

XCEL T-LINE: PATHWAYS SEGMENT 5 ARAPAHOE COUNTY BUILD

0.3 mile southwest of intersection of E Quincy Ave and S Harvest Rd
to 0.15 mile west of intersection of Co Rd 129 and County Line Rd

ARAPAHOE COUNTY, CO, 80016

MARCH 2026

GESC OWNER:
PUBLIC SERVICE COMPANY OF COLORADO (PSCo)
3500 BLAKE STREET, FLOOR 3
DENVER, COLORADO 80205
CHAD CAMPBELL, ENVIRONMENTAL SERVICES MANAGER
CHAD.CAMPBELL@XCELENERGY.COM
303-294-2177

GESC PREPARER:
HDR ENGINEERING, INC.
1670 BROADWAY STREET, SUITE 3400
DENVER, COLORADO 80202
BRIAN BROWN, PE
BRIAN.BROWN@HDRINC.COM
970-416-4404

INDEX OF DRAWINGS

<u>SHEET NUMBER</u>	<u>SHEET DESCRIPTION</u>
01	COVER SHEET
02	GENERAL NOTES / OVERVIEW MAP
03	GESC SITE MAPS - MB-1T, MT-1B
04	GESC SITE MAPS - MB-2T, MB-2B
05	GESC SITE MAPS - MB-3T, MB-3B
06	GESC SITE MAPS - MB-4T, MB-4B
07	GESC SITE MAPS - MB-5T, MB-5B
08	GESC SITE MAPS - MB-6T, MB-6B
09	GESC SITE MAPS - MB-7T, MB-7B
10	GESC SITE MAPS - MB-8T
11	GESC SITE MAPS - PULL SITES
12-15	GESC STANDARD NOTES AND DETAILS

THIS GRADING, EROSION AND SEDIMENT CONTROL (GESC) DOCUMENT HAS BEEN PLACED IN THE PROJECT FILE FOR THIS PROJECT AND APPEARS TO FULFILL THE LATEST VERSION OF THE GRADING, EROSION AND SEDIMENT CONTROL MANUAL. ADDITIONAL GRADING, EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER OR HIS/HER AGENTS, DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS GESC DOCUMENT SHALL RUN WITH THE LAND AND BE THE OBLIGATION OF THE LAND OWNER, OR HIS/HER DESIGNATED REPRESENTATIVE(S) UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

I HEREBY CERTIFY THAT THE GRADING, EROSION, AND SEDIMENT CONTROL MEASURES FOR THE XCEL TLINE: PATHWAYS SEGMENT 5 ARAPAHOE COUNTY BUILD SHALL BE CONSTRUCTED ACCORDING TO THE DESIGN PRESENTED IN THIS DOCUMENT. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL, SEDIMENT CONTROL AND WATER QUALITY ENHANCING MEASURES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN POLLUTANT DISCHARGES OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THE PLAN SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS; UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

CHAD CAMPBELL

OWNER OR AUTHORIZED AGENT

Ch

AUTHORIZED SIGNATURE

I HEREBY ATTEST THAT THIS GRADING, EROSION, AND SEDIMENT CONTROL (GESC) DOCUMENT FOR THE XCEL TLINE: PATHWAYS SEGMENT 5 ARAPAHOE COUNTY BUILD HAS BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE AND ABILITY HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST VERSION OF THE GESC MANUAL. THE SIGNATURE AND STAMP AFFIXED HEREON CERTIFIES THAT THIS GESC DOCUMENT WAS PREPARED IN ACCORDANCE WITH THE REQUIRED REGULATIONS AND CRITERIA; HOWEVER, THE STAMP AND SIGNATURE DOES NOT CERTIFY OR GUARANTEE FUTURE PERFORMANCE OF THE EXECUTION OF THE PLAN BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR EXECUTING THE CONSTRUCTION WORK ACCORDING TO THE INFORMATION SET FORTH IN THE PLAN AND IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS.



REGISTERED PROFESSIONAL ENGINEER
STATE OF COLORADO NO.

BRIAN BROWN, P.E.
41644

THESE GESC PLANS HAVE BEEN REVIEWED BY ARAPAHOE
COUNTY FOR GRADING, EROSION, AND SEDIMENT CONTROL
IMPROVEMENTS ONLY

DEPARTMENT OF PUBLIC WORKS AND
DEVELOPMENT APPROVAL BLOCK

ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

[illegible]

GENERAL NOTES

THIS GRADING, EROSION AND SEDIMENT CONTROL (GESC) HAS BEEN DEVELOPED FOR THE ARAPAHOE COUNTY GESC MANUAL.

2. THIS GESC SHOULD BE VIEWED AS A LIVING DOCUMENT CONTINUOUSLY REVIEWED AND MODIFIED AS PART OF THE OVERALL PROCESS OF ASSESSING AND MANAGING STORMWATER QUALITY ISSUES AT THE SITE. THE GESC MUST BE AMENDED WHEN THE FOLLOWING OCCURS:

- A. CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE SITE REQUIRING IMPLEMENTATION OF NEW OR REVISED CONTROL MEASURES (CMS),
- B. THE GESC PROVES INEFFECTIVE IN CONTROLLING POLLUTANTS IN STORMWATER RUNOFF IN COMPLIANCE WITH THE PERMIT CONDITIONS,
- C. CONTROL MEASURES IDENTIFIED IN THE GESC ARE NO LONGER NECESSARY AND ARE REMOVED;
- D. CORRECTIVE ACTIONS ARE TAKEN ON SITE THAT RESULT IN A CHANGE TO THE GESC; AND
- E. IF THE SITE, OR AN AREA OF THE SITE, QUALIFIES FOR AND IMPLEMENTS A REDUCED INSPECTION FREQUENCY.

3. APPROPRIATE CONTROL MEASURES MUST BE IMPLEMENTED PRIOR TO THE START OF LAND DISTURBANCE ACTIVITY, MUST CONTROL POTENTIAL POLLUTANTS DURING EACH PHASE OF CONSTRUCTION, AND MUST BE CONTINUED THROUGH FINAL STABILIZATION. APPROPRIATE STRUCTURAL AND NON-STRUCTURAL CONTROL MEASURES MUST BE MAINTAINED IN OPERATIONAL CONTROL.

4. SEE STANDARD NOTES AND DETAILS (SHEETS 13-16) FOR LEGEND OF CONTROL MEASURES NAMES AND SYMBOLS.

5. ANY CONTROL MEASURES SHOWN THAT REQUIRE GRADING, (E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASHOUT AREAS, ETC.), SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING AND ISSUANCE OF THE GESC PERMIT, BUT MUST BE FULLY FUNCTIONAL PRIOR TO SITE GRADING. CONTROL MEASURES MAY BE PHASED IN COORDINATION AND APPROVAL OF LOCAL JURISDICTION FIELD INSPECTORS.

6. INITIAL, INTERIM, AND FINAL CONTROL MEASURES DEPICTED ON SINGLE VIEW. CONTROL MEASURES ARE LABELED TO INDICATE WHICH PHASE THEY MUST BE INSTALLED.

7. ALL INITIAL PHASE CONTROL MEASURES MUST BE INSTALLED BEFORE GROUND DISTURBING ACTIVITIES MAY COMMENCE IN THAT AREA. DOWN-GRADIENT CONTROL MEASURES (E.G. SEDIMENT CONTROL LOGS, SILT FENCE, ETC.) MUST REMAIN IN PLACE UNTIL UPGRADIENT AREAS HAVE REACHED FINAL STABILIZATION, EXCEPTING STOCKPILE CONTROL MEASURES AS THEY MAY BE REMOVED ONCE STOCKPILE REMOVED.

8. STABILIZING CONTROL MEASURES, INCLUDING SEEDING AND MULCHING OF DISTURBED AREAS, MUST BE COMPLETED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION IN AREA.

9. ANY DISTURBED SLOPES STEEPER THAN 4:1 WILL REQUIRE THE USE OF EROSION CONTROL BLANKETS OR FLEXIBLE GROWTH MEDIUM, AS APPROVED BY THE GESC INSPECTOR.

10. CONSTRUCTION WILL PROGRESS LINEARLY AND WILL NOT TAKE PLACE SIMULTANEOUSLY. CONTROL MEASURES WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION TIMING AT EACH LOCATION. CONSTRUCTION IS EXPECTED TO RETURN TO EACH SITE MULTIPLE TIMES BASED ON THE PHASE OF CONSTRUCTION.

11. CONTRACTOR WILL MINIMIZE SURFACE AND VEGETATION IMPACTS BY EQUIPMENT OPERATION AND ACCESS DRIVING. MATS MAY BE DEPLOYED AS A DRIVING SURFACE TO MINIMIZE DISTURBANCES.

12. DURING WORK DAYS, CONSTRUCTION CREWS MAY DAY PARK VEHICLES ON STREETS TO PREVENT UNNECESSARY DISTURBANCE AT STRUCTURE WORK AREAS. DESIGNATED PARKING AREAS ARE NOT INDICATED ON THE PLANS, AS OFF-ROAD PARKING WILL BE LIMITED TO CONSTRUCTION SUPPORT VEHICLES AND LOCATIONS CHANGE REGULARLY DEPENDING ON CONSTRUCTION PHASE.

13. CONTROL MEASURES TO BE FIELD FIT BY CONTRACTOR.

14. FLOODPLAIN MAPPED USING FEMA DATA USED BY ARAPAHOE COUNTY.

15. THERE ARE NO STORMWATER INLETS WITHIN THE PROJECT AREA.

16. TEMPORARY OUTDOOR PORTA-POTTY SHOULD BE LOCATED ON A STABILIZED SURFACE TO PREVENT TIPPING.

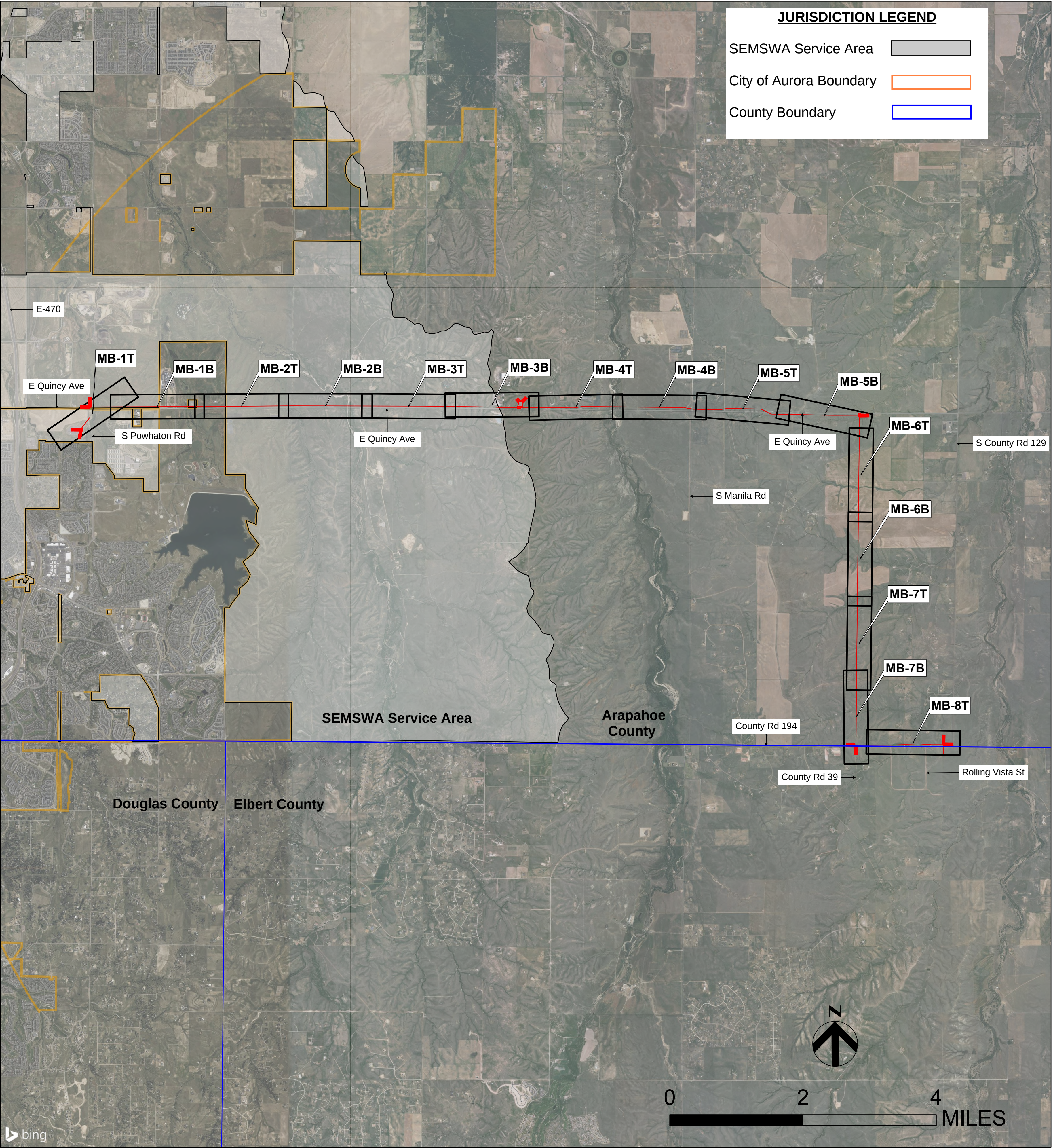
17. CONTROL MEASURES ARE REQUIRED ON ALL TEMPORARY STOCKPILES (SP).

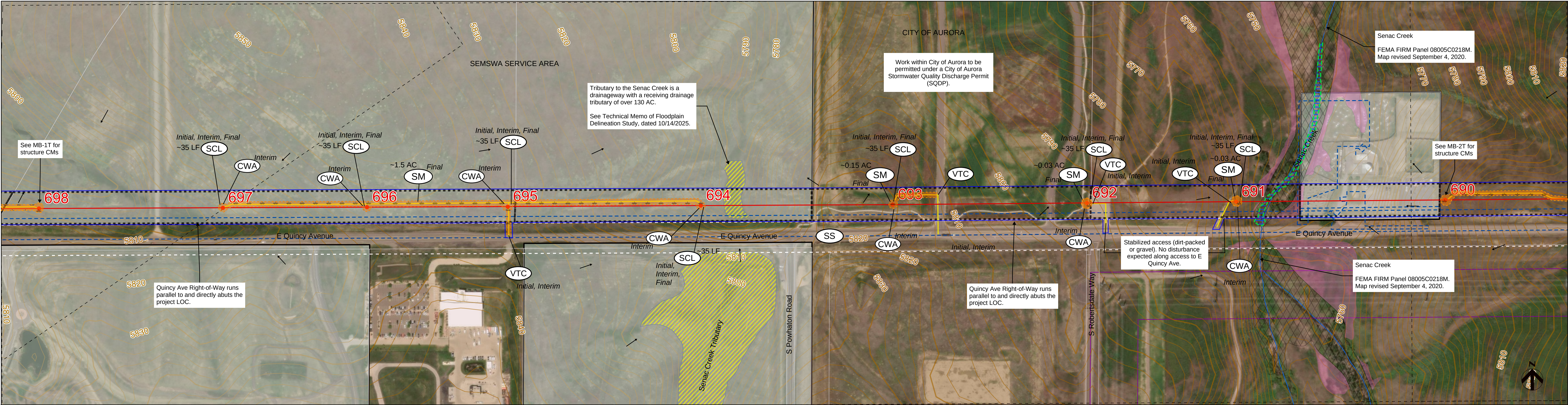
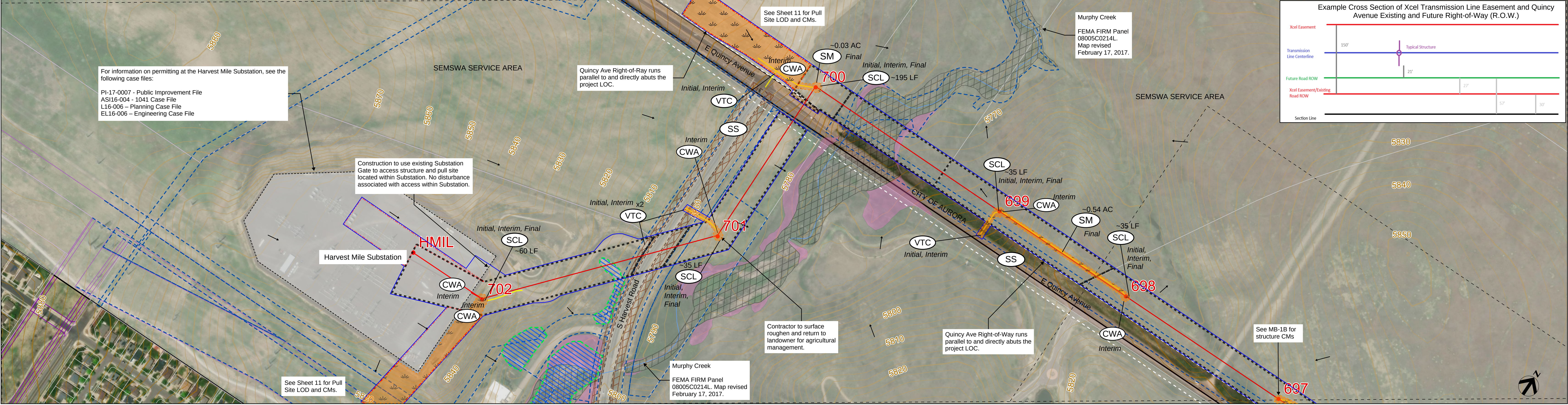
18. STREET SWEEPING (SS) OPERATIONS SHALL UTILIZE A VACUUM-TYPE STREET SWEEPER, A BRUSH STYLE STREET SWEEPER, OR MANUALLY USING SHOVELS AND BROOMS. PAVEMENT SHALL NOT BE WASHED WITH WATER AT ANY TIME UNLESS ALL WATER IS CONTAINED AND COLLECTED AND IS NOT ALLOWED TO DRAIN INTO EXISTING STORMWATER CONVEYANCES, ON OR OFF SITE.

ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

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DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT APPROVAL BLOCK

[illegible]





ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

**XCEL TLINE PATHWAYS SEGMENT 5
ARAPAHOE COUNTY BUILD**

SHEET 03: MB-1T, MB-1B

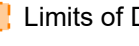
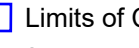
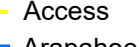
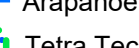
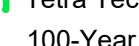
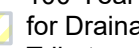
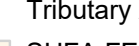
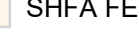
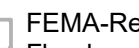
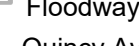
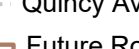
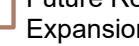
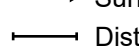


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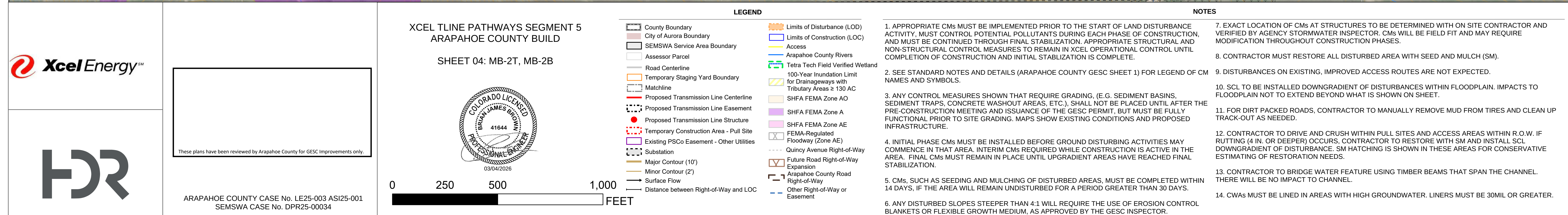
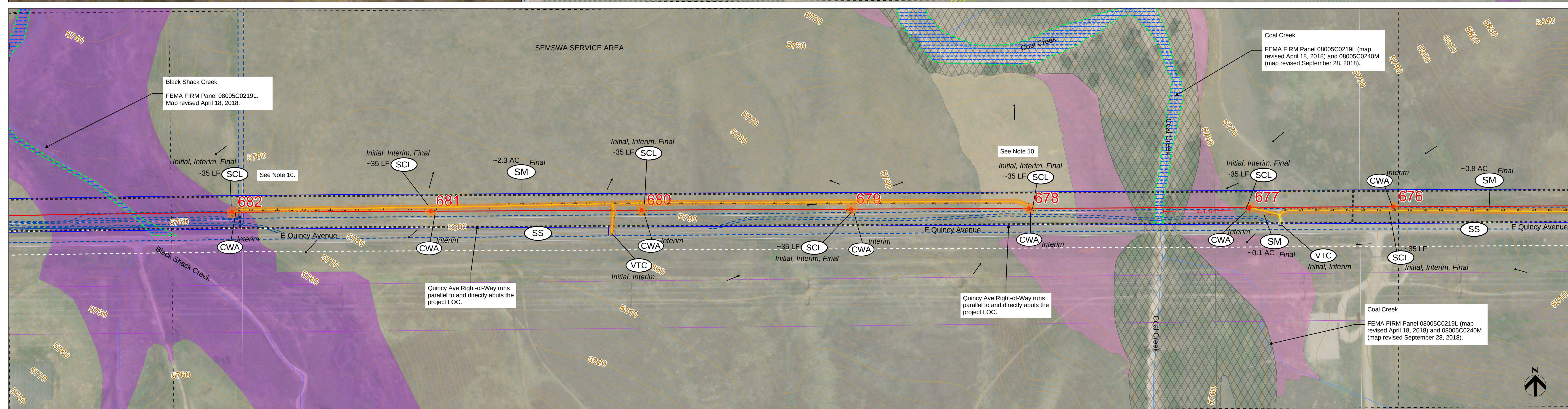
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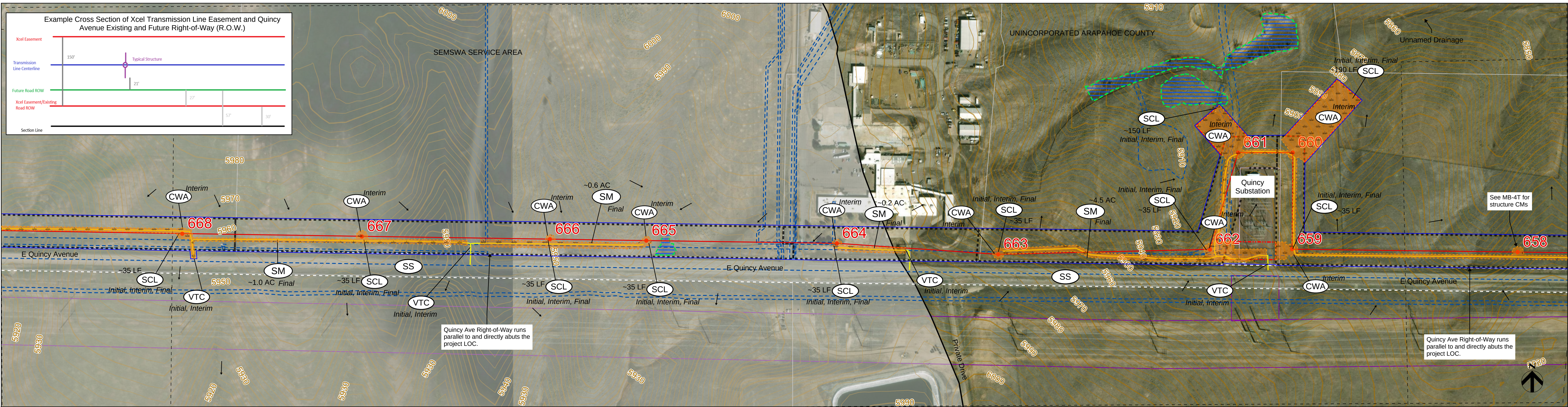
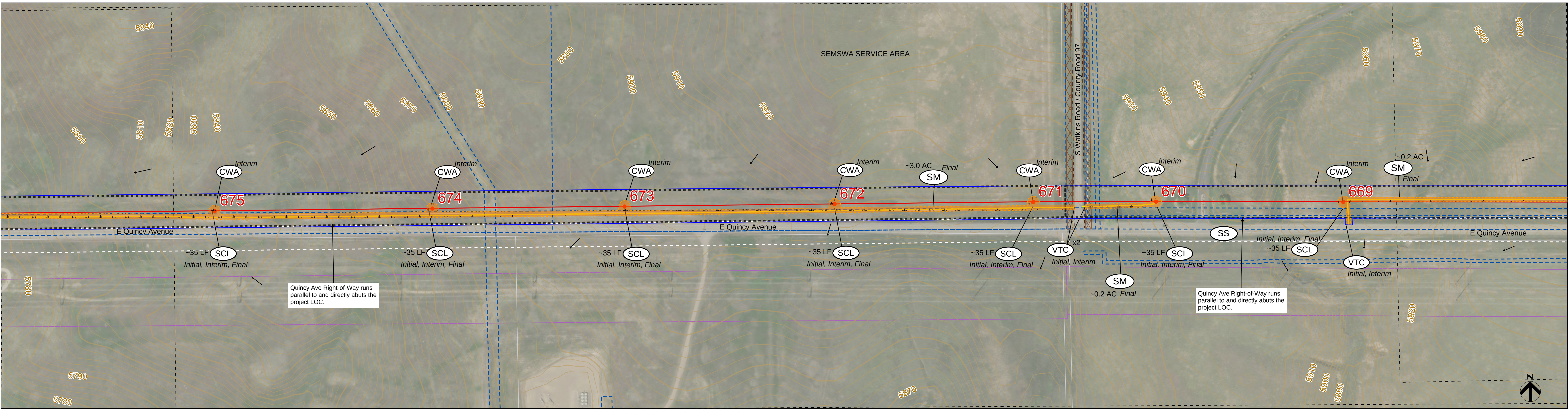
LEGEND

	County Boundary		Limits of Disturbance (LOD)
	City of Aurora Boundary		Limits of Construction (LOC)
	SEMSWA Service Area Boundary		Access
	Assessor Parcel		Arapahoe County Rivers
	Road Centerline		Tetra Tech Field Verified Wetland
	Temporary Staging Yard Boundary		100-Year Inundation Limit for Drainageways with Tributary Areas ≥ 130 AC
	Matchline		SHFA FEMA Zone AO
	Proposed Transmission Line Centerline		SHFA FEMA Zone A
	Proposed Transmission Line Easement		SHFA FEMA Zone AE
	Proposed Transmission Line Structure		FEMA-Regulated Floodway (Zone AE)
	Temporary Construction Area - Pull Site		Quincy Avenue Right-of-Way
	Existing PSCo Easement - Other Utilities		Future Road Right-of-Way Expansion
	Substation		Arapahoe County Road Right-of-Way
	Major Contour (10')		Other Right-of-Way or Easement
	Minor Contour (2')		
	Surface Flow		
	Distance between Right-of-Way and LOC		

NOTES

- APPROPRIATE CMS MUST BE IMPLEMENTED PRIOR TO THE START OF LAND DISTURBANCE ACTIVITY. MUST CONTROL POTENTIAL POLLUTANTS DURING EACH PHASE OF CONSTRUCTION, AND MUST BE CONTINUED THROUGH FINAL STABILIZATION. APPROPRIATE STRUCTURAL AND NON-STRUCTURAL CONTROL MEASURES TO REMAIN IN XCEL OPERATIONAL CONTROL UNTIL COMPLETION OF CONSTRUCTION AND INITIAL STABILIZATION IS COMPLETE.
- SEE STANDARD NOTES AND DETAILS (ARAPAHOE COUNTY GESC SHEET 1) FOR LEGEND OF CM NAMES AND SYMBOLS.
- ANY CONTROL MEASURES SHOWN THAT REQUIRE GRADING, (E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASHOUT AREAS, ETC.), SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING AND ISSUANCE OF THE GESC PERMIT, BUT MUST BE FULLY FUNCTIONAL PRIOR TO SITE GRADING. MAPS SHOW EXISTING CONDITIONS AND PROPOSED INFRASTRUCTURE.
- INITIAL PHASE CMS MUST BE INSTALLED BEFORE GROUND DISTURBING ACTIVITIES MAY COMMENCE IN THAT AREA. INTERIM CMS REQUIRED WHILE CONSTRUCTION IS ACTIVE IN THE AREA. FINAL CMS MUST REMAIN IN PLACE UNTIL UPGRADIENT AREAS HAVE REACHED FINAL STABILIZATION.
- CMS, SUCH AS SEEDING AND MULCHING OF DISTURBED AREAS, MUST BE COMPLETED WITHIN 14 DAYS, IF THE AREA WILL REMAIN UNDISTURBED FOR A PERIOD GREATER THAN 30 DAYS.
- ANY DISTURBED SLOPES STEEPER THAN 4:1 WILL REQUIRE THE USE OF EROSION CONTROL BLANKETS OR FLEXIBLE GROWTH MEDIUM, AS APPROVED BY THE GESC INSPECTOR.
- EXACT LOCATION OF CMS AT STRUCTURES TO BE DETERMINED WITH ON SITE CONTRACTOR AND VERIFIED BY AGENCY STORMWATER INSPECTOR. CMS WILL BE FIELD FIT AND MAY REQUIRE MODIFICATION THROUGHOUT CONSTRUCTION PHASES.
- CONTRACTOR MUST RESTORE ALL DISTURBED AREA WITH SEED AND MULCH (SM).
- DISTURBANCES ON EXISTING, IMPROVED ACCESS ROUTES ARE NOT EXPECTED.
- SCL TO BE INSTALLED DOWNGRADIENT OF DISTURBANCES WITHIN FLOODPLAIN. IMPACTS TO FLOODPLAIN NOT TO EXTEND BEYOND WHAT IS SHOWN ON SHEET.
- FOR DIRT PACKED ROADS, CONTRACTOR TO MANUALLY REMOVE MUD FROM TIRES AND CLEAN UP TRACK-OUT AS NEEDED.
- CONTRACTOR TO DRIVE AND CRUSH WITHIN PULL SITES AND ACCESS AREAS WITHIN R.O.W. IF RUTTING (4 IN. OR DEEPER) OCCURS, CONTRACTOR TO RESTORE WITH SM AND INSTALL SCL DOWNGRADIENT OF DISTURBANCE. SM HATCHING IS SHOWN IN THESE AREAS FOR CONSERVATIVE ESTIMATING OF RESTORATION NEEDS.
- CONTRACTOR TO BRIDGE WATER FEATURE USING TIMBER BEAMS THAT SPAN THE CHANNEL. THERE WILL BE NO IMPACT TO CHANNEL.
- CWAS MUST BE LINED IN AREAS WITH HIGH GROUNDWATER. LINERS MUST BE 30MIL OR GREATER.







ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

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**XCEL TLINE PATHWAYS SEGMENT 5
ARAPAHOE COUNTY BUILD**

SHEET 05: MB-3T, MB-3B

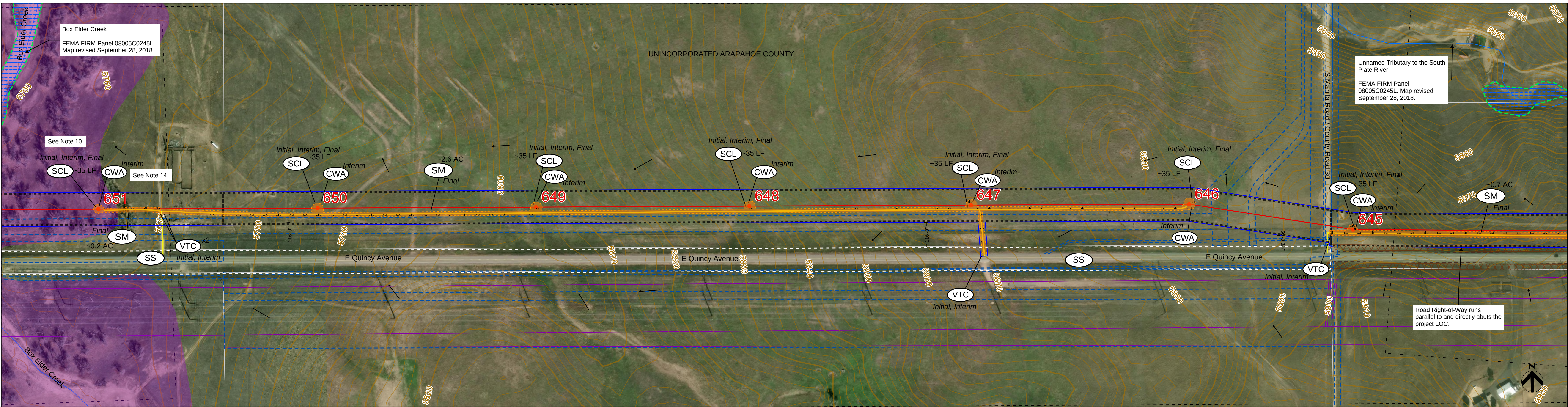
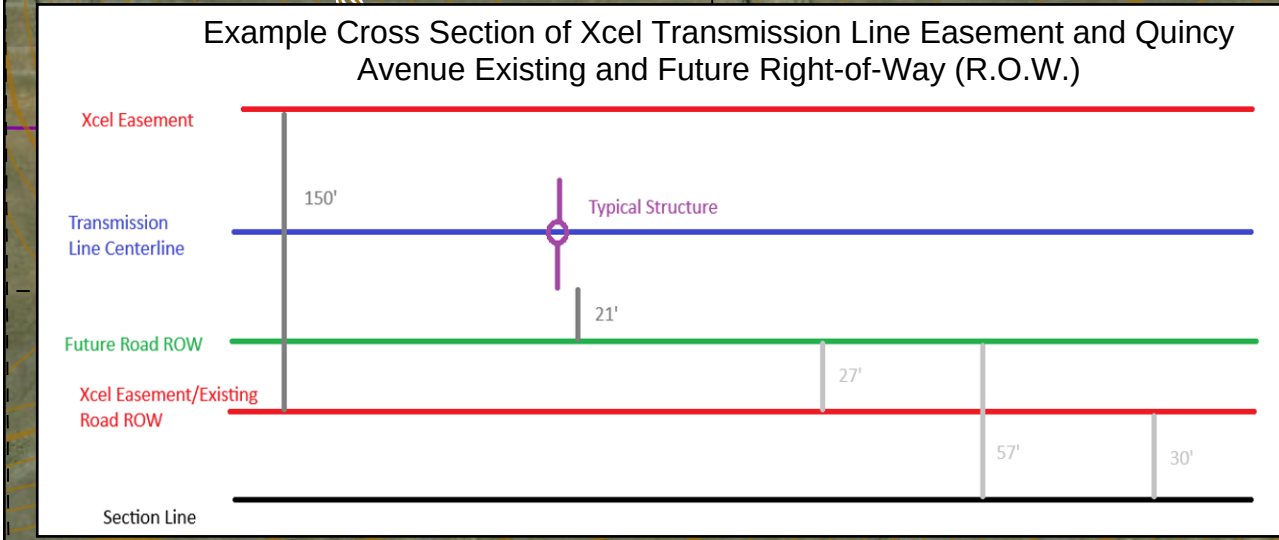
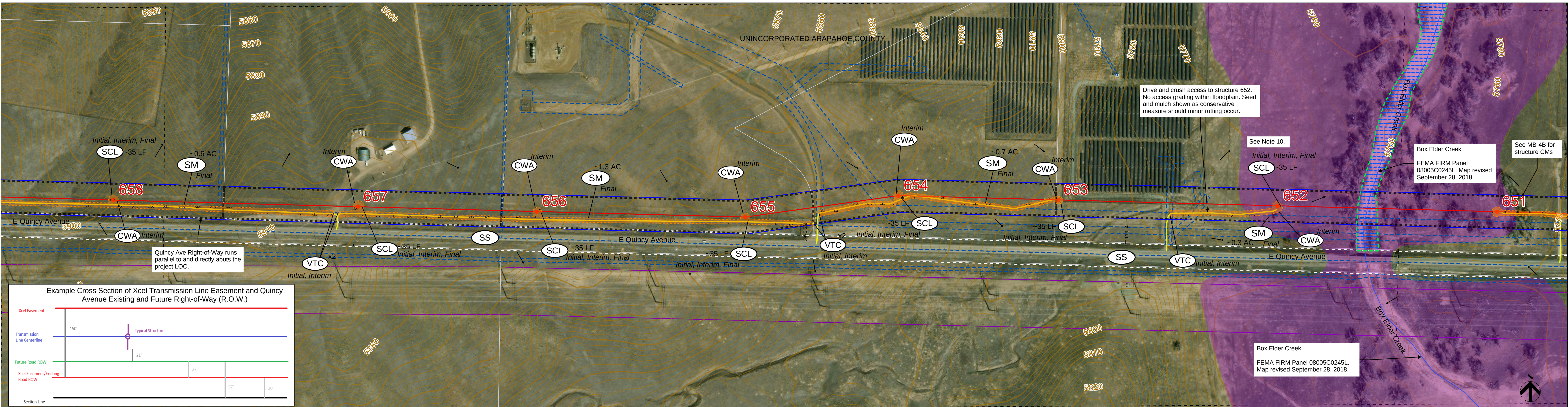
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LEGEND

	County Boundary		Limits of Disturbance (LOD)
	City of Aurora Boundary		Limits of Construction (LOC)
	SEMSWA Service Area Boundary		Access
	Assessor Parcel		Arapahoe County Rivers
	Road Centerline		Tetra Tech Field Verified Wetland
	Temporary Staging Yard Boundary		100-Year Inundation Limit for Drainageways with Tributary Areas ≥ 130 AC
	Matchline		SHFA FEMA Zone AO
	Proposed Transmission Line Centerline		SHFA FEMA Zone A
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	Major Contour (10')		
	Minor Contour (2')		
	Surface Flow		
	Distance between Right-of-Way and LOC		

NOTES

- APPROPRIATE CMS MUST BE IMPLEMENTED PRIOR TO THE START OF LAND DISTURBANCE ACTIVITY. MUST CONTROL POTENTIAL POLLUTANTS DURING EACH PHASE OF CONSTRUCTION, AND MUST BE CONTINUED THROUGH FINAL STABILIZATION. APPROPRIATE STRUCTURAL AND NON-STRUCTURAL CONTROL MEASURES TO REMAIN IN XCEL OPERATIONAL CONTROL UNTIL COMPLETION OF CONSTRUCTION AND INITIAL STABILIZATION IS COMPLETE.
- SEE STANDARD NOTES AND DETAILS (ARAPAHOE COUNTY GESC SHEET 1) FOR LEGEND OF CM NAMES AND SYMBOLS.
- ANY CONTROL MEASURES SHOWN THAT REQUIRE GRADING, (E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASHOUT AREAS, ETC.), SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING AND ISSUANCE OF THE GESC PERMIT, BUT MUST BE FULLY FUNCTIONAL PRIOR TO SITE GRADING. MAPS SHOW EXISTING CONDITIONS AND PROPOSED INFRASTRUCTURE.
- INITIAL PHASE CMS MUST BE INSTALLED BEFORE GROUND DISTURBING ACTIVITIES MAY COMMENCE IN THAT AREA. INTERIM CMS REQUIRED WHILE CONSTRUCTION IS ACTIVE IN THE AREA. FINAL CMS MUST REMAIN IN PLACE UNTIL UPGRADIENT AREAS HAVE REACHED FINAL STABILIZATION.
- CMS, SUCH AS SEEDING AND MULCHING OF DISTURBED AREAS, MUST BE COMPLETED WITHIN 14 DAYS, IF THE AREA WILL REMAIN UNDISTURBED FOR A PERIOD GREATER THAN 30 DAYS.
- ANY DISTURBED SLOPES STEEPER THAN 4:1 WILL REQUIRE THE USE OF EROSION CONTROL BLANKETS OR FLEXIBLE GROWTH MEDIUM, AS APPROVED BY THE GESC INSPECTOR.
- EXACT LOCATION OF CMS AT STRUCTURES TO BE DETERMINED WITH ON SITE CONTRACTOR AND VERIFIED BY AGENCY STORMWATER INSPECTOR. CMS WILL BE FIELD FIT AND MAY REQUIRE MODIFICATION THROUGHOUT CONSTRUCTION PHASES.
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XCEL TLINE PATHWAYS SEGMENT 5

ARAPAHOE COUNTY BUILD

SHEET 06: MB-4T, MB-4B

02505001,000

FEET

County Boundary

City of Aurora Boundary

SEMSWA Service Area Boundary

Assessor Parcel

Road Centerline

Temporary Staging Yard Boundary

Matchline

Proposed Transmission Line Centerline

Proposed Transmission Line Easement

Proposed Transmission Line Structure

Temporary Construction Area - Pull Site

Existing PSCo Easement - Other Utilities

Substation

Major Contour (10')

Minor Contour (2')

Surface Flow

Distance between Right-of-Way and LOC

Limits of Disturbance (LOD)

Limits of Construction (LOC)

Access

Arapahoe County Rivers

Tetra Tech Field Verified Wetland

100-Year Inundation Limit for Drainageways with Tributary Areas ≥ 130 AC

SHFA FEMA Zone AO

SHFA FEMA Zone A

SHFA FEMA Zone AE

FEMA-Regulated Floodway (Zone AE)

Quincy Avenue Right-of-Way

Future Road Right-of-Way Expansion

Arapahoe County Road Right-of-Way

Other Right-of-Way or Easement

1. APPROPRIATE CMs MUST BE IMPLEMENTED PRIOR TO THE START OF LAND DISTURBANCE ACTIVITY. MUST CONTROL POTENTIAL POLLUTANTS DURING EACH PHASE OF CONSTRUCTION, AND MUST BE CONTINUED THROUGH FINAL STABILIZATION. APPROPRIATE STRUCTURAL AND NON-STRUCTURAL CONTROL MEASURES TO REMAIN IN XCEL OPERATIONAL CONTROL UNTIL COMPLETION OF CONSTRUCTION AND INITIAL STABILIZATION IS COMPLETE.

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5. CMs, SUCH AS SEEDING AND MULCHING OF DISTURBED AREAS, MUST BE COMPLETED WITHIN 14 DAYS, IF THE AREA WILL REMAIN UNDISTURBED FOR A PERIOD GREATER THAN 30 DAYS.

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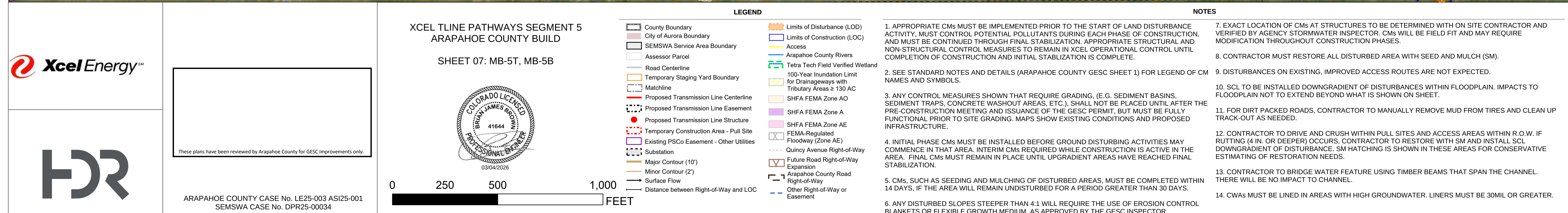
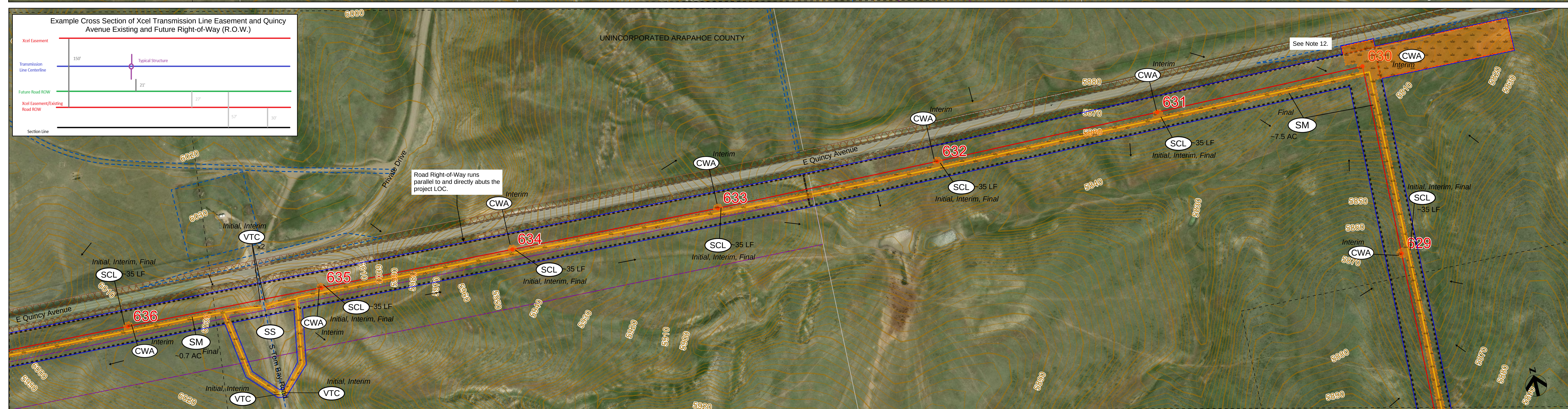
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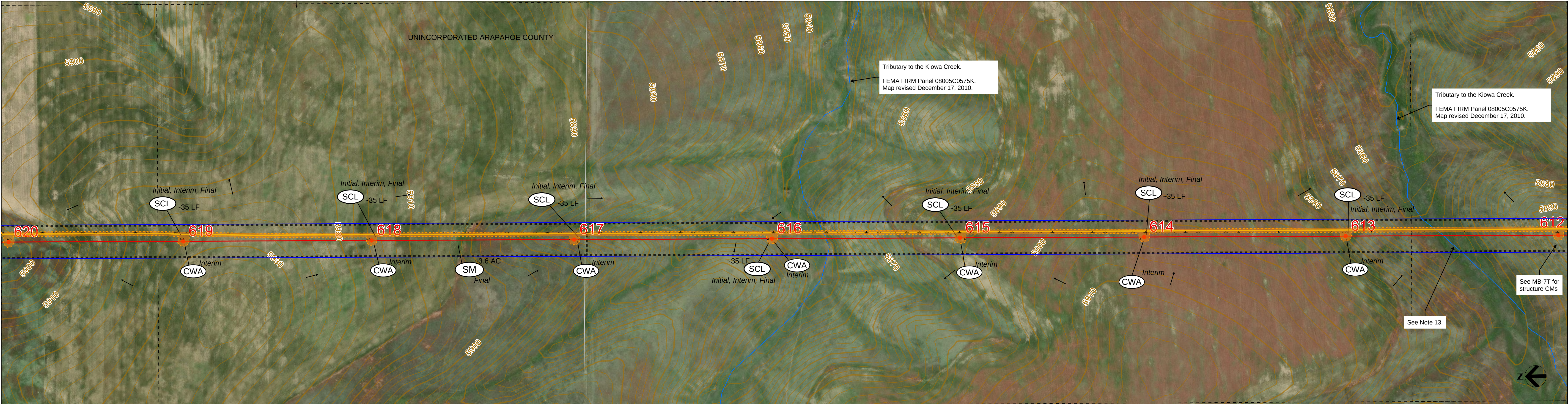
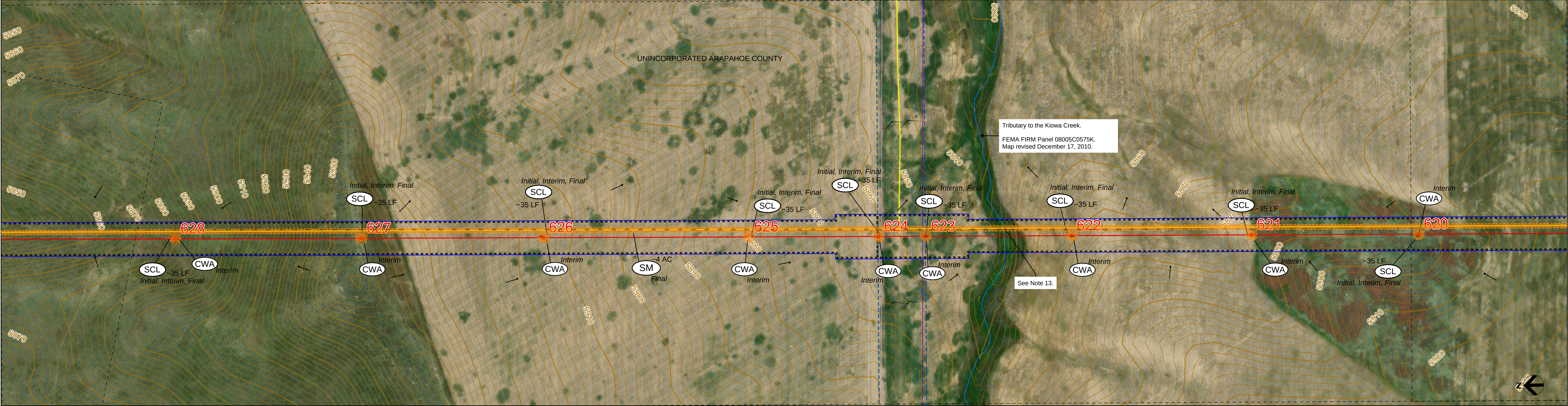
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ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

XCEL TLINE PATHWAYS SEGMENT 5
ARAPAHOE COUNTY BUILD

SHEET 08: MB-6T, MB-6B

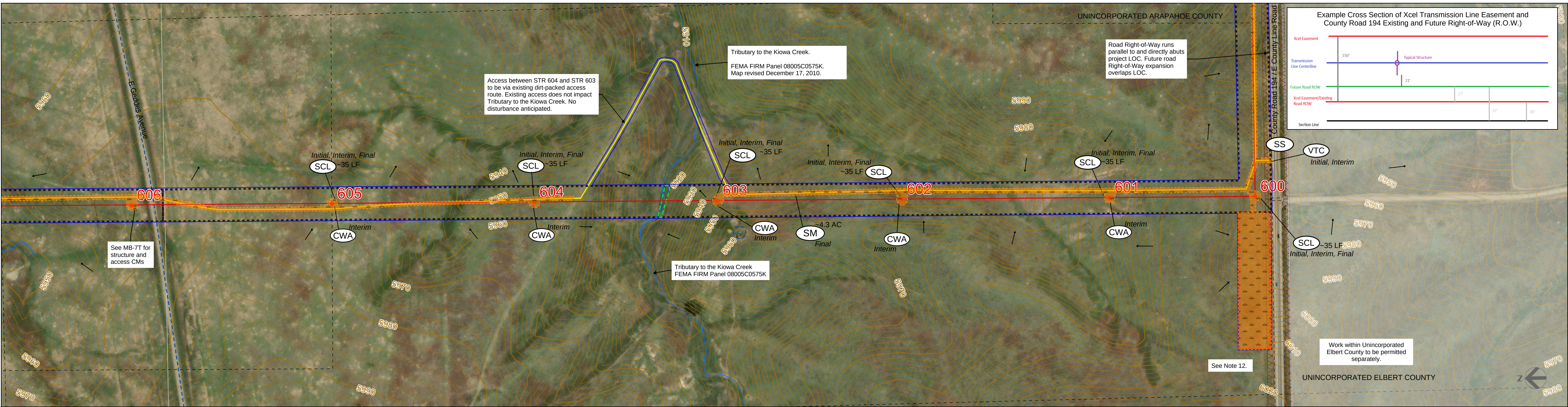
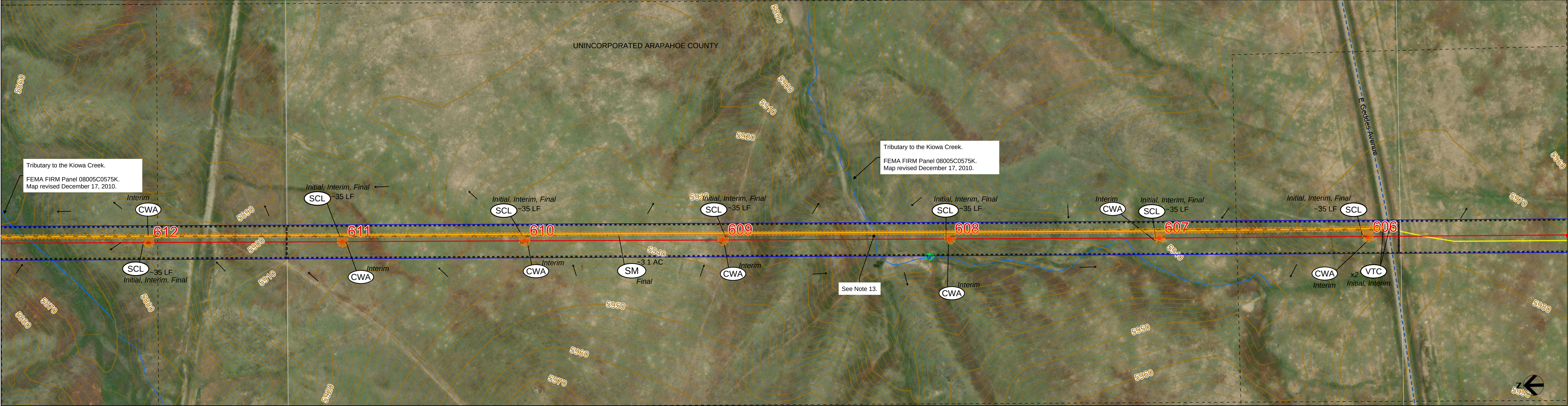
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LEGEND

County Boundary	Limits of Disturbance (LOD)
City of Aurora Boundary	Limits of Construction (LOC)
SEMSWA Service Area Boundary	Access
Assessor Parcel	Arapahoe County Rivers
Road Centerline	Tetra Tech Field Verified Wetland
Temporary Staging Yard Boundary	100-Year Inundation Limit for Drainageways with Tributary Areas ≥ 130 AC
Matchline	SHFA FEMA Zone AO
Proposed Transmission Line Centerline	SHFA FEMA Zone A
Proposed Transmission Line Easement	SHFA FEMA Zone AE
Proposed Transmission Line Structure	FEMA-Regulated Floodway (Zone AE)
Temporary Construction Area - Pull Site	Quincy Avenue Right-of-Way
Existing PSCo Easement - Other Utilities	Future Road Right-of-Way Expansion
Substation	Arapahoe County Road Right-of-Way
Major Contour (10')	Other Right-of-Way or Easement
Minor Contour (2')	
Surface Flow	
Distance between Right-of-Way and LOC	

NOTES

- APPROPRIATE CMs MUST BE IMPLEMENTED PRIOR TO THE START OF LAND DISTURBANCE ACTIVITY, MUST CONTROL POTENTIAL POLLUTANTS DURING EACH PHASE OF CONSTRUCTION, AND MUST BE CONTINUED THROUGH FINAL STABILIZATION. APPROPRIATE STRUCTURAL AND NON-STRUCTURAL CONTROL MEASURES TO REMAIN IN XCEL OPERATIONAL CONTROL UNTIL COMPLETION OF CONSTRUCTION AND INITIAL STABILIZATION IS COMPLETE.
- SEE STANDARD NOTES AND DETAILS (ARAPAHOE COUNTY GESC SHEET 1) FOR LEGEND OF CM NAMES AND SYMBOLS.
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XCEL TLINE PATHWAYS SEGMENT 5

ARAPAHOE COUNTY BUILD

SHEET 09: MB-7T, MB-7B

02505001,000

FEET

LEGEND

County Boundary

City of Aurora Boundary

SEMSWA Service Area Boundary

Assessor Parcel

Road Centerline

Temporary Staging Yard Boundary

Matchline

Proposed Transmission Line Centerline

Proposed Transmission Line Easement

Proposed Transmission Line Structure

Temporary Construction Area - Pull Site

Existing PSCo Easement - Other Utilities

Substation

Major Contour (10')

Minor Contour (2')

Surface Flow

Distance between Right-of-Way and LOC

Limits of Disturbance (LOD)

Limits of Construction (LOC)

Access

Arapahoe County Rivers

Tetra Tech Field Verified Wetland

100-Year Inundation Limit for Drainageways with Tributary Areas ≥ 130 AC

SHFA FEMA Zone AO

SHFA FEMA Zone A

SHFA FEMA Zone AE

FEMA-Regulated Floodway (Zone AE)

Quincy Avenue Right-of-Way

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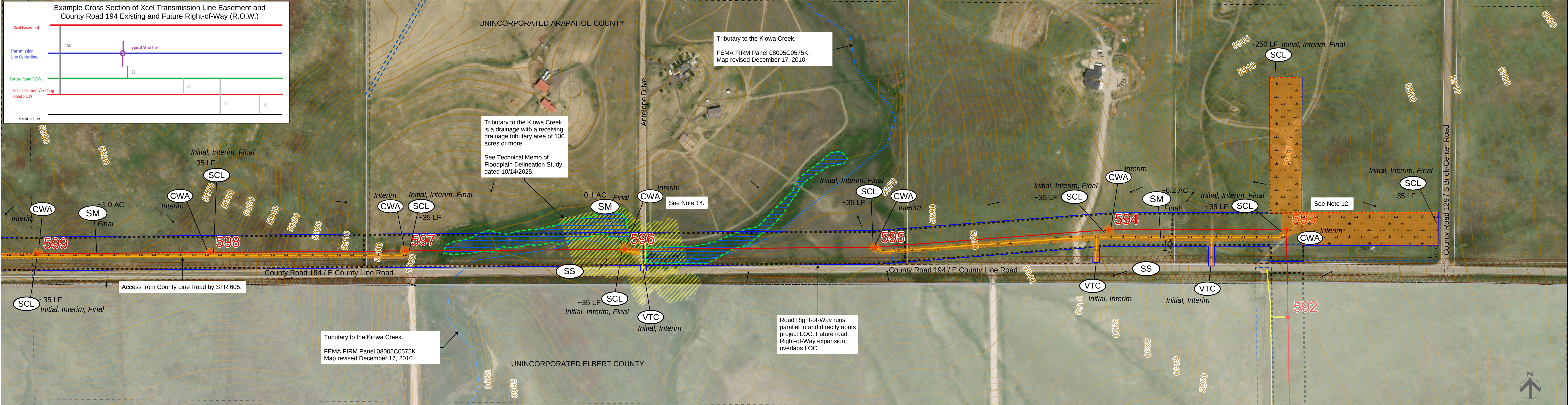
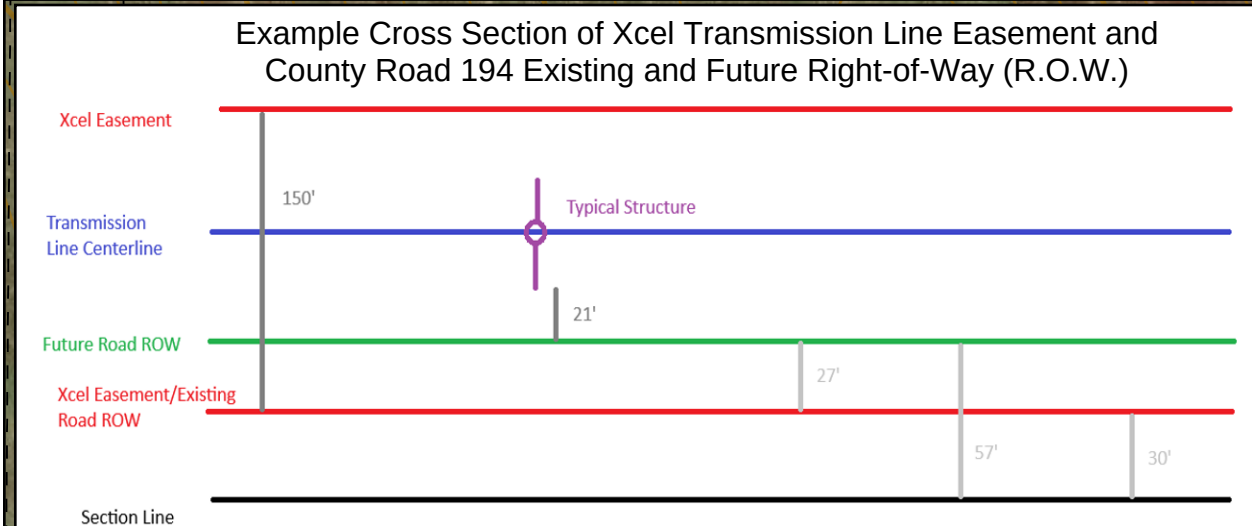
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ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001
SEMSWA CASE No. DPR25-00034

XCEL TLINE PATHWAYS SEGMENT 5
ARAPAHOE COUNTY BUILD

SHEET 10: MB-8T

These plans have been reviewed by Arapahoe County for GESC Improvements only.

0 250 500 1,000

FEET

LEGEND

County Boundary	Limits of Disturbance (LOD)
City of Aurora Boundary	Limits of Construction (LOC)
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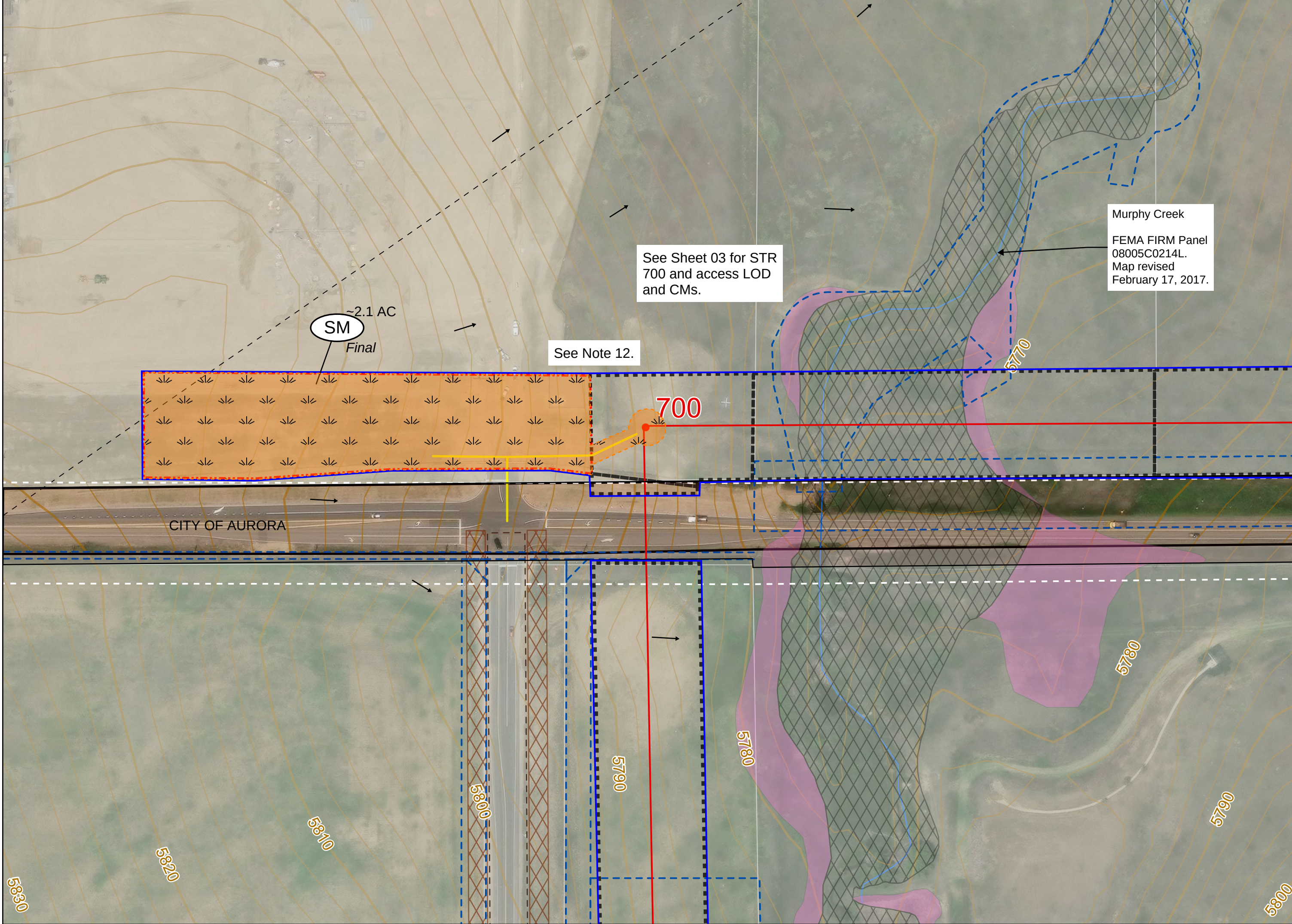
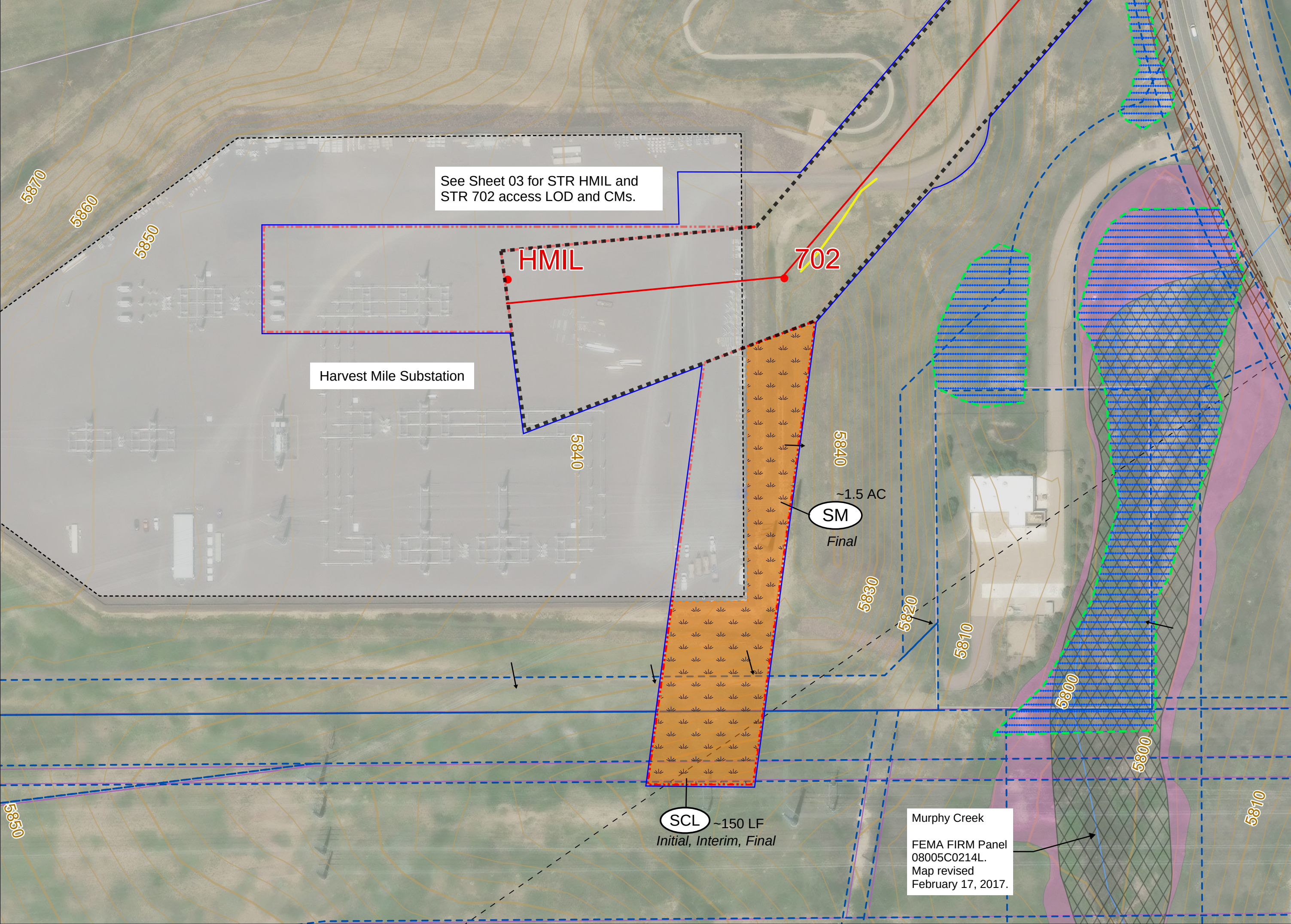
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ARAPAHOE COUNTY CASE No. LE25-003 ASI25-001

SEMSWA CASE No. DPR25-00034

XCEL TLINE PATHWAYS SEGMENT 5

ARAPAHOE COUNTY BUILD

SHEET 11: PULL SITES

LEGEND

County Boundary

City of Aurora Boundary

SEMSWA Service Area Boundary

Assessor Parcel

Road Centerline

Temporary Staging Yard Boundary

Matchline

Proposed Transmission Line Centerline

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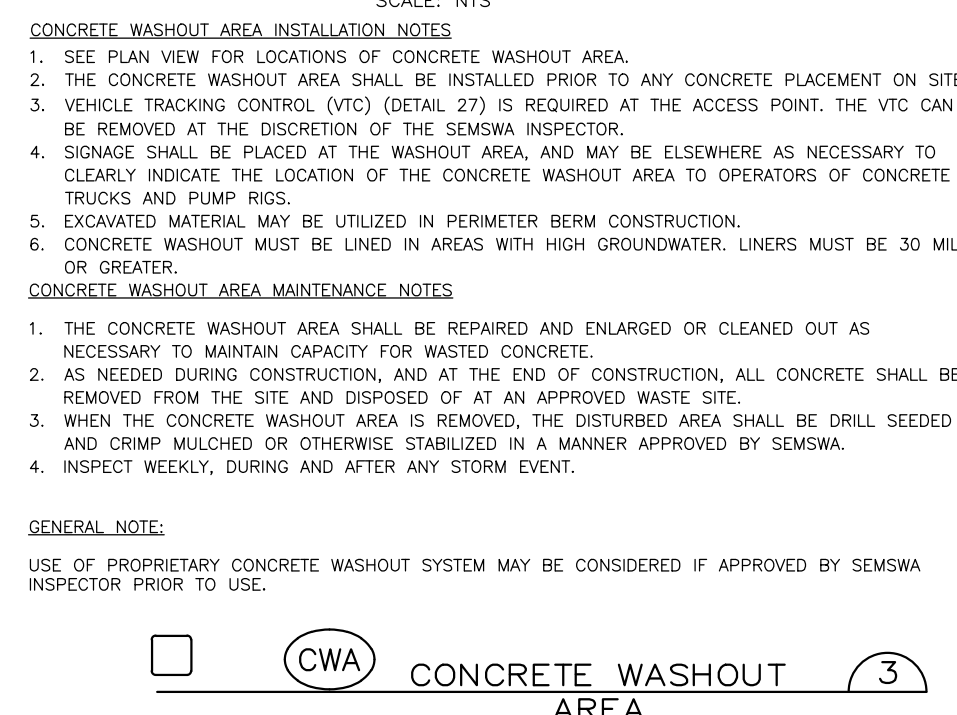
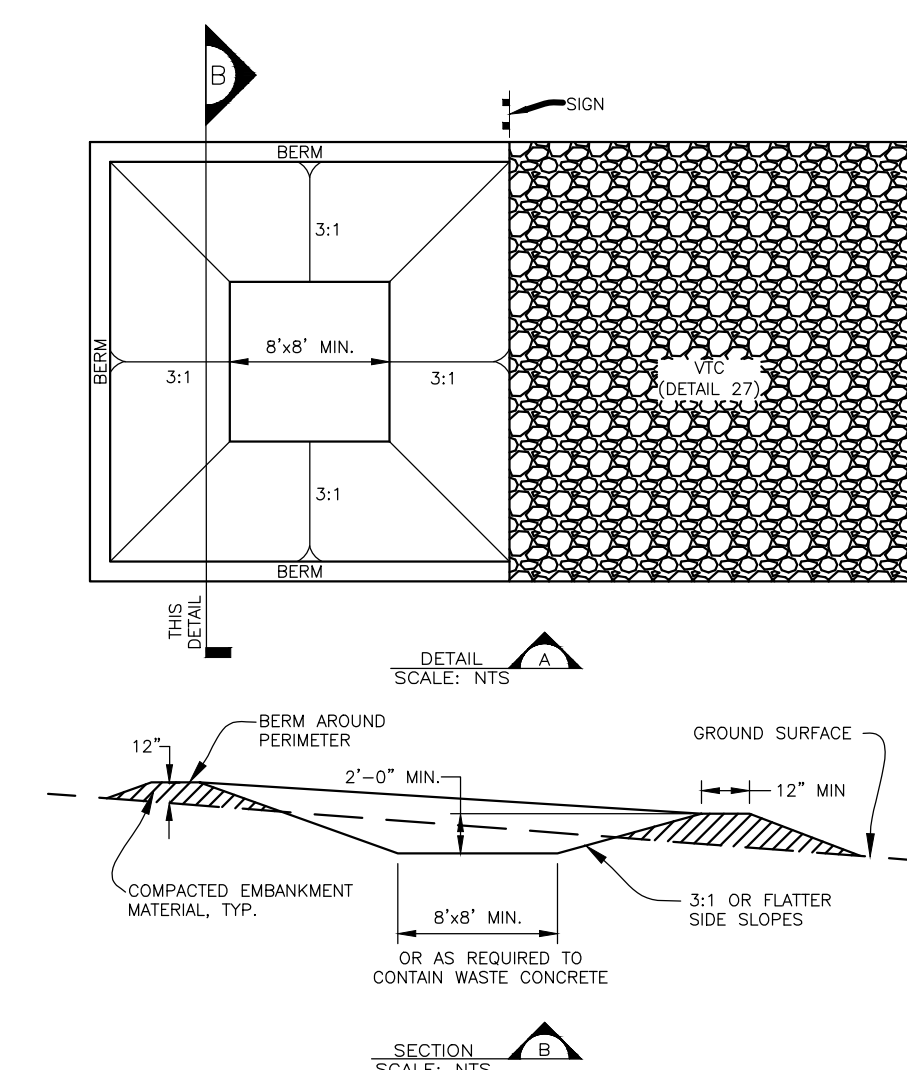
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- GRADING, EROSION, AND SEDIMENT CONTROL (GESC) GENERAL NOTES
- THE SOUTHEAST METRO STORMWATER AUTHORITY (SEMSWA) LAND DEVELOPMENT REVIEW MANAGER SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES SEMSWA HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH THE GRADING, EROSION, AND SEDIMENT CONTROL (GESC) MANUAL. THE LAND DEVELOPMENT REVIEW MANAGER THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.
 - THE ADEQUACY OF THIS GESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER. CHANGES TO DESIGN INTENT THAT MEET THE DEFINITION OF MAJOR MODIFICATIONS MUST GO THROUGH ORIGINAL DESIGN ENGINEER.
 - THE GESC PLAN SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY SEMSWA, AFTER WHICH TIME THE PLAN SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY SEMSWA. PLANS MUST CONFORM TO CURRENT REQUIREMENTS.
 - ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY SEMSWA'S INSPECTION DIVISION. SEMSWA RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE GESC MANUAL, GESC PLAN OR GESC PERMIT.
 - THE PLACEMENT OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND THE SEMSWA GESC MANUAL.
 - ANY VARIATION IN MATERIAL, TYPE OR LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES FROM THE SEMSWA - ACCEPTED GESC PLAN WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF SEMSWA.
 - UPON RECEIVING THE APPROVED, SIGNED AND STAMPED GESC PLANS AND REPORT, THE CONTRACTOR MAY INSTALL THE NON-EARTH DISTURBING INITIAL-STAGE EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE ACCEPTED GESC PLAN.
 - AFTER INSTALLATION OF THE INITIAL-STAGE EROSION AND SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL CALL THE INSPECTION DIVISION TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE NO LESS THAN 24 HOURS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.
 - IN ADDITION TO THE SEMSWA INSPECTOR AND GESC MANAGER, THE FOLLOWING REPRESENTATIVES SHOULD ATTEND: GENERAL CONTRACTOR, OWNER, OR OWNER'S REPRESENTATIVE AND GRADING SUBCONTRACTOR. IF ANY OF THE REQUIRED PARTICIPANTS FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE INSTALLATION OF THE INITIAL CONTROL MEASURES ARE NOT APPROVED BY THE SEMSWA INSPECTOR, THE APPLICANT WILL HAVE TO PAY A RESINCTION FEE, ADDRESS ANY PROBLEMS WITH CONTROL MEASURE INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION.
 - CONSTRUCTION SHALL NOT BEGIN UNTIL THE SEMSWA INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL CONTROL MEASURES AND THE APPROVED GESC PERMIT HAS BEEN ISSUED BY SEMSWA AND IS IN-HAND ON THE SITE. THE COMPLETED PERMIT WILL GENERALLY BE FIELD ISSUED OR ISSUED VIA EMAIL AFTER THE INSTALLATION OF THE INITIAL CONTROL MEASURES ARE APPROVED.
 - THE GESC MANAGER SHALL STRICTLY ADHERE TO THE SEMSWA APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE SEMSWA INSPECTION DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE INSPECTION DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED IN ANY ADDITIONAL AREAS OF CONSTRUCTION/DISTURBANCE ARE NEEDED.
 - THE MAXIMUM AREA OF CONSTRUCTION SHALL BE LIMITED TO 40 ACRES (70 ACRES IF APPROVED FOR SOIL MITIGATION OPERATIONS) TO REDUCE THE AMOUNT OF LAND DISTURBED AT ANY ONE TIME. LARGER SITES SHALL BE DIVIDED INTO PHASES THAT ARE EACH 40 (OR 70) ACRES OR LESS IN SIZE. THESE PROJECTS SHALL CONDUCT GRADING ACTIVITIES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN. CONTROL MEASURE INSTALLATION AND APPROVAL BY SEMSWA AT THE START AND COMPLETION OF EACH PHASE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE GESC MANUAL.
 - NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.
 - THE GESC PERMIT SHALL BE VALID FOR A PERIOD OF TWO (2) YEARS.
 - A COPY OF THE GESC PERMIT AND APPROVED GESC PLANS SHALL BE ON SITE OR MADE AVAILABLE UPON REQUEST.
 - THE GESC MANAGER SHALL BE RESPONSIBLE PARTY FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE GESC PERMIT AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH SEMSWA FOR ALL MATTERS PERTAINING TO THE GESC PERMIT. THE GESC MANAGER SHALL BE ON THE SITE AS NECESSARY TO ENSURE THE GESC REQUIREMENTS ARE BEING IMPLEMENTED, AND (ALONG WITH THE ALTERNATE GESC MANAGER) SHALL PROVIDE SEMSWA WITH A 24-HOUR EMERGENCY CONTACT NUMBER. IN THE EVENT THAT THE CONTRACTOR'S GESC MANAGER IS NOT ON SITE AND CANNOT BE REACHED DURING A VIOLATION, THE ALTERNATE GESC MANAGER SHALL BE CONTACTED. IF NEITHER THE GESC MANAGER NOR ALTERNATE GESC MANAGER CAN BE CONTACTED DURING ANY VIOLATION, WITHIN 24 HOURS, VIOLATION MAY BE ISSUED TO THE PERMITTEE(S).
 - ALL CONSTRUCTION TRAFFIC MUST EXIT THE SITE THROUGH THE SEMSWA-APPROVED ACCESS POINT. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL EXIT POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE SEMSWA INSPECTION DIVISION.
 - THE GESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED onto ADJACENT PAVED AREAS. PAVED AREAS INCLUDING STREETS ARE TO BE KEPT CLEAN THROUGHOUT BUILD-OUT AND SHALL BE CLEANED, WITH A STREET SWEEPER OR SIMILAR DEVICE, AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE SEMSWA GESC INSPECTOR. STREET WASHING IS NOT ALLOWED. SEMSWA RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
 - APPROVED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE GESC MANAGER SHALL INSPECT ALL CONTROL MEASURES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND GESC MANUAL. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN 48 HOURS. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
 - STRAW BALES ARE NOT A SEMSWA GESC-ACCEPTED SEDIMENT CONTROL MEASURE.
 - TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN THE LOCATION SHOWN ON THE ACCEPTED GESC PLAN. THE TOPSOIL STOCKPILE(S) SHALL FOLLOW ALL STOCKPILING CRITERIA DESCRIBED IN THE GESC MANUAL. TOPSOIL SHALL BE REPLACED AT A MINIMUM DEPTH OF 6 INCHES. IF A MINIMUM DEPTH OF 6 INCHES CAN NOT BE OBTAINED, ADDITIONAL TOPSOIL AND/OR APPROVED SOIL AMENDMENTS WILL BE REQUIRED TO BE PLACED PRIOR TO SEEDING AND MULCHING.
 - THE ACCEPTED GESC PLAN MAY REQUIRE CHANGES OR ALTERNATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. THE GESC MANAGER SHALL OBTAIN PRIOR APPROVAL FOR MAJOR MODIFICATIONS FROM THE DESIGN ENGINEER AND SEMSWA FOR ANY PROPOSED CHANGES.
 - LINING OF TEMPORARY SWALES AND DITCHES SHALL BE IN ACCORDANCE WITH THE GESC MANUAL.
 - ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE GESC MANAGER. THE GESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
 - A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
 - SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY SEMSWA.
 - ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDE BUT ARE NOT LIMITED TO, SURFACE WATER, GROUND WATER AND DRY GULLIES OR STORM SEWER LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE CDPIE PER CRS 25-8-601, AND SEMSWA. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE CDPIE. CONTACT INFORMATION FOR CDPIE, SEMSWA AND THE NATIONAL RESPONSE CENTER CAN BE FOUND IN APPENDIX A. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER. TO REPORT SPILLS TO SEMSWA CALL 303-858-8844.
 - ALL WORK ON SITE SHALL STAY A MINIMUM OF ONE HUNDRED (100) FEET AWAY FROM ANY DRAINAGE WAY, WETLAND, ETC. UNLESS OTHERWISE NOTED ON AN ACCEPTED SEMSWA GESC PLAN.
 - THE USE OF REBAR, STEEL STAKES, STAPLES, OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF ANY EROSION OR SEDIMENT CONTROL MEASURE IS PROHIBITED (EXCEPT STEEL TEE-POSTS FOR USE IN SUPPORTING CONSTRUCTION FENCE).
 - THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.
 - ALL DEWATERING ON SITE SHALL BE COORDINATED WITH A SEMSWA GESC INSPECTOR AND BE FREE OF SEDIMENT IN ACCORDANCE WITH THE GESC MANUAL, AND STATE OF COLORADO DEWATERING PERMIT.
 - ALL PERMANENT INSTALLATIONS OF PIPES FOR STORM SEWERS, SLOPE DRAINS, AND CULVERTS, TOGETHER WITH RIPRAP APRONS OR OTHER INLET AND OUTLET PROTECTION, REQUIRE INSPECTION BY SEMSWA (SEPARATE FROM GESC INSPECTIONS).
 - ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE GESC MANUAL WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING, INCLUDING AREAS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS, WHICHEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
 - HYDRAULIC SEEDING IS NOT AN ACCEPTABLE METHOD OF SEEDING WITHIN THE SEMSWA SERVICE AREA.
 - HYDRO-MULCH MAY BE USED FOR LIMITED APPLICATIONS AS APPROVED BY SEMSWA.
 - UTILITY LINE INSTALLATION SHALL COMPLY WITH THE FOLLOWING CRITERIA:
 - ALL UTILITY WORK WITHIN A RIGHT-OF-WAY SHALL BE REQUIRED TO OBTAIN A RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT IN ACCORDANCE WITH THE APPROPRIATE STANDARDS.
 - PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROLS.
 - AT THE END OF A WORK DAY, NO TRENCH SHALL BE LEFT OPEN AND BACKFILL MUST BE COMPLETED TO GRADE.
 - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - AT NO TIME SHALL EXCAVATED MATERIAL BE PLACED ON THE STREET.
 - TRENCH DEWATERING DEVICES MUST DISCHARGE IN A MANNER THAT WILL NOT EFFECT STREAMS, WETLANDS, DRAINAGE SYSTEMS, OR OFF-SITE PROPERTY. DISCHARGE FROM TRENCH SHALL BE FREE OF ANY SEDIMENT. A RIPRAP PAD SHALL BE PLACED AT THE DISCHARGE END OF THE HOSE TO PREVENT ANY ADDITIONAL EROSION.
 - STORM SEWER INLET PROTECTION SHALL BE PROVIDED WHENEVER SOIL EROSION FROM THE EXCAVATED AREA HAS POTENTIAL OF ENTERING THE STORM DRAINAGE SYSTEM.
 - ALL DISTURBED AREAS SHALL BE DRILL SEEDDED AND CRIMP MULCHED WITHIN FIVE DAYS AFTER UTILITY INSTALLATION IS COMPLETED.
 - ALL OTHER APPLICABLE CRITERIA AS OUTLINED IN THE GESC MANUAL.
 - ALL SINGLE-FAMILY RESIDENTIAL DEVELOPMENT PROJECTS SHALL COMPLY WITH THE GESC CRITERIA AS PRESENTED IN THE GESC MANUAL.
 - NO RECYCLED ASPHALT SHALL BE USED AS A CONTROL MEASURE. RECYCLED CONCRETE MUST BE APPROVED BY SEMSWA.
 - SEMSWA MAY ALLOW THE INSTALLATION OF ALTERNATIVE CONTROL MEASURES OTHER THAN THE GESC PLAN STANDARD NOTES AND DETAILS, IF ALTERNATIVE EROSION AND SEDIMENT CONTROL MEASURES WILL BE USED, OUT SHEETS MUST BE SUBMITTED TO THE SEMSWA INSPECTOR.
 - IF YOU ARE EXPORTING EXCESS DIRT WITHIN THE SEMSWA SERVICE AREA, YOU WILL BE REQUIRED TO OBTAIN A GESC PERMIT FOR THE SECONDARY SITE.

		LEGEND	
1	①		CBC CUT BACK CURB
2	①		CD CHECK DAM
3	①		CWA CONCRETE WASHOUT AREA
4	①		CF CONSTRUCTION FENCE
5	①		CM CONSTRUCTION MARKERS
6	①		CS CURB SOCK
7	①		DW DEWATERING
8	①		DD DIVERSION DITCH
9	②		ECB EROSION CONTROL BLANKET
10	②		FGM FLEXIBLE GROWTH MEDIUM
11	②		GMS GROUT MIXING STATION
12	②		IP INLET PROTECTION
13	②		RCD REINFORCED CHECK DAM
14	②		RRB REINFORCED ROCK BERM
15	②		RRB RRB FOR CULVERT PROTECTION
16	③		SB SEDIMENT BASIN
17	③		SCL SEDIMENT CONTROL LOG
18	③		ST SEDIMENT TRAP
19	③		SM SEEDING AND MULCHING
20	③		SF SILT FENCE
21	③		SFR SILT FENCE REINFORCED
22	④		SID SLOPE INTERCEPT DITCH
23	④		SSA STABILIZED STAGING AREA
24	④		SR SURFACE ROUGHENING
25	④		TSD TEMPORARY SLOPE DRAIN
26	④		TSC TEMPORARY STREAM CROSSING
27	④		VTC VEHICLE TRACKING CONTROL
28	④		VTC VTC WITH WHEEL WASH
			LOC LIMITS OF CONSTRUCTION
			*EG MAY MEET MAJOR MODIFICATION REQUIREMENTS



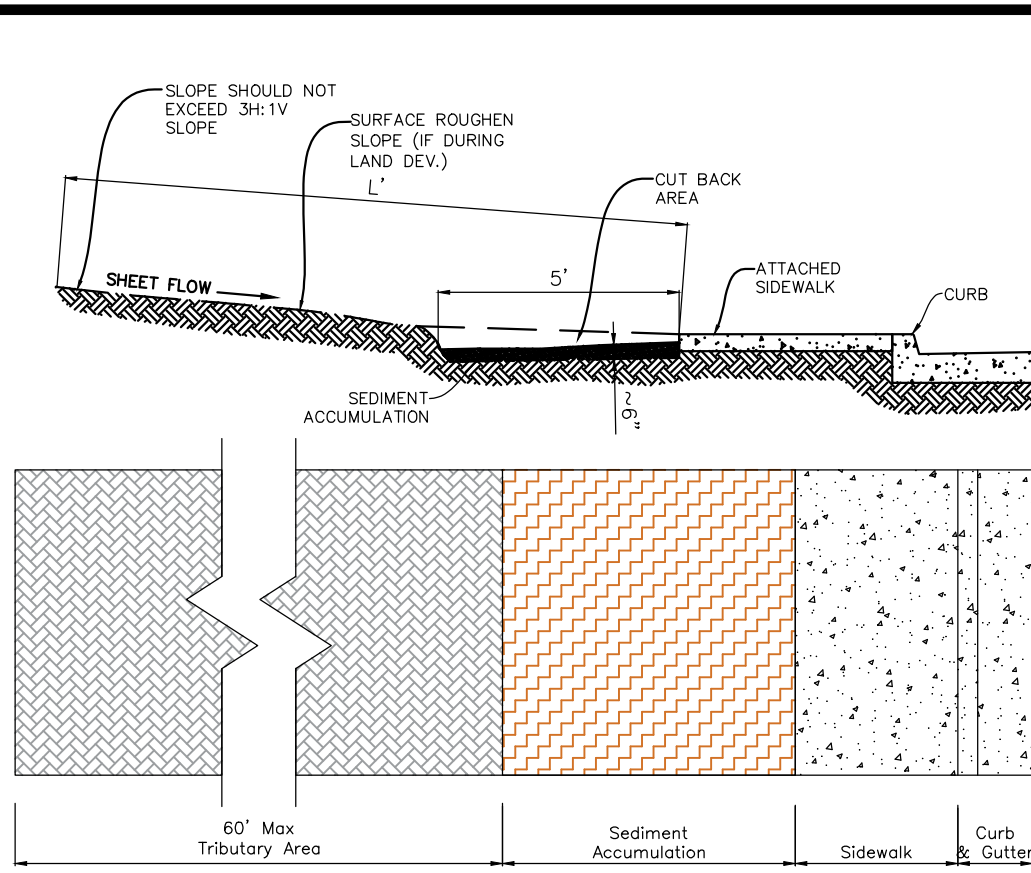
ROCK AND RIPRAP GRADATIONS

TABLE 1. RIPRAP GRADATIONS			
D50 MEDIAN SIZE (INCHES)	% OF MATERIAL SMALLER THAN TYPICAL STONE	TYPICAL STONE EQUIVALENT DIAMETER (INCHES)	TYPICAL STONE WEIGHT (POUNDS)
6	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	85 30 10 0.4
9	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	160 85 35 1.3
12	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	440 275 120 3
18	100 50 - 70 35 - 50 2 - 10	30 24 18 6	1280 650 275 10
24	100 50 - 70 35 - 50 2 - 10	42 33 24 9	3500 1700 650 35

TABLE 2. RIPRAP BEDDING

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES	
	CLASS A	
3"	100	
1 1/2"	20 - 90	
NO. 4	0 - 20	
NO. 200	0 - 3	

MATCHES SPECIFICATIONS FOR COOT CLASS A FILTER MATERIAL, AND LOFT TYPE 1 BEDDING. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.



DESCRIPTION AND PURPOSE

- A TEMPORARY SEDIMENT BARRIER AND TRAP FORMED BY EXCAVATION BEHIND CURB OR SIDEWALK TO RETAIN SEDIMENT ON SITE DURING CONSTRUCTION.

SUITABLE APPLICATIONS

- DURING LAND DEVELOPMENT AFTER PAVING OR DURING VERTICAL CONSTRUCTION.
- USE IN TREE LAWNS OR IN LANDSCAPE.
- USE SURFACE ROUGHENING ON UPGRADED SLOPES IF DURING LAND DEVELOPMENT.

SIZING

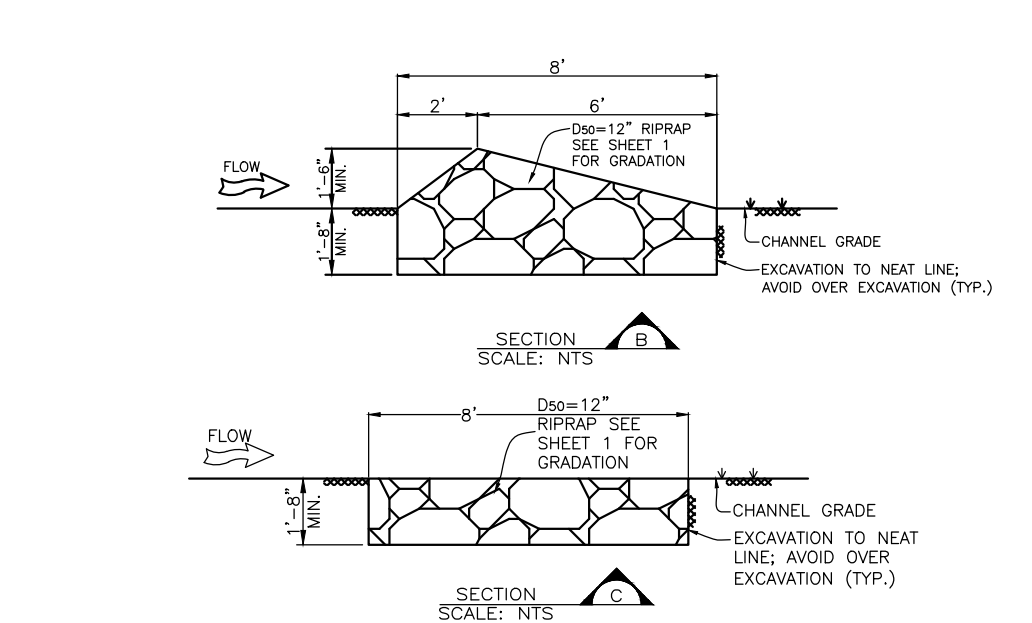
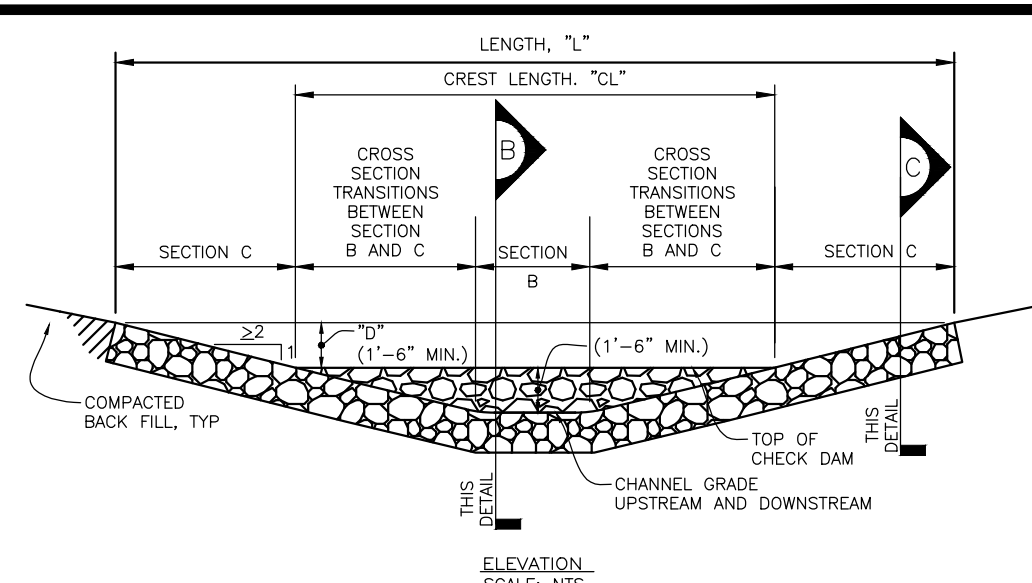
- SEDIMENT ACCUMULATION VOLUME IS SIZED PER 1000 SF OF TRIBUTARY AREA. 6" WIDTH AND 6" DEPTH IS ACCEPTABLE FOR TRIBUTARY SHEET FLOW UP TO 80 LF. TRIBUTARY SHEET FLOW OVER 80 LF MUST COMPUTE CUSTOM SEDIMENT ACCUMULATION BASIN.

LIMITATIONS

- NOT FOR USE EXCEEDING 3H:1V SLOPES.
- NOT FOR USE FOR CONCENTRATED FLOW AREAS.
- PROLONGED STANDING WATER MAY AFFECT SUB-BASE OF PAVING AND COULD CAUSE SOIL TO SETTLE AND POTENTIALLY DAMAGE CONCRETE.

INSPECTION AND MAINTENANCE

- THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURE.
- SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
- CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
- VL RIPRAP SHALL BE UTILIZED FOR CHECK DAMS.
- RIP RAP PAD SHALL BE TRENCHED INTO THE CHANNEL BANKS TO ADEQUATELY ANCHOR WITH CENTER OF THE CHECK DAM LOWER TO ALLOW FOR OVERTOPPING AT THE CREST.

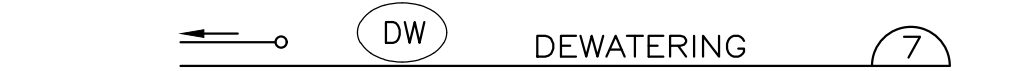
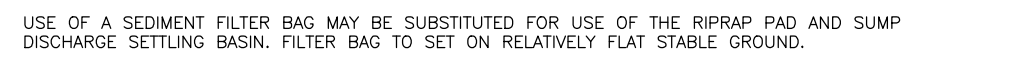
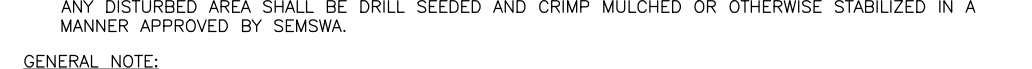
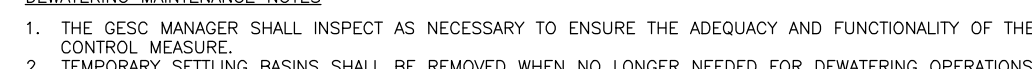
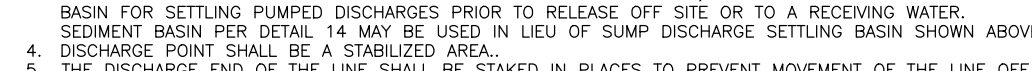
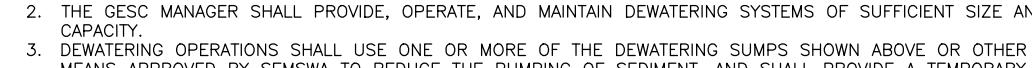
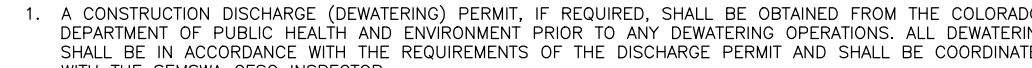
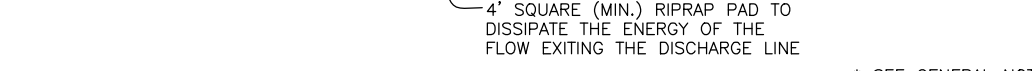
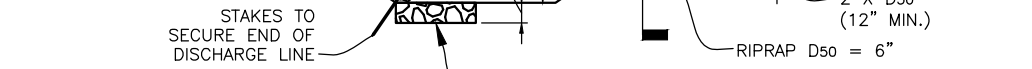
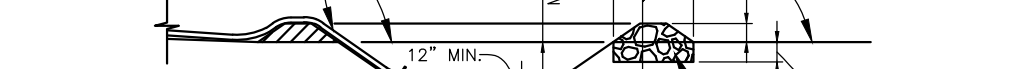
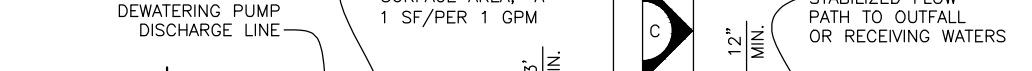
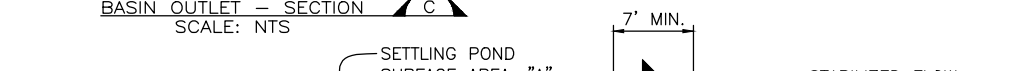
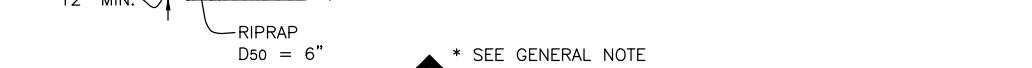
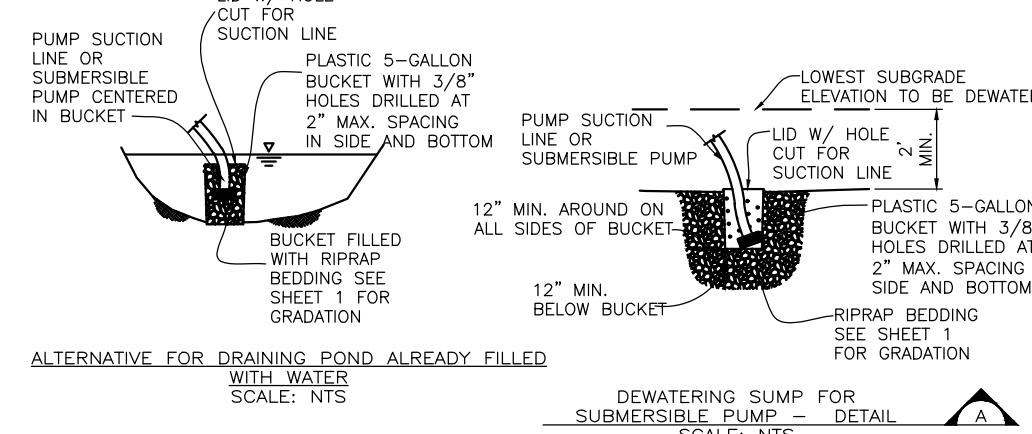
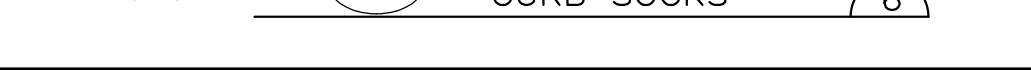
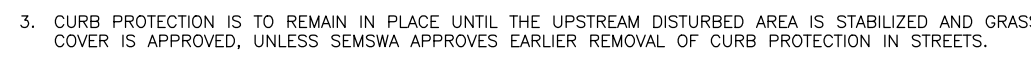
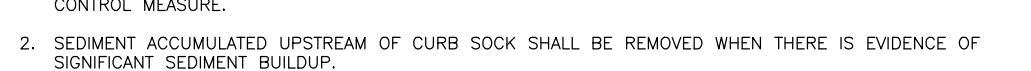
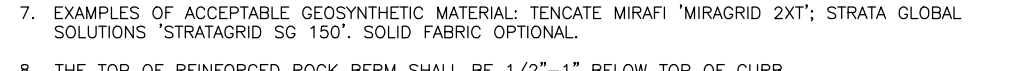
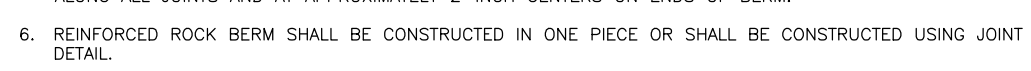
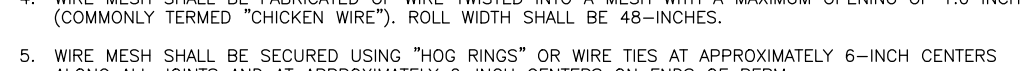
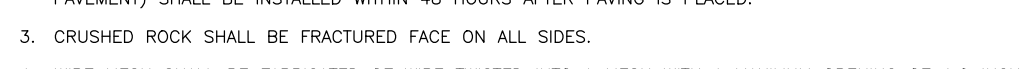
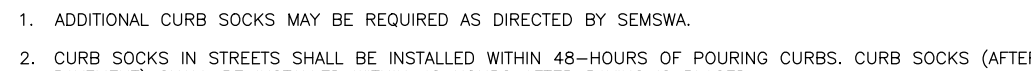
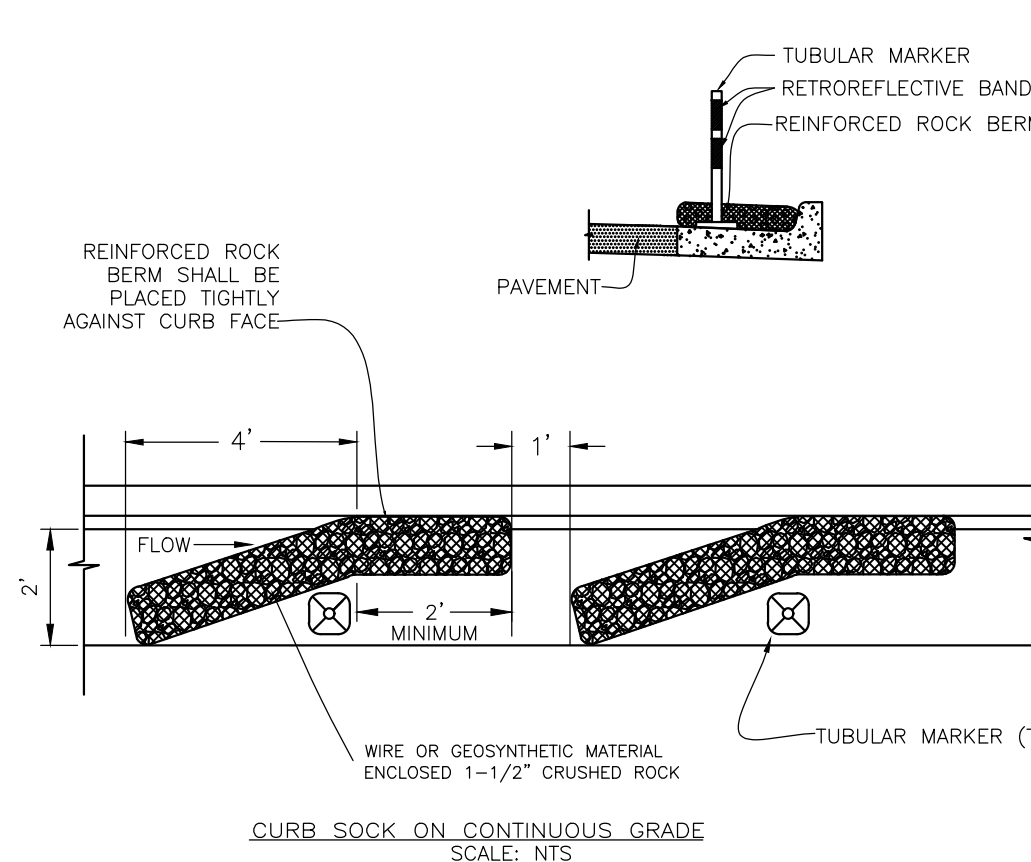


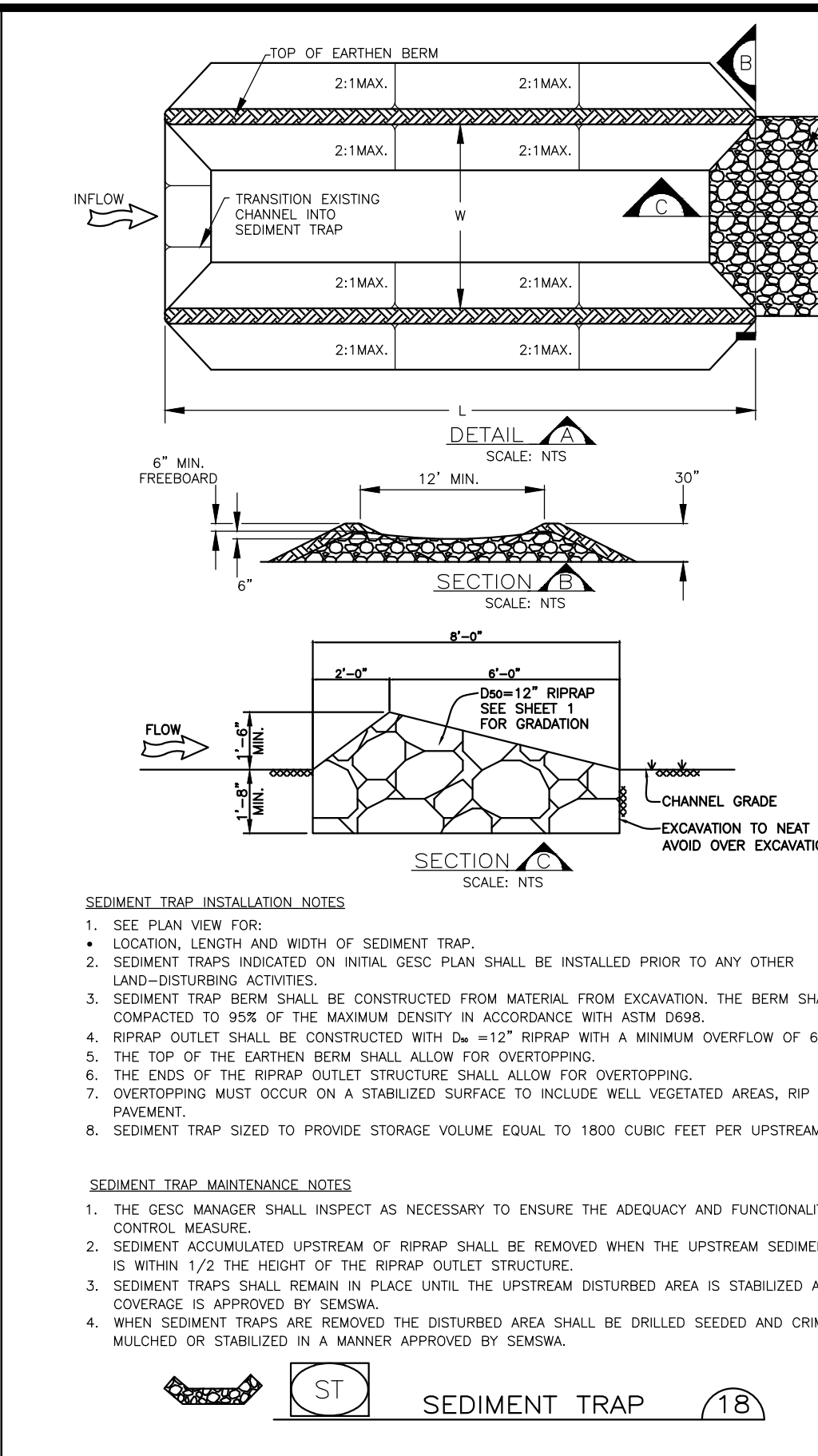
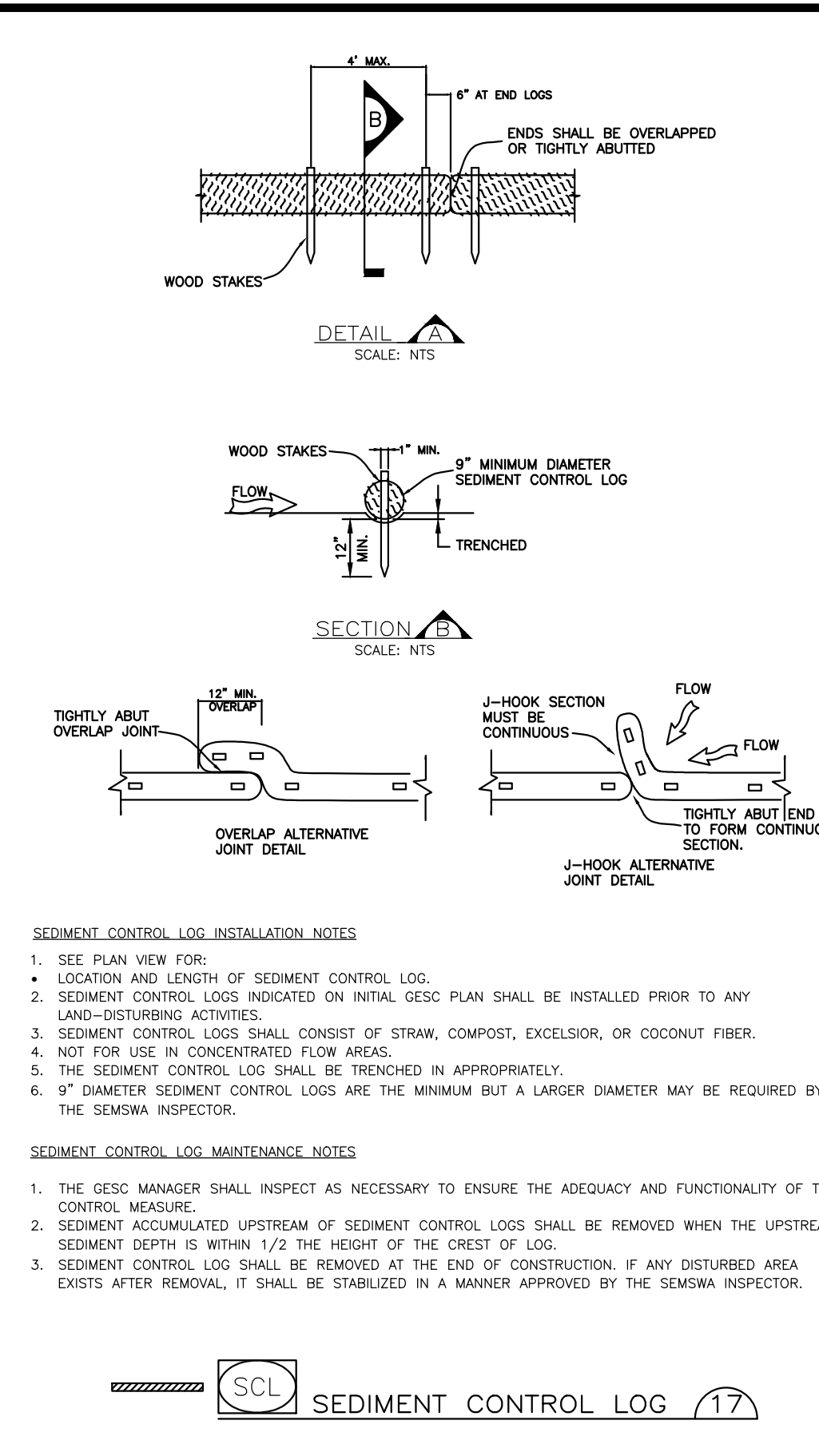
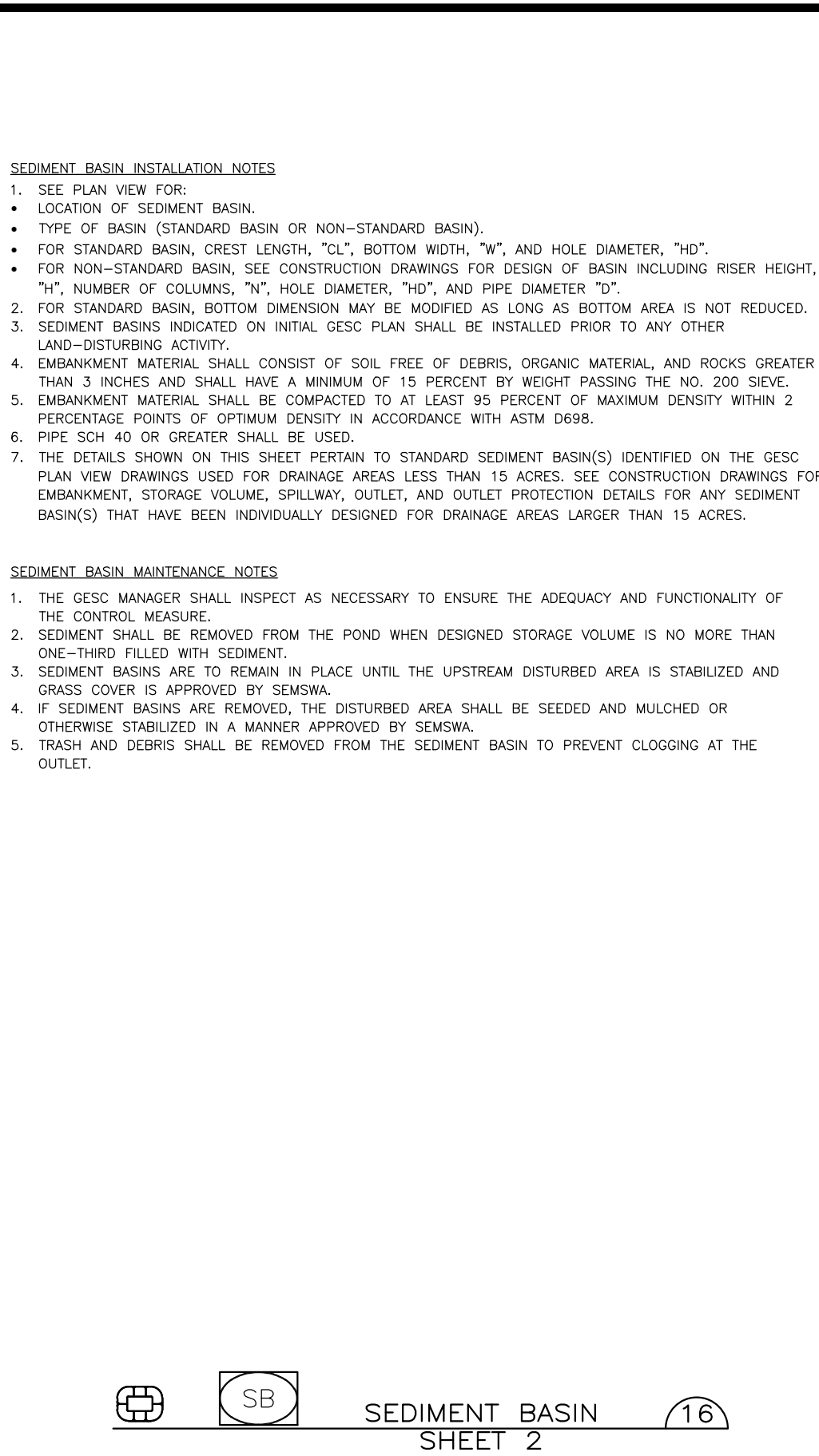
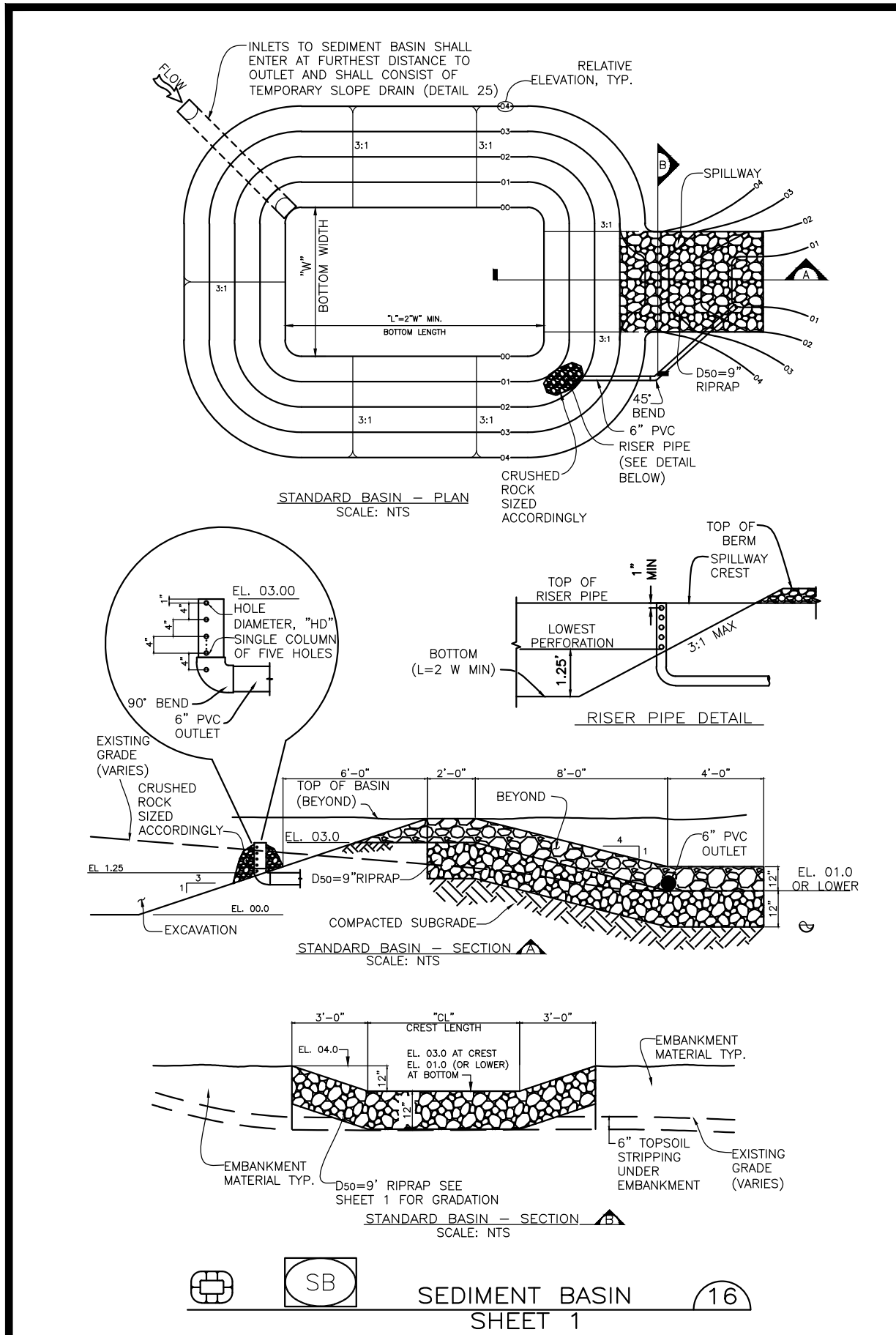
CHECK DAM INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATIONS OF CHECK DAMS.
 - CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
 - LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
- CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
- VL RIPRAP SHALL BE UTILIZED FOR CHECK DAMS.
- RIP RAP PAD SHALL BE TRENCHED INTO THE CHANNEL BANKS TO ADEQUATELY ANCHOR WITH CENTER OF THE CHECK DAM LOWER TO ALLOW FOR OVERTOPPING AT THE CREST.

CHECK DAM MAINTENANCE NOTES

- THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURE.
- SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
- CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEMSWA.
- WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.





SEEDING AND MULCHING - INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 - AREA OF SEEDING AND MULCHING.
 - TYPE OF SEED MIX.
2. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BIRNWEED, JOHNSON GRASS, KNAF WEED AND LEAFY SPURGE.
3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY, SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO SEMSWA UPON REQUEST.
4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE BELOW UNLESS OTHERWISE APPROVED BY SEMSWA.
5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE CONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE QUANTIFIED TO CONTRACTOR AND FORWARDED TO THE SEMSWA GESC INSPECTOR.
6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).
7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY SEMSWA.
8. ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). ALL DISTURBED AREAS SHALL BE LOOSENEED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.
9. SOIL IS TO BE THOROUGHLY LOOSENEED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE GENERALLY FREE OF ROCKS GREATER THAN 4 INCHES AND SOIL CLOSER GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENEED SHALL BE REJECTED.
10. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH. ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE AS LONG AS POSSIBLE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 3 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 2000 LB. OF STRAW PER ACRE.
11. IF THE PERMITTEE DEMONSTRATES TO SEMSWA THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.
12. WHEN SEEDING AND MULCHING IS USED TO STABILIZED DISTURBED AREAS, ALL DISTURBED AREAS WHICH ARE IN THE FINAL GRADE, SHALL REMAIN INACTIVE FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE REQUIRED TO BE STABILIZED WITHIN 14 DAYS OF THE COMPLETION OF THE GRADING ACTIVITIES. THIS MAY REQUIRED MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
13. MULCH SHALL BE APPLIED WITHIN 24 HOURS OF SEEDING.
14. TACKIFIER SHALL BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

SEEDING AND MULCHING - MAINTENANCE NOTES

1. SEEDED AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY UNTIL FINAL ACCEPTANCE IS ISSUED. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERSTAND AFTER THE FIRST GROWING SEASON FOR AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
 - 70% OF THE EXISTING/ PRE-CONSTRUCTION CONDITION.
 - FREE OF ERODED AREAS.
 - FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.
3. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY SEMSWA.

TEMPORARY DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
SMOOTH BROMEGRASS	LINCOLN	PICS	30	3.9
INTERMEDIATE WHEATGRASS	OWHE	PICS	30	4.5
PURBESCENT WHEATGRASS	LUNA	PICS	30	4.2
ANNUAL RYEGRASS	N/A	ACOB	10	0.8
TOTAL			100	13.4

NOTES: P=PERENNIAL
A=ANNUAL
W=INTRODUCED
C=COOL SEASON
F=FORMER
B=BUNCHGRASS

PERMANENT DRILL SEEDING - WETLAND SEED MIX¹

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
SLOUGH GRASS	BECKMANNIA SYZIGACHNE	COOL	20	1,150,000	0.5
CANADIAN REED GRASS	CALAMAGROSTIS CANADENSIS	COOL	20	2,270,000	0.2
TUFTED HAIR GRASS	DESCHAMPSIA CESPIITOSA	COOL	10	2,500,000	0.1
COMMON SPIKE RUSH	ELEOCHARIS PALUSTRIS	COOL	15	620,000	0.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.4
KNOTTED RUSH	JUNCUS NODOSUS	COOL	10	12,300,000	0.1
TORREY'S RUSH	JUNCUS TORREY	COOL	10	12,300,000	0.1
TOTAL			100		2 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 0" TO 6" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.

PERMANENT DRILL SEEDING³ - TRANSITION SEED MIX - WITHOUT FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	15	110,000	3.6
SAND DROPSOED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		12.4 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 6" TO 24" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
³ IF DESIRED, SHRUBS FROM THE WILLOW SHRUBLAND PLANT COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

PERMANENT DRILL SEEDING³ - TRANSITION SEED MIX - WITH FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	15	110,000	3.6
SAND DROPSOED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		12.4 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 6" TO 24" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
³ IF DESIRED, SHRUBS FROM THE WILLOW SHRUBLAND PLANT COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

PERMANENT DRILL SEEDING³ - TRANSITION SEED MIX - WITH FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
INDIAN BLANKET FLOWER	GALLARDIA ARISTATA	SUMMER-FALL	1	132,000	0.2
ROCKY MOUNTAIN IRIS	IRIS MISSOURIENSIS	SPRING-SUMMER	2	368,000	0.1
EVENING PRIMROSE	GENETHEIRA ELATA	SUMMER	2	1,300,000	0.1
GOLDEN BANNER	THERMOPSIS MONTANA	SPRING	2	15,000	3.5
MEXICAN HAT	RAEBERIA COLUMNIFERA	SUMMER-FALL	1	1,230,000	0.1
SAND DROPSOED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		14.4 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 6" TO 24" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
³ IF DESIRED, SHRUBS FROM THE WILLOW SHRUBLAND PLANT COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

PERMANENT DRILL SEEDING³ - UPLAND SEED³ MIX - WITHOUT FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
BIG BLUESTEM	ANDROPOGON GERARDI	WARM	10	130,000	2.0
SIDEOLTS GRAMA	BOUTELOUA CURTIPENDULA	WARM	10	191,000	1.4
BLUE GRAMA	BOUTELOUA GRACILIS	WARM	10	825,000	0.3
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	10	115,000	2.3
THICKSPIKE WHEATGRASS	ELYMUS LANCEOLATUS SPP. LANCEOLATUS	COOL	5	154,000	0.8
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	5	156,000	0.8
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
NEEDLE AND THREAD	HESPEROSTIPHA COMATA	COOL	10	115,000	2.3
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	10	110,000	2.4
INDIAN GRASS	SORGHASTRUM NUTANS	WARM	10	170,000	1.5
SAND DROPSOED	SPOROBOLUS CRYPTANDRUS	WARM	10	5,298,000	0.1
TOTAL			100		15.5 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 24" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
³ IF DESIRED, TREES AND SHRUBS FROM THE COTTONWOOD SHRUB WOODLAND COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

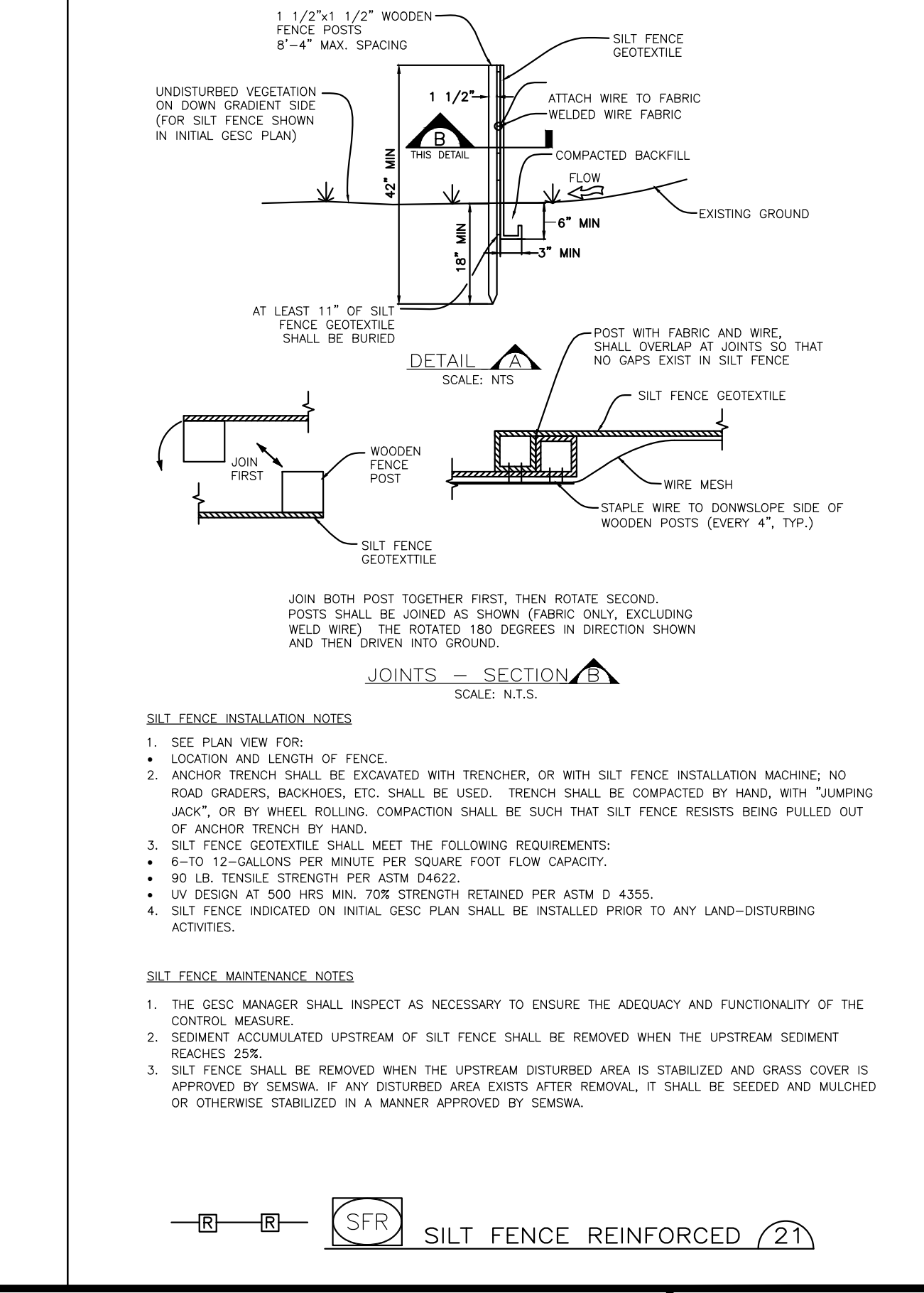
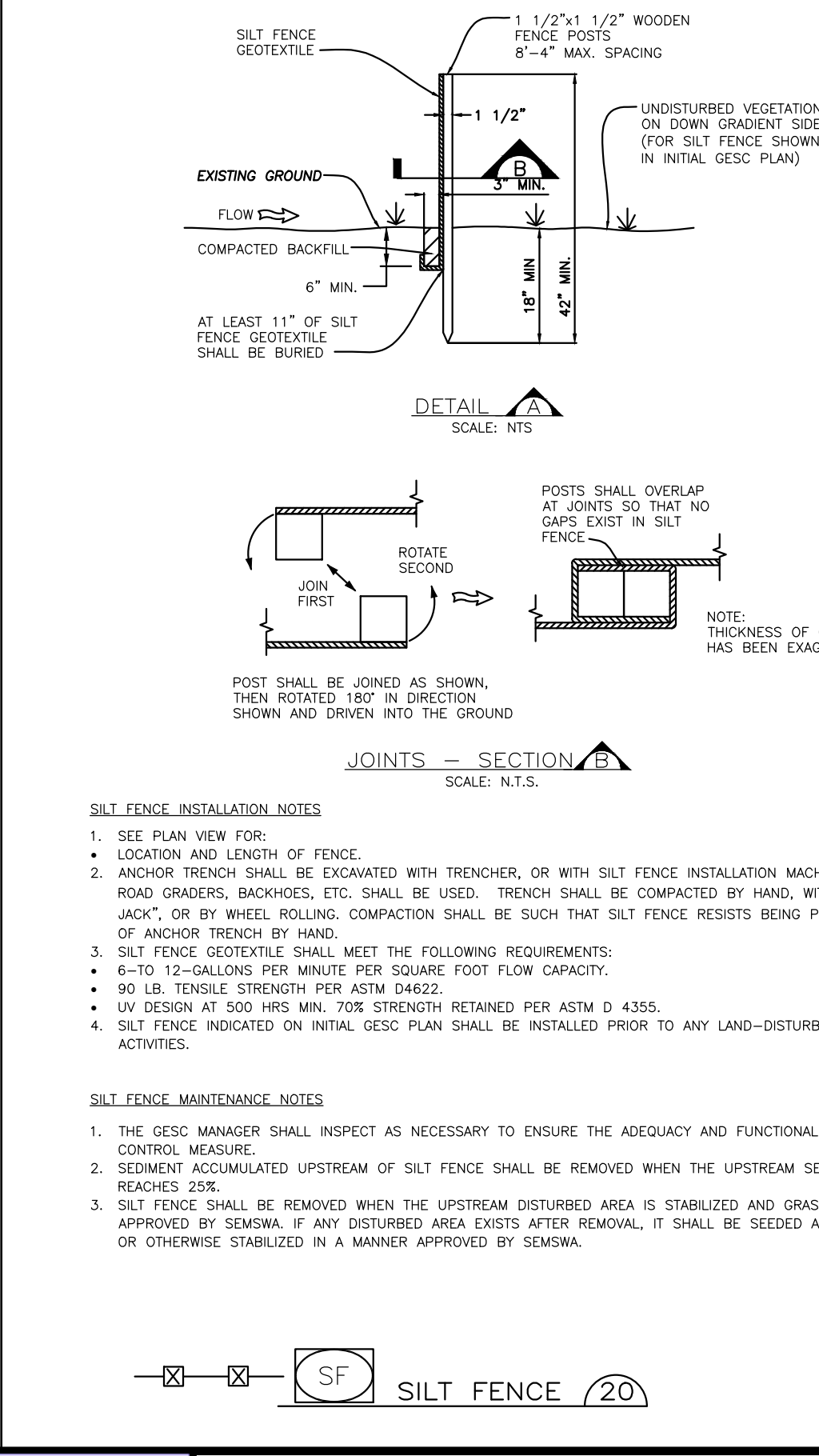
UPLAND SEED MIX - WITH FORBS¹³

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS ² /AC
BIG BLUESTEM	ANDROPOGON GERARDI	WARM	8	130,000	1.6
SIDEOLTS GRAMA	BOUTELOUA CURTIPENDULA	WARM	8	191,000	1.1
BLUE GRAMA	BOUTELOUA GRACILIS	WARM	8	825,000	0.3
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	8	115,000	1.8
THICKSPIKE WHEATGRASS	ELYMUS LANCEOLATUS SPP. LANCEOLATUS	COOL	5	154,000	0.8
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	5	156,000	0.8
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
NEEDLE AND THREAD	HESPEROSTIPHA COMATA	COOL	8	115,000	1.8
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	10	110,000	2.4
INDIAN GRASS	SORGHASTRUM NUTANS	WARM	10	170,000	1.5
SAND DROPSOED	SPOROBOLUS CRYPTANDRUS	WARM	10	5,298,000	0.1
TOTAL			100		15 LBS PLS ² /AC

¹ TO BE INSTALLED AT APPROXIMATELY 24" ABOVE WATER LINE.
² PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
³ IF DESIRED, TREES AND SHRUBS FROM THE COTTONWOOD SHRUB WOODLAND COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

COMMON OR TRADE NAME

COMMON OR TRADE NAME	SCIENTIFIC NAME	LBS PLS/AC
OPTION 1: OATS	AVENA SATIVA	60 TO 90
OPTION 2: QUICKGRASS	TRITICUM AESTIVUM X SECALE CEREALE	10 TO 40
OPTION 3: REGREEN	TRITICUM AESTIVUM X ELYTRIGRA ELONGATA	10 TO 40



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GRADING EROSION AND SEDIMENT CONTROL
STANDARD NOTES AND DETAILS
REVISED FEBRUARY 2023

GESC SHEET 3 OF 4

