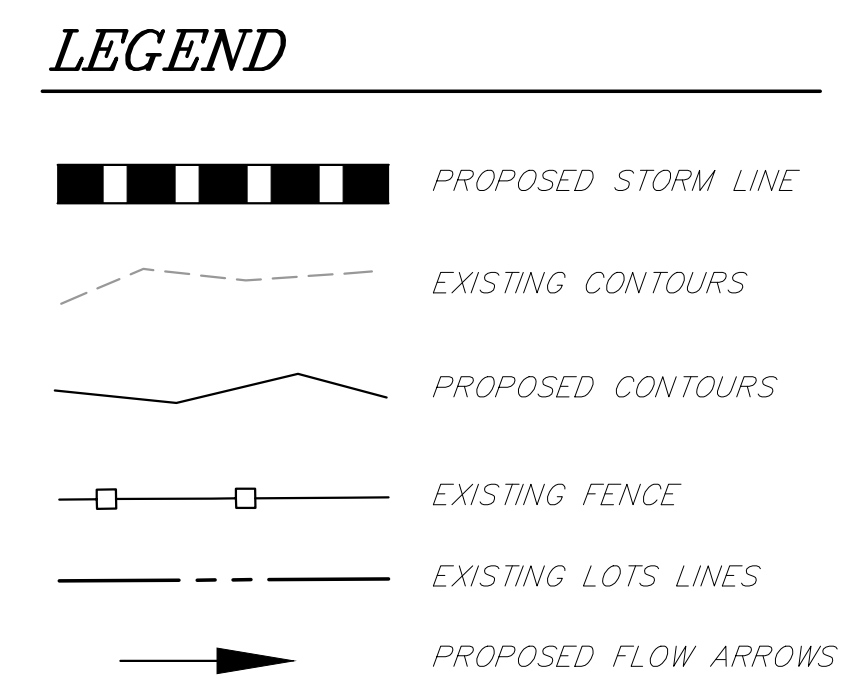
Provide details of temporary sediment basin, including riser pipe perforation sizing, number of rows, required volume, and tributary area to the sediment basin.

GATE IS CLOSED, BUT UNLOCKED. NO ACCESS FROM THIS ROW DURING CONSTRUCTION.

Show and label a gate or barricade to prevent access here. Or add a VTC if wanting to allow access here.



If there will be a stockpile anywhere on site, please show and callout location. And include a BMP detail for stockpiles



Show linetype/hatching on Legend and location on this Plan for:
- Limits of Disturbance / Limits of Construction (if same)

THESE IMPROVEMENTS ARE OFFSITE AND ARE PART OF THE LIMITS OF DISTURBANCE. A LETTER FROM THE FOUNTAIN MUTUAL CANAL COMPANY. RIPRAP WILL PROTECT THE OUTFALL CANAL.

Show much more erosion protection at outfall and label/dimension accordingly and/or show a detail of it. With what looks to be only a few feet of riprap at the end of the pipe, potential for a blowout is high.

Show limits of road for clarity, as shown on Sheet 3 so text isn't floating.

Update sheet numbers.

Add: "and Limits of Disturbance" if true. Then you can ignore my comment above about adding linetypes to legend. Otherwise, show a thick linetype that is clearly that is the limits of disturbance for clarity. Appears that is will go around the outline of areas with mulch/ECB.

EROSION CONTROL PHASING

- INITIAL: (VTC) (SF) (TDP)
- TEMP/INTERIM: (MU) (IP)
- PERMANENT/FINAL: (ECB) (SCL) INCLUDES DET. POND, AND FOREBAY

LEGEND

- (VTC) VEHICLE TRACKING CONTROL
- (SF) SILT FENCE
- (SCL) SEDIMENT CONTROL LOG
- (ECB) EROSION CONTROL BLANKET, AREA OF CUT AND FILL, SOIL DISTURBANCE AREA
- (MU) SEEDING AND MULCHING, SOIL DISTURBANCE AREA

NOTE:

- CONSTRUCTION SITE BOUNDARY IS THE ENTIRE PERIMETER OF THE 4 LOTS.
- EXISTING VEGETATION CONSISTS OF FEW WEEDS AS THE SITE WAS A USED CAR LOT.
- FEMA 100-YEAR FLOOD PLAN MAP FOR THIS AREA IS 08041C0763G, DATED 12/7/18
- NO CONSTRUCTION OUTSIDE THE SILT FENCE TO PROTECT EXISTING VEGETATION
- NO OFFSITE GRADING IS PROPOSED, HOWEVER INSTALLATION OF THE OUTFALL PIPE WILL BE REQUIRED. THIS AREA WILL RECEIVE RIPRAP, SEEDING AND MULCHING.
- NO CONSTRUCTION TRAILER WILL BE USED FOR THIS PROJECT.
- TEMPORARY SEDIMENT POND WILL BE THE DETENTION POND UNTIL COMPLETION.
- NO DEWATERING IS ANTICIPATED FOR THIS SITE.
- SEE SHEETS x THRU x FOR EROSION CONTROL DETAILS.
- NO OFFSITE FLOWS WILL IMPACT THIS SITE.
- NO DRAINAGE EASEMENT WILL BE REQUIRED UNTIL LOTS 1A OR 2A ARE SOLD.
- THE LOCATION OF THE WASTE DISPOSAL BIN, PORTABLE TOILETS, AND SWMP BINDER WILL BE DETERMINED BY THE CONTRACTOR AND THE SWMP WILL BE MARKED-UP.
- SINGLE AND DOUBLE LAYER E.C. BLANKETS WILL BE USED.

Page 2 of the soils report states that dewatering may be required. Discuss here.

Drainage easements should be reflected on plat and drawings for this project.

- (TDP) TEMPORARY SEDIMENT POND
- (IP) INLET PROTECTION

NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT:	CLEAR VIEW INDUSTRIAL PARK FILING 2A		
BENCHMARK:	Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)		
PROJECT TITLE:	GRADING, WATER QUALITY POND AND EROSION CONTROL		
SHEET TITLE:	EROSION CONTROL PLAN		
DESIGNED BY: JCM	SCALE: 1"=30'	DATE ISSUED: OCT. 2020	
DRAWN BY: JCM			
CHECKED BY: JH			SHEET NO. 11 OF 15 SHEETS
DWG:			

Reduce the number of details inserted within a sheet. Text must be legible when printed on 11x17

Silt Fence (SF) SC-1

Description
A silt fence is a woven geotextile fabric attached to wooden posts and trenched into the ground. It is designed to intercept sediment before it enters a water body or a sediment basin. Silt fences are not designed to intercept runoff from disturbed areas.



Appropriate Uses
A silt fence can be used where runoff is conveyed from a disturbed area to sheet flow. Silt fences are not designed to receive concentrated flow or to be used as a filter fabric. Typical uses include:
• Downslope of a disturbed area to intercept sheet flow.
• Along the perimeter of a receiving water such as a stream, pond or wetland.
• At the perimeter of a construction site.

Design and Installation
Silt fences should be installed along the contour of slopes so that it intercepts sheet flow. The maximum recommended tributary drainage area per 100 linear feet of silt fence, installed along the contour, is approximately 0.25 acres with a disturbed slope length of up to 150 feet and a tributary slope gradient no steeper than 3:1. Longer and steeper slopes require additional measures. This recommendation only applies to silt fences installed along the contour. Silt fences installed for other uses, such as perimeter control, should be installed in a way that will not produce concentrated flows. For example, a "hook" installation may be appropriate to force runoff to pond and evaporate or infiltrate in multiple areas rather than concentrate and cause erosive conditions parallel to the silt fence.

Silt Fence	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SF-1

SC-1 Silt Fence (SF)

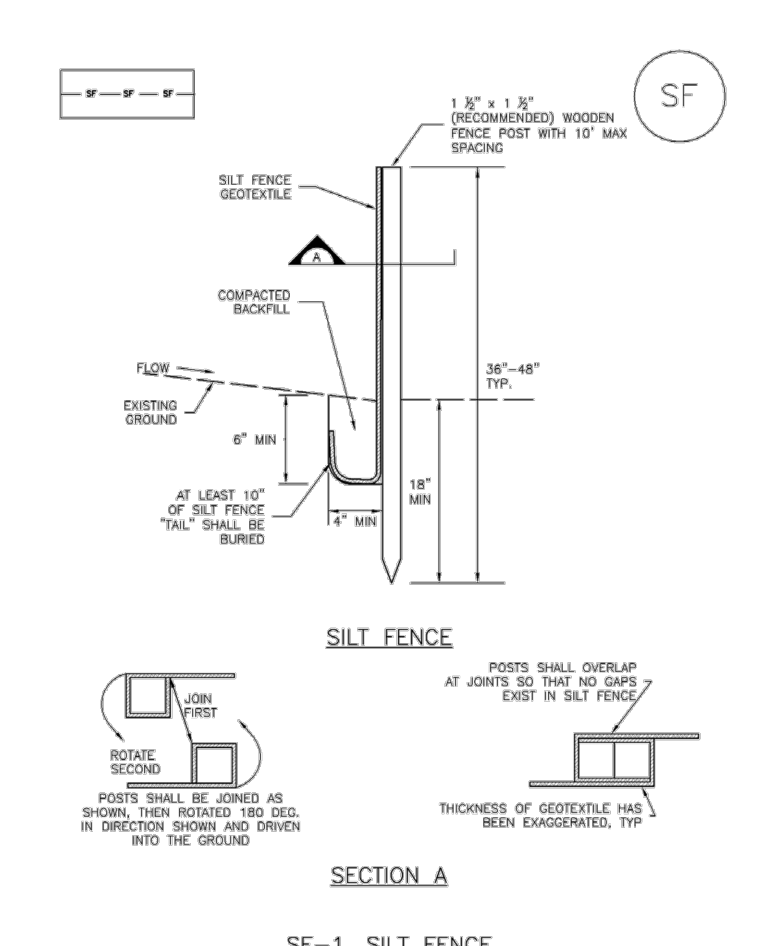
Maintenance and Removal
Inspection of all fences includes observing the material for tears or holes and checking for slumping flow and under area bypassing flows. Repair of silt fences typically involves replacing the damaged section with a new section. Sediment accumulated behind silt fences should be removed, as needed to maintain BMP effectiveness, typically before it reaches a depth of 6 inches.
Silt fences may be removed when the upstream area has reached final stabilization.



Photograph SF-2: When silt fence is not installed along the contour, a "hook" installation may be appropriate to force runoff to pond and evaporate or infiltrate in multiple areas rather than concentrate and cause erosive conditions parallel to the silt fence. Photo courtesy of Tom Coen.

SF-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Silt Fence (SF) SC-1



November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SF-3

SC-1 Silt Fence (SF)

SILT FENCE INSTALLATION NOTES
1. SILT FENCE MUST BE PLACED FROM THE TOP OF THE SLOPE TO ALLOW FOR WATER PENETRATION. SILT FENCE IS TO BE PLACED ON A SLOPE OF 3:1 OR GREATER. SILT FENCE IS TO BE PLACED ON A SLOPE OF 3:1 OR GREATER. SILT FENCE IS TO BE PLACED ON A SLOPE OF 3:1 OR GREATER.
2. SILT FENCE MUST BE PLACED FROM THE TOP OF THE SLOPE TO ALLOW FOR WATER PENETRATION. SILT FENCE IS TO BE PLACED ON A SLOPE OF 3:1 OR GREATER. SILT FENCE IS TO BE PLACED ON A SLOPE OF 3:1 OR GREATER.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "RAMMING LOG" OR BY WHEEL ROLLING. COMPACTOR SHALL BE SUCH THAT SILT FENCE REMAINS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAPLES. THERE SHOULD BE NO APPEARANCE OF BENT EDGES AFTER IT HAS BEEN ANCHORED TO THE STAPLES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAPLES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" WOODEN STAPLES AND NAILS SHOULD BE PLACED 1' 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 "U-HOOK." THE "U-HOOK" SHOULD BE PERPENDICULAR TO THE CONTOUR AND BE SUFFICIENTLY TIGHT TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE. (TYPICALLY 10' - 20').
7. SILT FENCE SHALL BE REPAIRED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES
1. INSPECT BUILT EACH MORNING AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BUILT SHOULD BE PRACTICE. THE REACTIVE INSPECT BUILT AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND FURTHER NECESSARY MAINTENANCE.
2. FURTHER OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BUILT IN EFFECTIVE OPERATING CONDITION. INSPECTURE AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THROUGHOUT.
3. WHERE BUILT HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON OCCURRENCE OF THE FAILURE.
4. A STAPLED ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE PERMEABILITY OF THE BUILT. TYPICALLY WITH DEPTH OF ACCUMULATED SEDIMENT IS APPROXIMATELY 6".
5. WHERE BUILT HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON OCCURRENCE OF THE FAILURE.
6. SILT FENCE IS TO BE REPAIRED IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERMANENT SEDIMENT CONTROL BUILT.
7. WHEN SILT FENCE IS REMOVED, ALL EXPOSED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDS AND MULCH OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION. (SEE NOTES FOR LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.)

SF-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Mulching (MU) EC-4

Description
Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and surrounding the mulch by crimping, tacking, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal conditions.
Mulch can be applied either using standard mechanical dry application methods or using hydro mulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.



Appropriate Uses
Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeded. Disturbed areas should be properly mulched and seeded, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site otherwise permanently stabilized.
Standard dry mulching is encouraged in most jurisdictions; however, hydro mulching may not be allowed in certain jurisdictions or may not be allowed near waterways.
Do not apply mulch during windy conditions.

Mulch	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

MU-1 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 June 2012

EC-4 Mulching (MU)

Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or the use of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tacking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.
Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grasses may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and tacking a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
On all areas sheltered from the wind and heavy rainfall, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1.45 T) if the fibers mixed with at least 7% of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydro mulching typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and pine, straw-coconut, coconut fiber, or cellulose can be used instead of mulch. (See the ECOMFRM BMP for more information.)
Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal
After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

MU-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 June 2012

Vehicle Tracking Control (VTC) SM-4

Description
Vehicle tracking controls provide stabilized construction site access where vehicles exit the site onto paved public roads. An effective vehicle tracking control helps remove sediment (mud or dirt) from vehicles, reducing tracking onto the paved surface.



Appropriate Uses
Implement a stabilized construction entrance or vehicle tracking control where frequent heavy vehicle traffic exits the construction site onto a paved roadway. An effective vehicle tracking control is particularly important during the following conditions:
• Wet weather periods when mud is easily tracked off site.
• During dry weather periods where dust is a concern.
• When poorly drained, clayey soils are present on site.

With aggregate vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way. Frequently as needed. Excess sediment in the roadway indicates that the stabilized construction entrance needs maintenance.
Ensure that drainage ditches at the entrance/exit area remain clear.
A stabilized entrance should be removed only when there is no longer the potential for vehicle tracking to occur. This is typically after the site has been stabilized.
When wheel wash equipment is used, be sure that the wash water is discharged to a sediment trap prior to discharge. Also inspect channels conveying the water from the wash area to the sediment trap and stabilize areas that may be eroding.
When a construction entrance is removed, excess sediment from the aggregate should be removed and disposed of appropriately. The entrance should be properly stabilized with a permanent surface following removal, typically by paving.

Vehicle Tracking Control	
Erosion Control	Moderate
Sediment Control	Yes
Site/Material Management	Yes

VTC-1 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

SM-4 Vehicle Tracking Control (VTC)

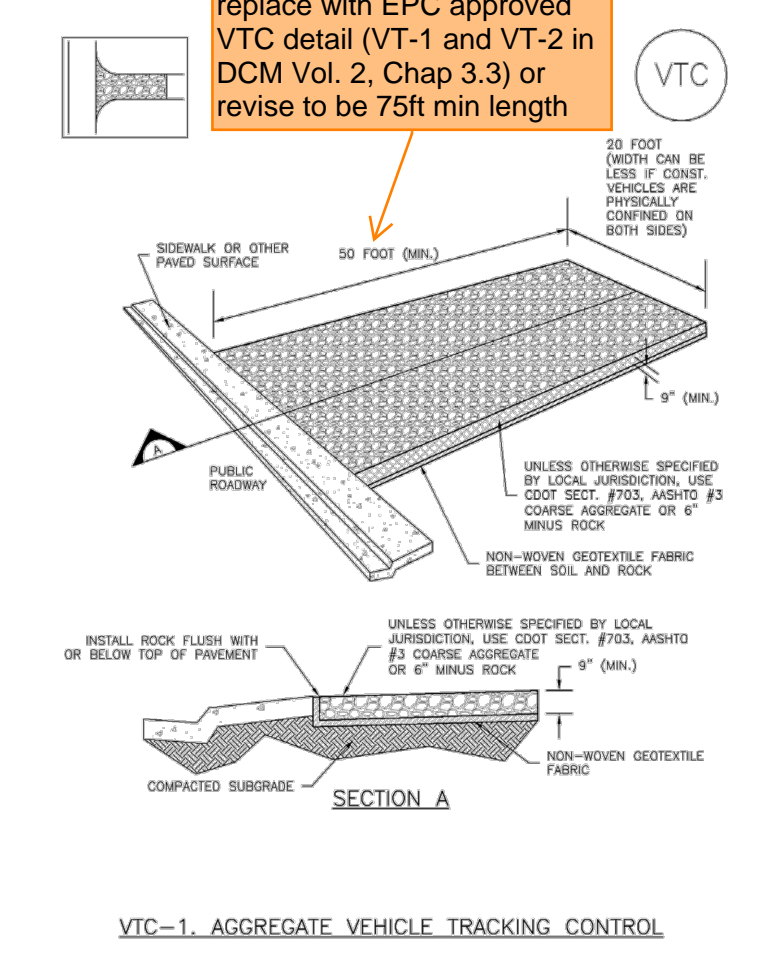
Maintenance and Removal
Inspect the area for degradation and replace aggregate or material used for a stabilized entrance/exit as needed. If the area becomes clogged and prevents water, remove and dispose of excess sediment or replace material with a fresh layer of aggregate as necessary.
With aggregate vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way. Frequently as needed. Excess sediment in the roadway indicates that the stabilized construction entrance needs maintenance.
Ensure that drainage ditches at the entrance/exit area remain clear.
A stabilized entrance should be removed only when there is no longer the potential for vehicle tracking to occur. This is typically after the site has been stabilized.
When wheel wash equipment is used, be sure that the wash water is discharged to a sediment trap prior to discharge. Also inspect channels conveying the water from the wash area to the sediment trap and stabilize areas that may be eroding.
When a construction entrance is removed, excess sediment from the aggregate should be removed and disposed of appropriately. The entrance should be properly stabilized with a permanent surface following removal, typically by paving.



Photograph VTC-2: A vehicle tracking control mat with wheel wash facility. Photo courtesy of Tom Coen.

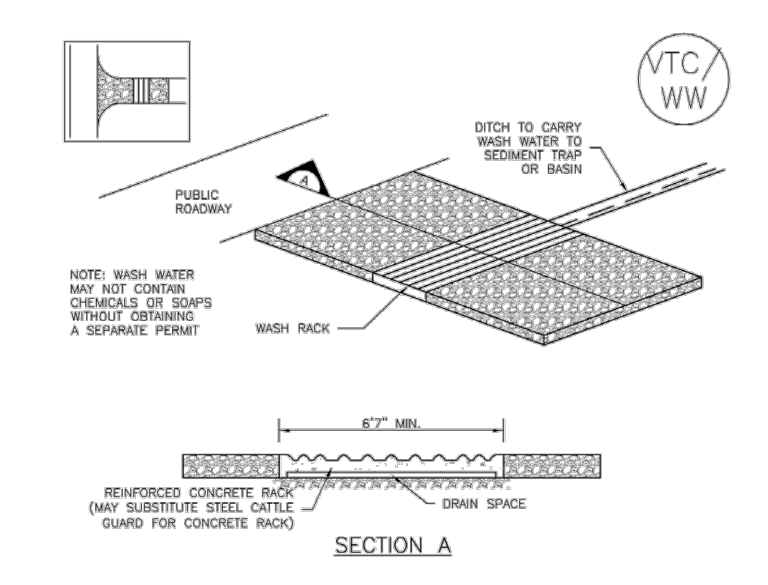
VTC-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Vehicle Tracking Control (VTC) SM-4



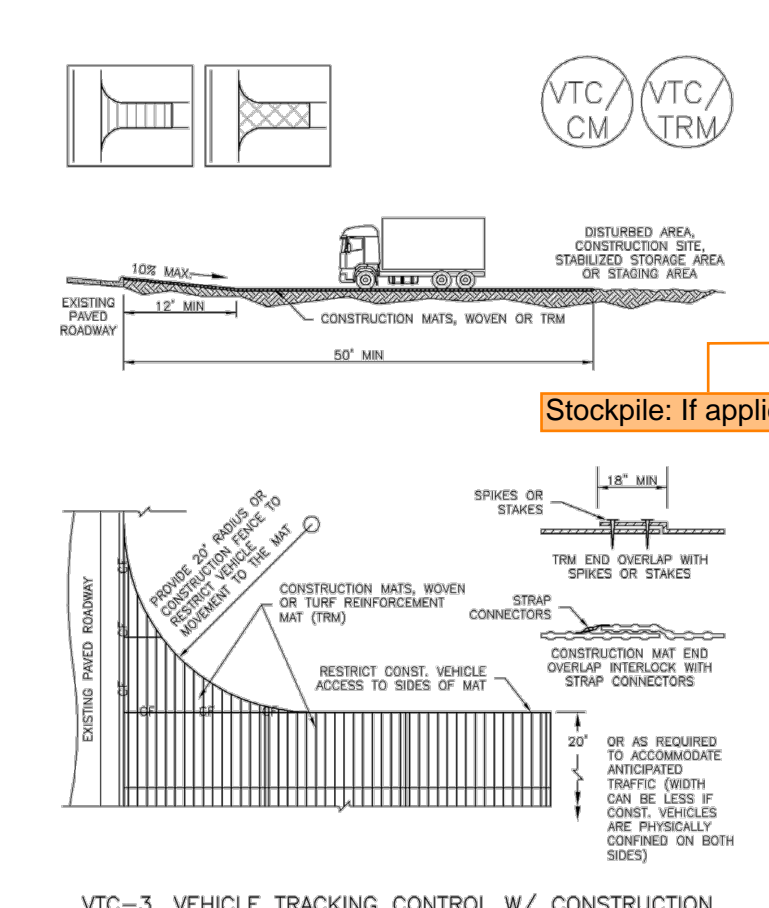
VTC-3 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

SM-4 Vehicle Tracking Control (VTC)



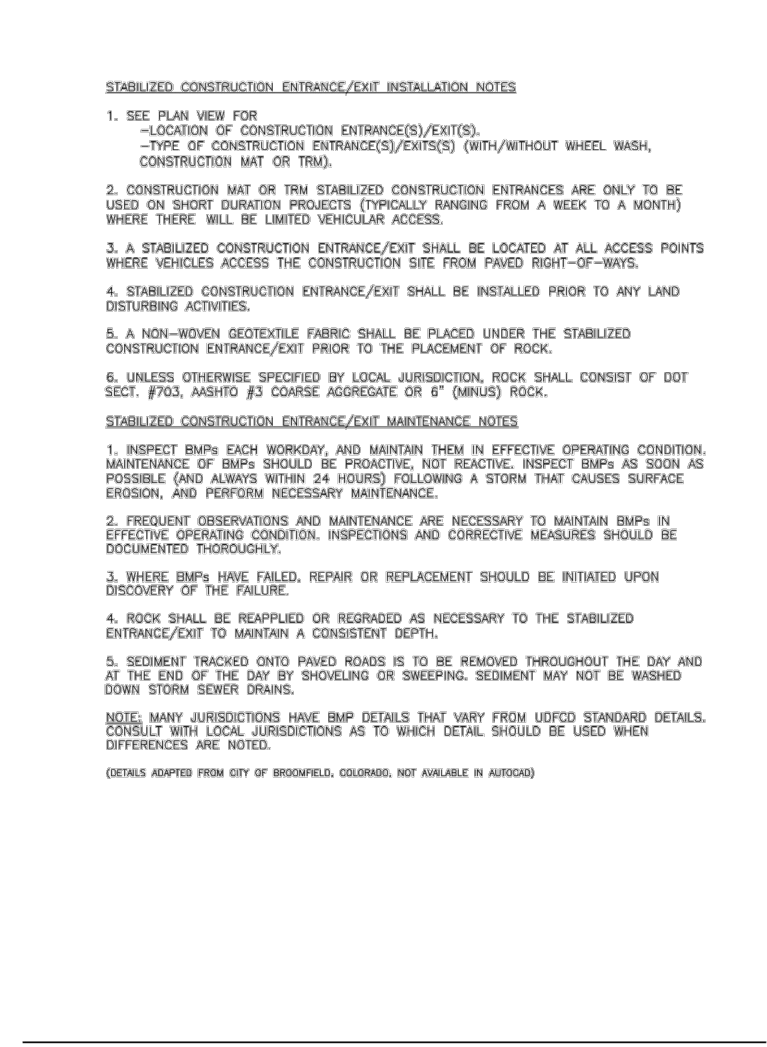
VTC-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Vehicle Tracking Control (VTC) SM-4

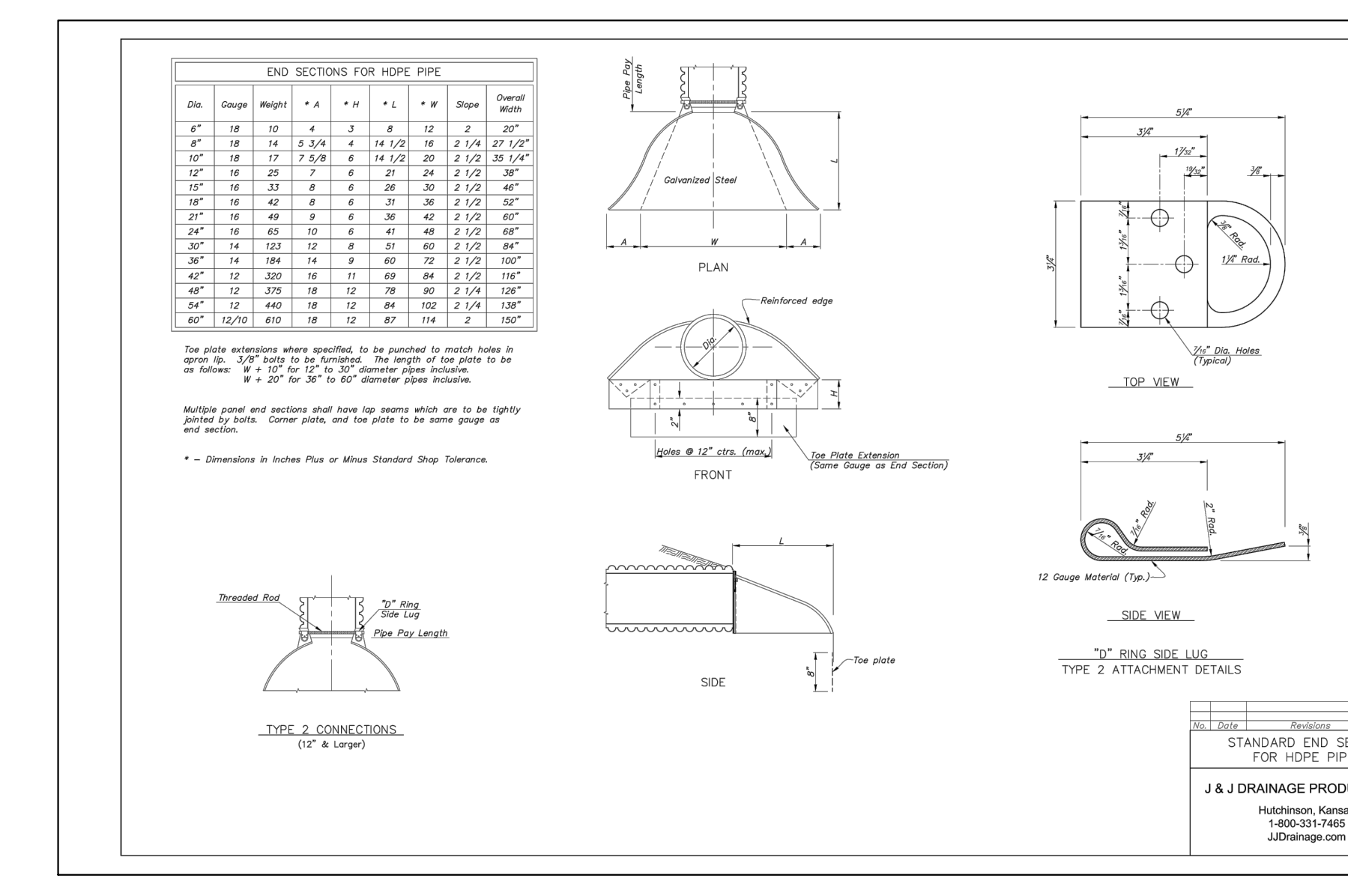


VTC-5 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

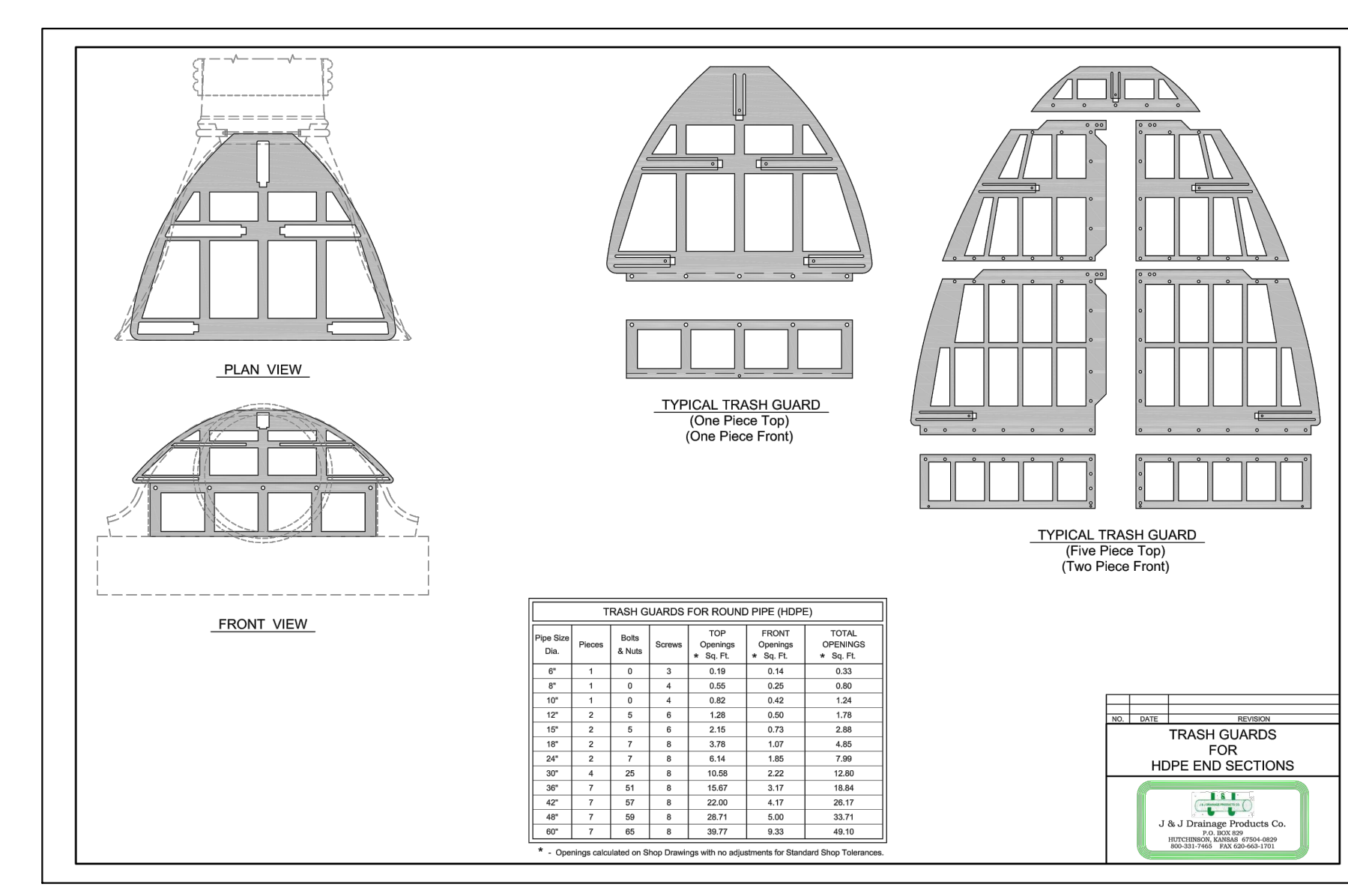
SM-4 Vehicle Tracking Control (VTC)



VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

NO.	DATE	DESCRIPTION	BY
REVISIONS			

CTR Engineering, Inc.

16392 TIMBER MEADOW DRIVE
COLORADO SPRINGS, CO 80908
(719) 964-6654

PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A

BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)

PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL

SHEET TITLE: GRADING AND EROSION DETAILS

DESIGNED BY: JCM SCALE: DATE ISSUED: OCT. 2020
DRAWN BY: JCM IH: SHEET NO. 12 OF 15 SHEETS
CHECKED BY: JH VV:

DWG:

Sediment Control Log (SCL) SC-2

Description
Design details and notes for sediment control logs are provided in the following details. Sediment logs must be properly installed per the detail to prevent undercutting, heaving and displacement.



Table with 2 columns: Functions, Values. Rows include Erosion Control (Moderate), Sediment Control (Yes), and Site/Material Management (No).

November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-1

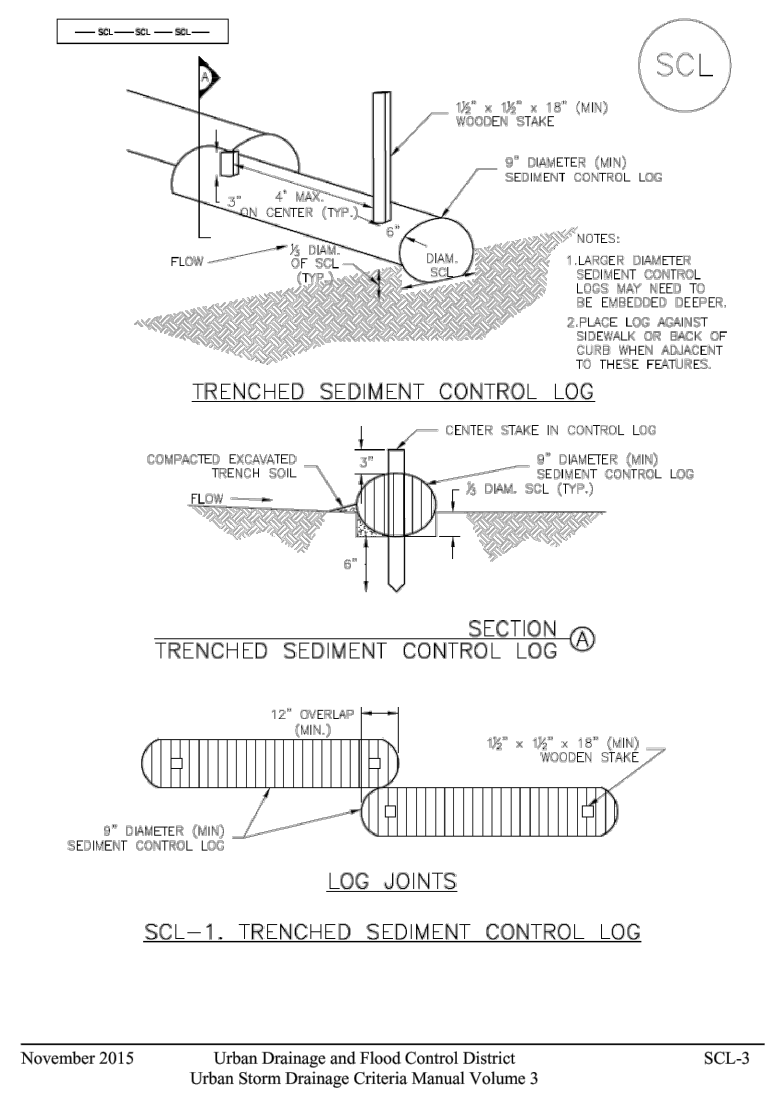
SC-2 Sediment Control Log (SCL)

Although sediment control logs initially allow runoff to flow through the BMP, they can quickly become a barrier and should be installed as if they are impermeable.

Table with 2 columns: Functions, Values. Rows include Erosion Control (Moderate), Sediment Control (Yes), and Site/Material Management (No).

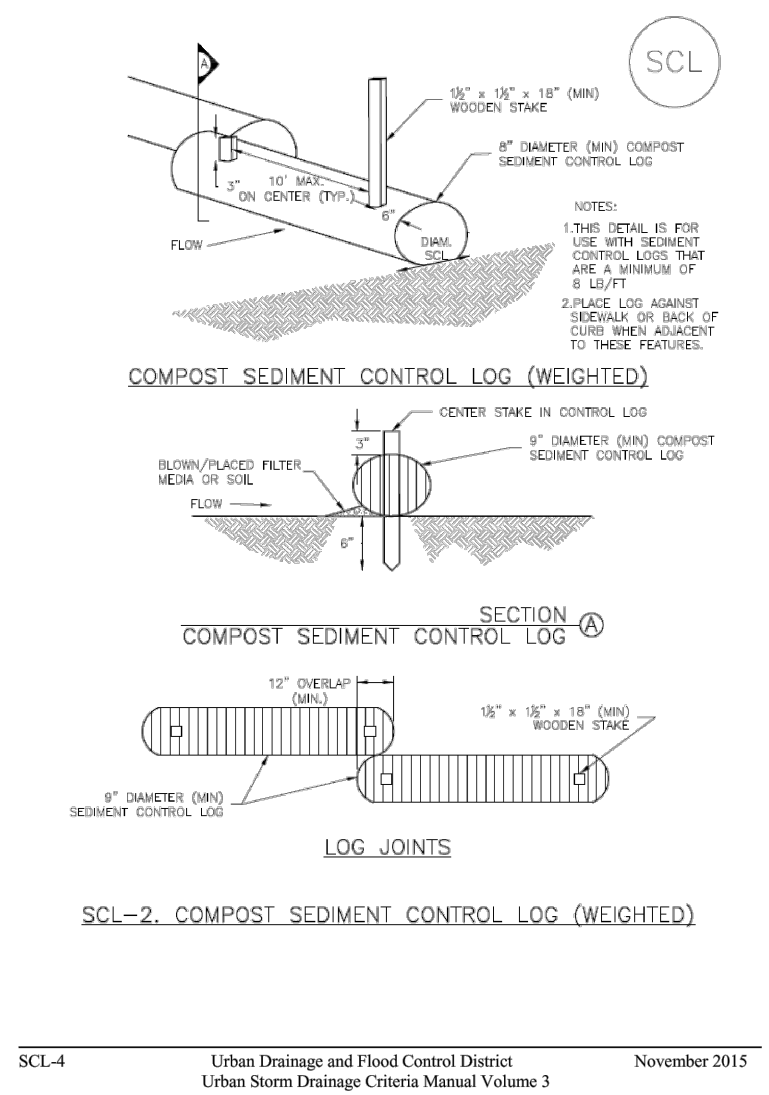
SC-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2015

Sediment Control Log (SCL) SC-2



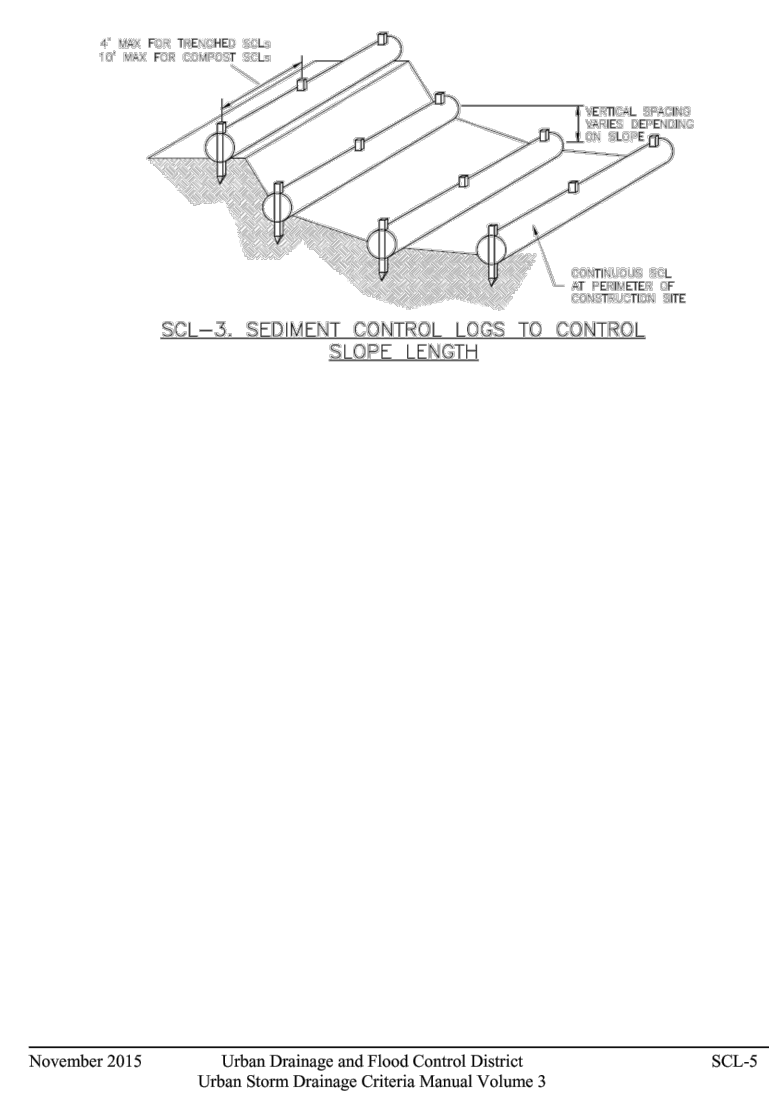
SC-1 TRENCHED SEDIMENT CONTROL LOG November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-3

SC-2 Sediment Control Log (SCL)



SC-2 COMPOST SEDIMENT CONTROL LOG (WEIGHTED) November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-4

Sediment Control Log (SCL) SC-2



SC-3 SEDIMENT CONTROL LOGS TO CONTROL November 2015 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-5

SC-2 Sediment Control Log (SCL)

SEDIMENT CONTROL LOG INSTALLATION NOTES
1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

SC-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2015

Compost Blanket and Filter Berm (CB) EC-5

Description
A compost filter berm is a dike of compost or a compost product that is placed perpendicular to runoff to control erosion in disturbed areas and retain sediment.



Table with 2 columns: Functions, Values. Rows include Erosion Control (Yes), Sediment Control (Moderate), and Site/Material Management (No).

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CB-1

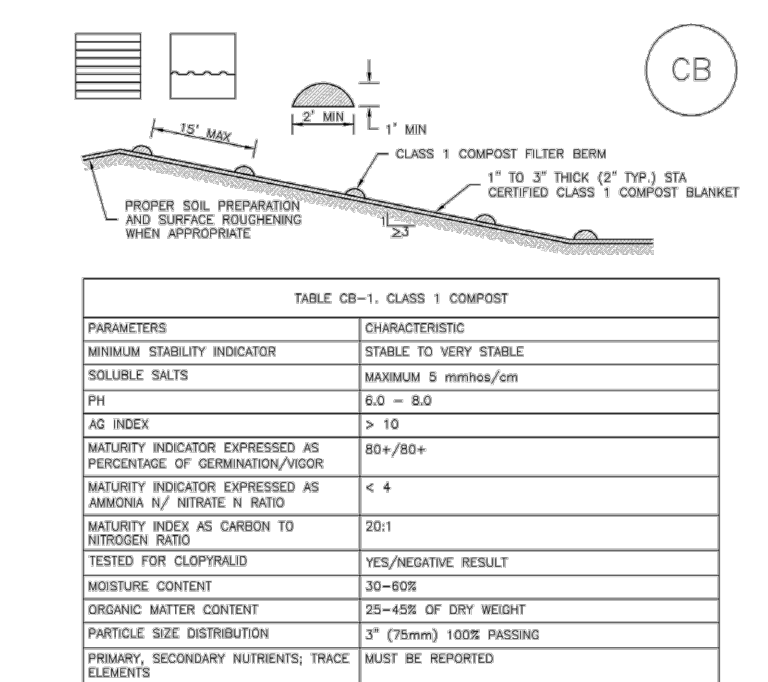
EC-5 Compost Blanket and Filter Berm (CB)

Maintenance and Removal
When rills or gullies develop in an area that has been composted, fill and cover the area with additional compost and install berms as necessary to help reduce erosion.

Table with 2 columns: Functions, Values. Rows include Erosion Control (Yes), Sediment Control (Moderate), and Site/Material Management (No).

EC-5 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Compost Blanket and Filter Berm (CB) EC-5



CB-1 COMPOST BLANKET AND COMPOST FILTER BERM November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CB-3

EC-5 Compost Blanket and Filter Berm (CB)

Table with 2 columns: Parameters, Values. Rows include MINIMUM STABILITY INDICATOR, SOLUBLE SALTS, pH, etc.

EC-5 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Roller Erosion Control Products (RECP) EC-6

Description
Roller Erosion Control Products (RECPs) include a variety of temporary or permanently installed manufactured products designed to control erosion and enhance vegetation establishment and survivability.



Table with 2 columns: Functions, Values. Rows include Erosion Control (Yes), Sediment Control (No), and Site/Material Management (No).

RECP-1 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-6 Rolled Erosion Control Products (RECP)

Turf Reinforcement Mat (TRM)
A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh, and/or other elements, processed into a permanent, three-dimensional matrix of sufficient thickness.

Table with 4 columns: Product Description, Slope Applications, Channel Applications, Minimum Tensile Strength, Expected Longevity.

* C Factor and shear stress for mulch control nettings must be obtained with netting used in conjunction with pre-applied mulch material. (See Section 3.3 of Chapter 7 Construction BMPs for more information on the C Factor.)

RECP-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Roller Erosion Control Products (RECP) EC-6

Table with 4 columns: Product Description, Slope Applications, Channel Applications, Minimum Tensile Strength, Expected Longevity.

* C Factor and shear stress for mulch control nettings must be obtained with netting used in conjunction with pre-applied mulch material. (See Section 3.3 of Chapter 7 Construction BMPs for more information on the C Factor.)

RECP-3 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

CTR Engineering, Inc.

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PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A

BENCHMARK: Elevations are based upon FIMS monument DR02, a 2\"/>

PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL

SHEET TITLE: GRADING AND EROSION DETAILS

DESIGNED BY: JCM SCALE DATE ISSUED: OCT, 2020
DRAWN BY: JCM JH: SHEET NO. 13 OF 15 SHEETS
CHECKED BY: JH V:

DWG:

EC-6 Rolled Erosion Control Products (RECP)

Table RECP-2. ECFC Standard Specification for Permanent Rolled Erosion Control Products (Adapted from Erosion Control Technology Council 2005)

Table with 4 columns: Product Type, Slope Applications, Channel Applications, Minimum Tensile Strength. Rows include TRM with a minimum thickness of 0.25 inches, TRM with a minimum thickness of 0.5 inches, and TRM with a minimum thickness of 0.75 inches.

For TRMs containing degradable components, all property values must be obtained on the non-degradable portion of the testing alone. Minimum Average Roll Values, machine direction only for tensile strength determination using ASTM D1813 (Supersede Mod. ASTM D 2035 for RECPs). Field conditions with high loading and/or high maneuverability requirements may warrant the use of a TRM with a tensile strength of 44 kN (10,000 lb) or greater.

Design and Installation RECPs should be installed according to manufacturer's specifications and guidelines. Regardless of the type of product used, it is important to ensure no gaps or voids exist under the material and that all corners of the material are secured using stakes and trenching.

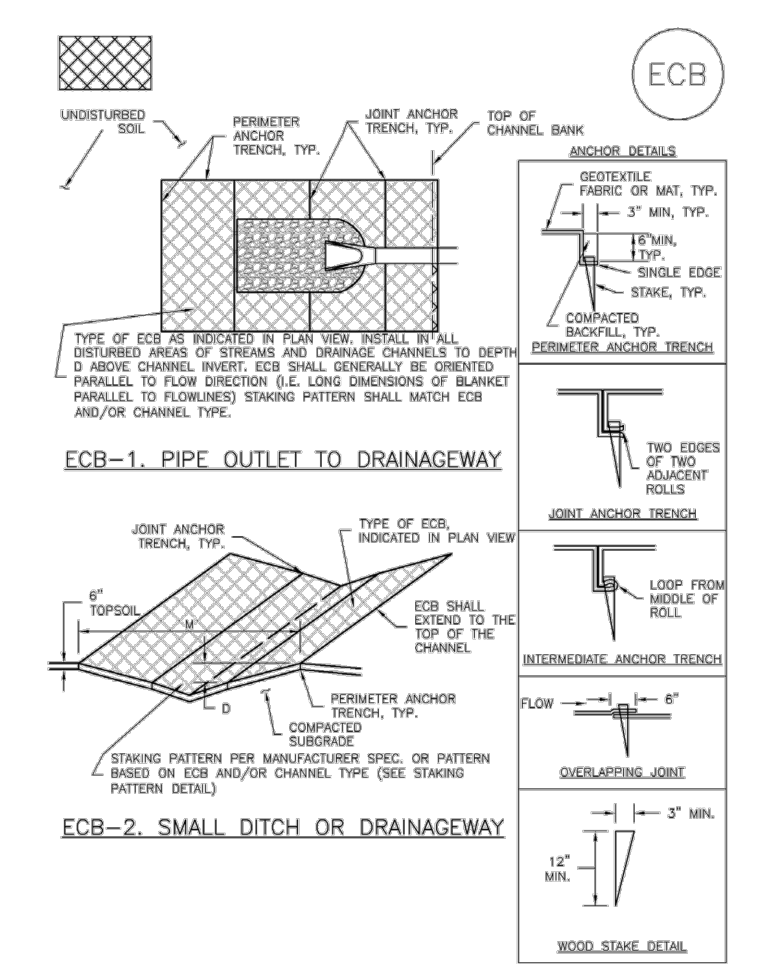
Roller Erosion Control Products (RECP) EC-6

Staking patterns are also provided in the design details according to these factors: ECB type Slope or channel type

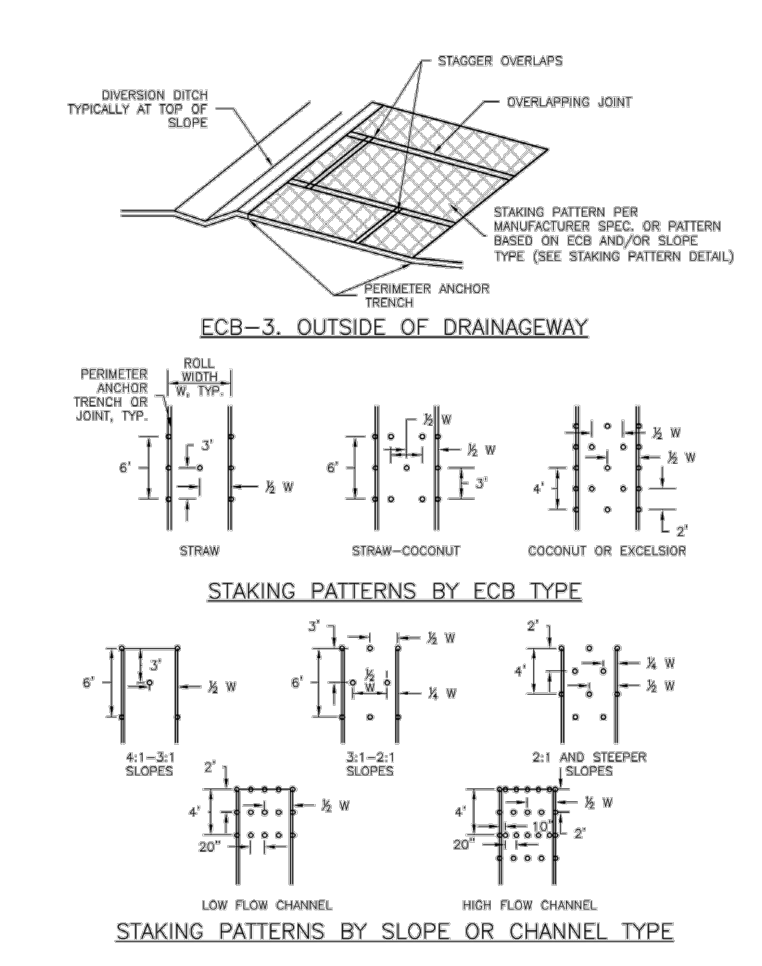
Maintenance and Removal

For other types of RECPs including TRMs, these design details are intended to serve as general guidelines for design and installation; however, engineers should adhere to manufacturer's installation recommendations. Check for general signs of erosion, including voids beneath the mat. If voids are apparent, fill the void with suitable soil and replace the erosion control blanket, following the appropriate staking pattern.

EC-6 Rolled Erosion Control Products (RECP)



Roller Erosion Control Products (RECP) EC-6



EC-6 Rolled Erosion Control Products (RECP)

Table EC-1. ECB Material Specifications. Columns: Type, Cocoon Content, Straw Content, Excelsior Content, Recommended Netting. Rows: Straw, Cocoon, Excelsior.

Roller Erosion Control Products (RECP) EC-6

ECB-1. ECB Material Specifications. ECB-2. Small Ditch or Drainageway. ECB-3. Outside of Drainageway. Includes maintenance notes for ECB material.

RECP-4 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

November 2010 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

RECP-6 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

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RECP-8 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

November 2010 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

Concrete Washout Area (CWA) MM-1

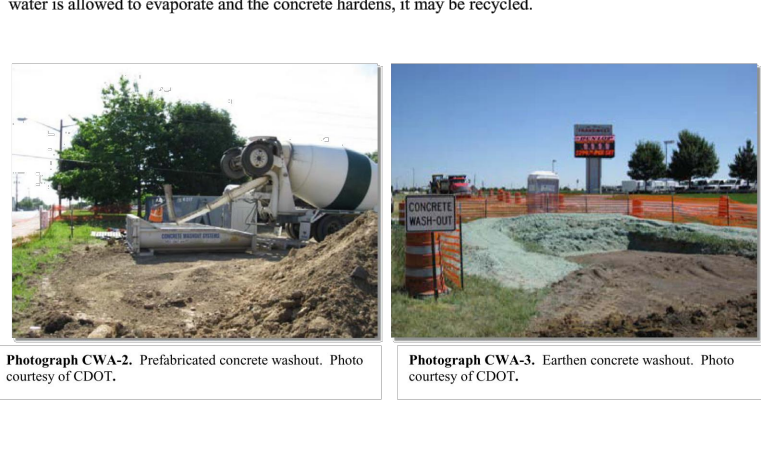
Description Concrete washout involves designing and properly managing a specific area of the construction site as a concrete washout area. Concrete washout areas can be created using one of several approaches designed to receive wash water from washing of concrete mixer chutes, liquid concrete waste from dump trucks, mobile batch mixers, or pump trucks.



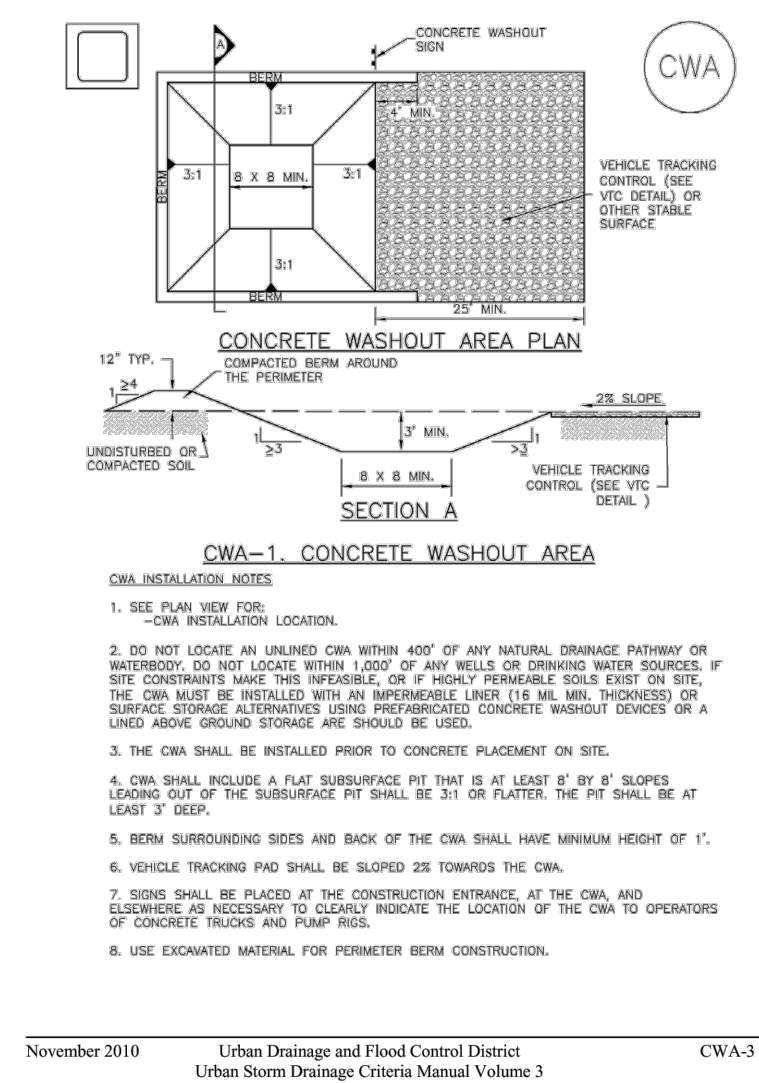
Appropriate Uses Concrete washout areas must be designated on all sites that will generate concrete wash water or liquid concrete waste from onsite concrete mixing or concrete delivery. Because pH is a pollutant of concern for washout activities, when unlined pits are used for concrete washout, the soil must have adequate buffering capacity to result in protection of state groundwater standards.

MM-1 Concrete Washout Area (CWA)

subsoil infiltration or if highly permeable soils exist in the area, then the pit must be installed with an impervious liner (16 mil minimum thickness) or surface storage alternatives using prefabricated concrete washout devices or a lined aboveground storage area should be used.



Concrete Washout Area (CWA) MM-1



MM-1 Concrete Washout Area (CWA)

CWA Maintenance Notes 1. INSPECT BMPs EACH MONTH, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPT, NOT DEFERRED, IMMEDIATELY AFTER A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

Sediment Basin (SB) SC-7

Description A sediment basin is a temporary pond built on a construction site to capture eroded or disturbed soil transported in storm runoff prior to discharge from the site. Sediment basins are designed to capture the runoff and slowly release it to allow time for settling of sediment prior to discharge.



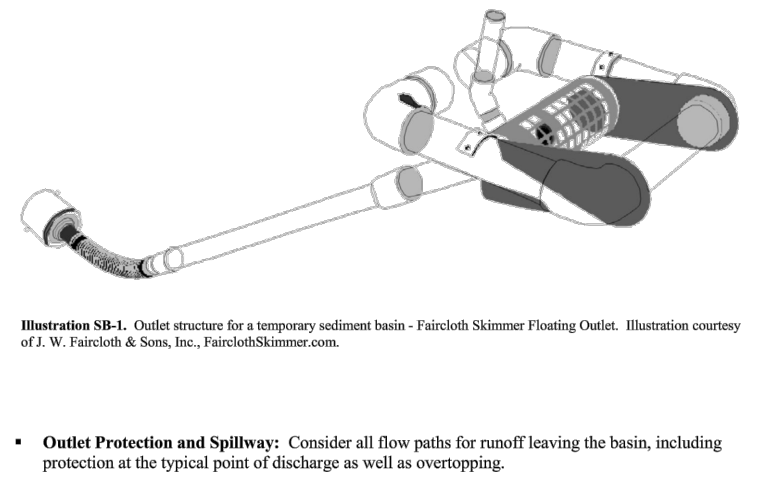
Design and Installation The design procedure for a sediment basin includes three steps: Basin Storage Volume. Provide a storage volume of at least 3,600 cubic feet per acre of drainage area. To the extent practical, undisturbed and/or off-site areas should be diverted around sediment basins to prevent "clean" runoff from mixing with runoff from disturbed areas.

SC-7 Sediment Basin (SB)

Table SB-1. Additional Volume Requirements for Undisturbed and Developed Tributary Areas Draining Through Sediment Basins. Columns: Imperviousness (%), Additional Storage Volume (ft³) Per Acre of Tributary Area.

Outlet Works The outlet pipe shall extend through the embankment at a minimum slope of 0.5 percent. Outlet works can be designed using one of the following approaches: Riser Pipe (Standard Details): Detail SB-1 provides a simplified design for basins treating no more than 15 acres.

Sediment Basin (SB) SC-7

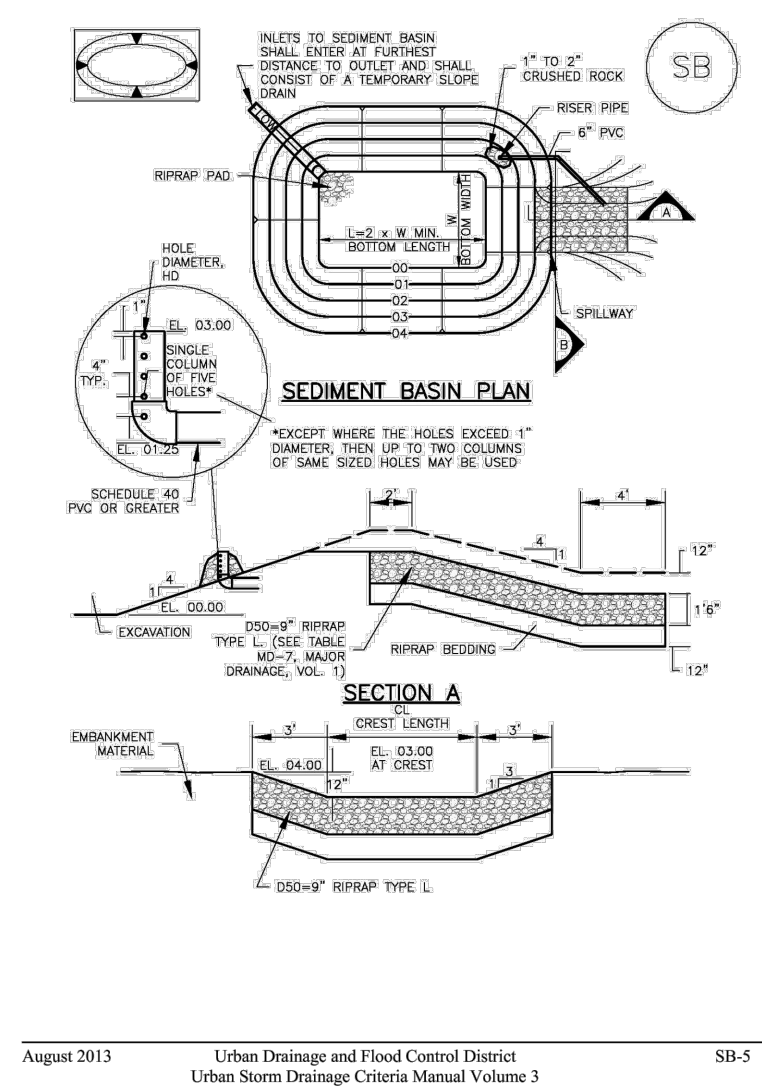


Outlet Protection and Spillways: Consider all flow paths for runoff leaving the basin, including protection at the typical point of discharge as well as overtopping. Erosion Control: Sediment basins should be installed on a permanent foundation.

SC-7 Sediment Basin (SB)

Maintenance and Removal Maintenance activities include the following: Dredge sediment from the basin, as needed to maintain BMP effectiveness, typically when the design storage volume is no more than one-third filled with sediment. Inspect the sediment basin embankments for stability and seepage.

Sediment Basin (SB) SC-7



SC-7 Sediment Basin (SB)

Table SB-2. Sizing Information for Standard Sediment Basins. Columns: Undisturbed Basin Drainage Area (Acres), Basin Length (ft), Basin Width (ft), Basin Depth (ft), Basin Volume (cu ft).

SB-2 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Criteria Manual Volume 3

August 2013 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Criteria Manual Volume 3

SB-4 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Criteria Manual Volume 3

August 2013 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Criteria Manual Volume 3

SB-6 Urban Drainage and Flood Control District August 2013 Urban Storm Drainage Criteria Manual Volume 3

CTR Engineering, Inc. 16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654 PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A BENCHMARK: ELEVATIONS are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29) PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL SHEET TITLE: GRADING AND EROSION DETAILS DESIGNED BY: JCM SCALE: DATE ISSUED: OCT, 2020 DRAWN BY: JCM H: CHECKED BY: JH V: SHEET NO. 14 OF 15 SHEETS DWG:

Sediment Basin (SB) SC-7

SEDIMENT BASIN 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 IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (3.0 FEET BELOW THE SPILLWAY CREST).
5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS RESTORED AND GRADE COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH SLOTTED CURB AND WALKWAY OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

OTHER NOTES FROM OTHER SHEETS (INCLUDE)


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

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SB-7

Inlet Protection (IP) SC-6

Description

Inlet protection consists of permeable barriers installed around an inlet to filter runoff and remove sediment prior to entering a storm drain inlet. Inlet protection can be constructed from rock socks, sediment control logs, silt fence, block and rock socks, or other materials approved by the local jurisdiction. Area inlets can also be protected by over-excavating around the inlet to form a sediment trap.



Appropriate Uses

Install protection at storm sewer inlets that are operable during construction. Consider the potential for track-out sediment or temporary stockpile areas to contribute sediment to inlets when determining which inlets must be protected. This may include inlets in the general proximity of the construction area, not limited to downgradient inlets. Inlet protection is not a stand-alone BMP and should be used in conjunction with other upstream BMPs.

Design and Installation

To function effectively, inlet protection measures must be installed to ensure that flows do not bypass the inlet protection and enter the storm drain without treatment. However, design must also enable the inlet to function without completely blocking flows into the inlet in a manner that causes localized flooding. When selecting the type of inlet protection, consider factors such as type of inlet (e.g., curb or area, sump or on-grade conditions), traffic, anticipated flows, ability to secure the BMP properly, safety and other site-specific conditions. For example, block and rock socks will be better suited to a curb and gutter along a roadway, as opposed to silt fence or sediment control logs, which cannot be properly secured in a curb and gutter setting, but are effective area inlet protection measures.

Several inlet protection designs are provided in the Design Details. Additionally, a variety of proprietary products are available for inlet protection that may be approved for use by local governments. If proprietary products are used, design details and installation procedures from the manufacturer must be followed. Regardless of the type of inlet protection selected, inlet protection is most effective when combined with other BMPs such as curb socks and check dams. Inlet protection is often the last barrier before runoff enters the storm sewer or receiving water.

Inlet Protection (various forms)	
Functions	
Erosion Control	No
Sediment Control	Yes
Site Material Management	No

Design details with notes are provided for these forms of inlet protection:

- IP-1. Block and Rock Sock Inlet Protection for Sump or On-grade Inlets
- IP-2. Curb (Rock) Sock Inlet Protection, On-grade Inlets

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-1

SC-6 Inlet Protection (IP)

IP-3. Rock Sock Inlet Protection for Sump/Area Inlet
 IP-4. Silt Fence Inlet Protection for Sump/Area Inlet
 IP-5. Over-excavation Inlet Protection
 IP-6. Straw Bale Inlet Protection for Sump/Area Inlet
 CIP-1. Culvert Inlet Protection

Proprietary inlet protection devices should be installed in accordance with manufacturer specifications. More information is provided below on selecting inlet protection for sump and on-grade locations.

Inlets Located in a Sump

When applying inlet protection in sump conditions, it is important that the inlet continue to function during larger runoff events. For curb inlets, the maximum height of the protective barrier should be lower than the top of the curb opening to allow overflow into the inlet during larger storms without excessive localized flooding. If the inlet protection height is greater than the curb elevation, particularly if the filter becomes clogged with sediment, runoff will not enter the inlet and may bypass it, possibly causing localized flooding, public safety issues, and downstream erosion and damage from bypassed flows.

Area inlets located in a sump setting can be protected through the use of silt fence, concrete block and rock socks (on paved surfaces), sediment control logs/straw wattles embedded in the adjacent soil and stacked around the area inlet (on pervious surfaces), over-excavation around the inlet, and proprietary products providing equivalent functions.

Inlets Located on a Slope

For curb and gutter inlets on paved sloping streets, block and rock sock inlet protection is recommended in conjunction with curb socks in the gutter leading to the inlet. For inlets located along unimproved roads, also see the Check Dam Fact Sheet.

Maintenance and Removal

Inspect inlet protection frequently. Inspection and maintenance guidance includes:

- Inspect for tears that can result in sediment directly entering the inlet, as well as result in the contents of the BMP (e.g., gravel) washing into the inlet.
- Check for improper installation resulting in increased flows bypassing the BMP and directly entering the inlet or bypassing to an unprotected downstream inlet. For example, silt fence that has not been properly stretched around the inlet can result in flows under the silt fence and directly into the inlet.
- Look for displaced BMPs that are no longer protecting the inlet. Displacement may occur following larger storm events that wash away or reposition the inlet protection. Traffic or equipment may also crush or displace the BMP.
- Monitor sediment accumulation upgradient of the inlet protection.

IP-2 August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-3

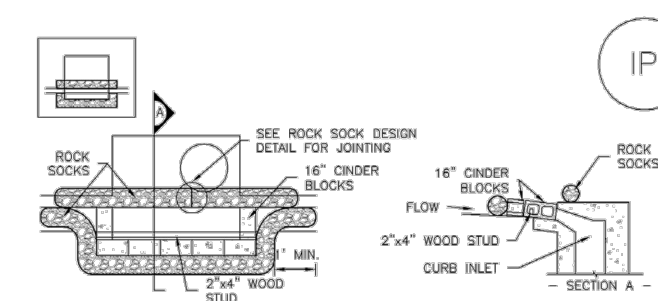
Inlet Protection (IP) SC-6

- Remove sediment accumulation from the area upstream of the inlet protection, as needed to maintain BMP effectiveness. Typically when it reaches no more than half the storage capacity of the inlet protection. For silt fence, remove sediment when it accumulates to a depth of no more than 6 inches. Remove sediment accumulation from the area upstream of the inlet protection as needed to maintain the functionality of the BMP.
- Proprietary inlet protection devices should be inspected and maintained in accordance with manufacturer specifications. If proprietary inlet device are used, sediment should be removed in a timely manner to prevent devices from breaking and spilling sediment into the storm drain. Inlet protection must be removed and properly disposed of when the drainage area for the inlet has reached final stabilization.

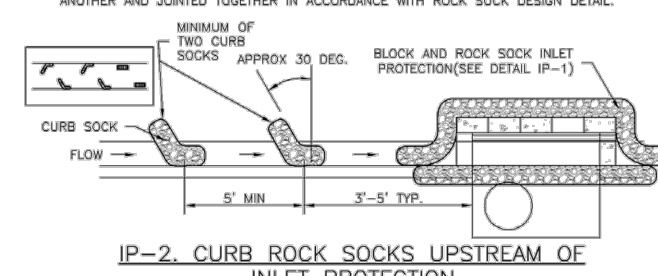
August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-3

SC-6 Inlet Protection (IP)

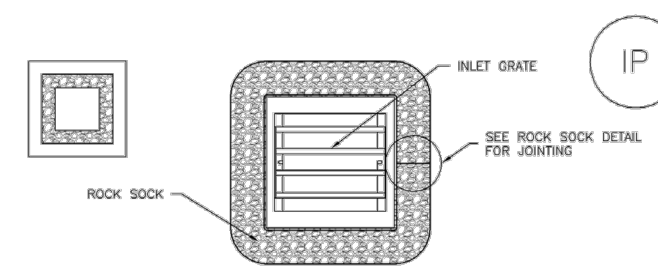
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION



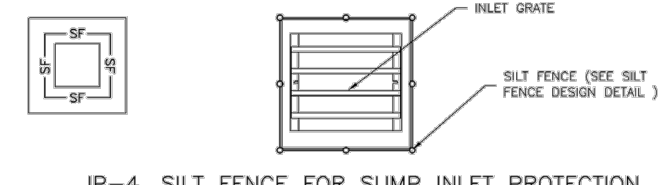
IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION



IP-4. SILT FENCE FOR SUMP INLET PROTECTION



August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-4

Inlet Protection (IP) SC-6

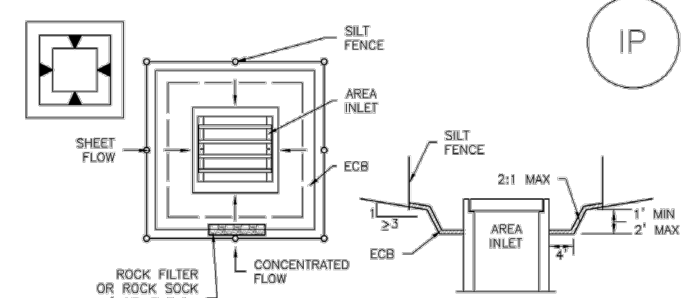
SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. 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 WATTLE/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PREVIOUS AREAS. METALS PER SEDIMENT CONTROL LOG DETAIL.

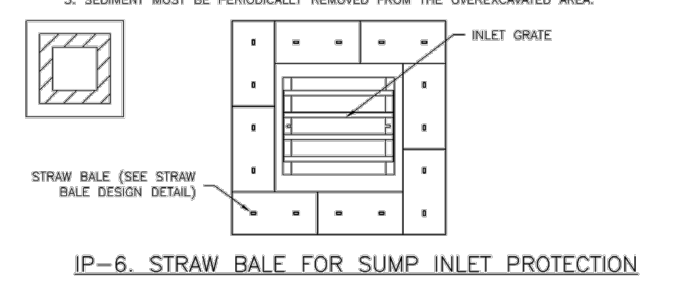
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SC-6 Inlet Protection (IP)

IP-5. OVEREXCAVATION INLET PROTECTION



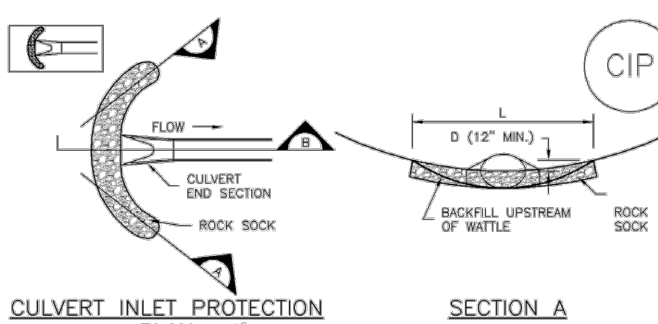
IP-6. STRAW BALE FOR SUMP INLET PROTECTION



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Inlet Protection (IP) SC-6

CIP-1. CULVERT INLET PROTECTION



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SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR "LOCATION OF INLET PROTECTION."
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR FINISH IS COMPLETE (TYPICALLY WITHIN 48 HOURS) IF A BARRICADE/SHOULDER EVENT IS FORECAST. METALS PER PROTECTION PRIOR TO ONSET OF EVENT.
3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDO 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 NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY. A DEPTH OF 6" WITH SILT FENCE IS USED, OR 8" IF THE RECORD 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 BY STREET.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDING AND MULCH, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

OTHER NOTES FROM OTHER SHEETS (INCLUDE)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDO 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 US. PROPRIETARY INLET PROTECTION DEVICES ON THE MARKET, USDO 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 BMP 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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NO.	DATE	DESCRIPTION	BY
REVISIONS			
CTR Engineering, Inc.			
16392 TIMBER MEADOW DRIVE COLORADO SPRINGS, CO 80908 (719) 964-6654			
PROJECT: CLEAR VIEW INDUSTRIAL PARK FILING 2A			
BENCHMARK: Elevations are based upon FIMS monument DR02, a 2" aluminum cap, stamped "CSU FIMS CONTROL DR02", at the southeast corner of Monica Drive and Hancock Expressway (Elevation=5927.27 NGVD29)			
PROJECT TITLE: GRADING, WATER QUALITY POND AND EROSION CONTROL			
SHEET TITLE: GRADING AND EROSION DETAILS			
DESIGNED BY: JCM	SCALE:	DATE ISSUED: OCT, 2020	
DRAWN BY: JCM	HH:		
CHECKED BY: JH	V:	SHEET NO. 15 OF 15 SHEETS	
DWG:			