



MHHFD

MILE HIGH FLOOD DISTRICT

The Engineer's Role in Section 404 Permitting

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Lunch and Learn – April 24, 2024

Presentation Outline

- Regulatory Milestones
- Determining Project Purpose and Need
- Alternatives Analysis
- Avoidance and Minimization
- Submittal Figures
- How to Speak Regulator-ese



Clean Water Act – Section 404

- Establishes a Regulatory Program
 - Regulated Action – Discharge of dredged or fill material
 - Regulated Area – WOTUS and Adjacent Wetlands



Regulatory Milestones in the Design Schedule

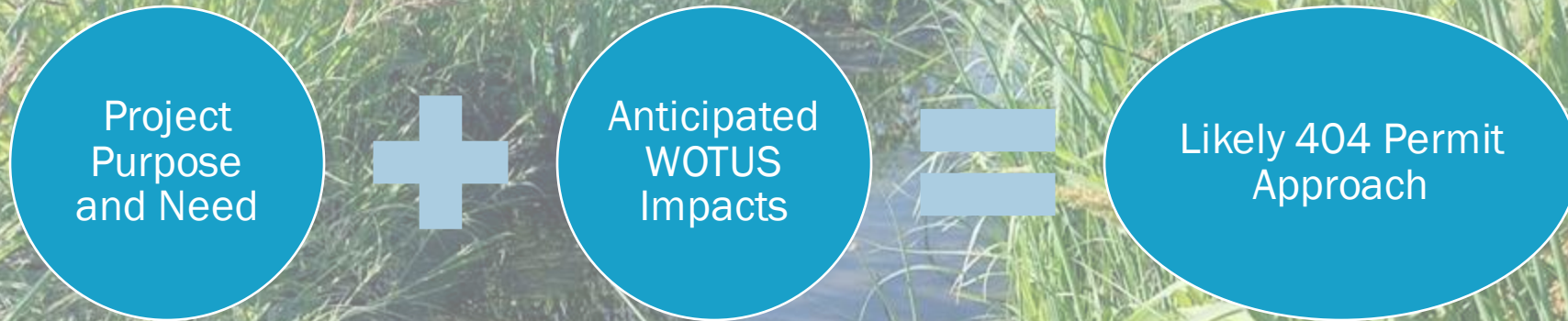


Project Kickoff

- **Regulatory Milestone:** Identify regulated resources
- **Engineer's Role:** Avoid and minimize high quality or sensitive areas



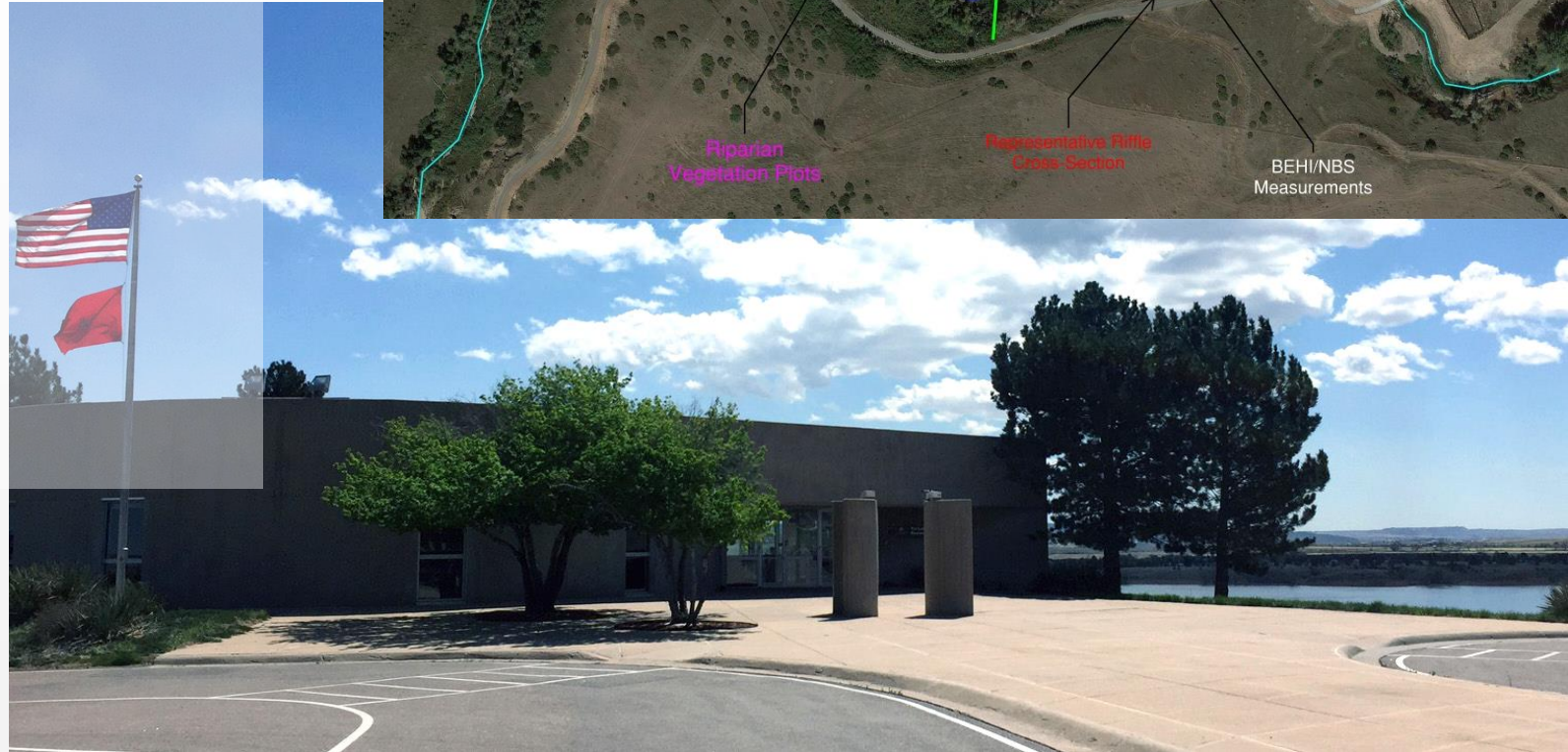
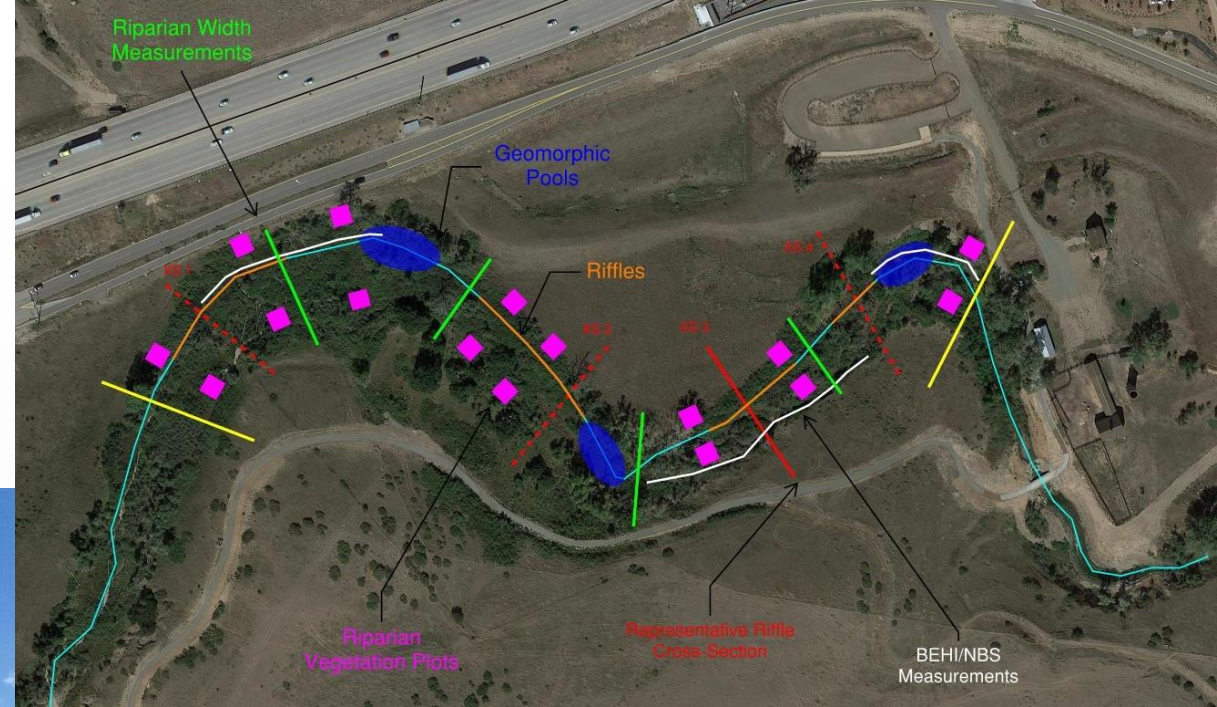
Conceptual Design



- **Regulatory Milestone:** Determine the likely 404 Permit
- **Engineer's Role:** Assist regulatory specialist in determining the Project Purpose and Need and calculate preliminary WOTUS impacts

30 Percent Design

- **Regulatory Milestone:** Meet with USACE on 404 permitting path and CSQT
- **Engineer's Role:**
 - Participate in pre-application meeting
 - Collect CSQT data (if needed)



60 Percent Design & Final Design

- **Regulatory Milestone:** Submit 404 Permit Application
- **Engineer's Role:**
 - Finalize CSQT Scoring
 - Review Application
 - Confirm submitted impacts, mitigation, and CSQT scoring at remaining design stages and during construction



Determining Project Purpose and Need



Purpose and Need Statement

- Purpose: What problem is being solved? The “Why?”
 - Meeting demand for housing
 - Flood risk mitigation
 - Stream restoration
- Need: What makes the project necessary?
 - Profit for shareholders
 - Homes are flooded during 10-year event
 - Increased runoff
- P&N is not a description of what is being done (building houses, enlarging a culvert, installing riffles). That is an alternative.

Good P&N Statements

- The need can be demonstrated by facts and data
 - Population growth of 10% per year, housing price increase of 20% per year, days on market down
 - Existing culvert capacity 200 CFS, 10-year event 500 CFS
 - Depth of incision, bank to height ratio, sediment deposition, vegetation loss
- Not so narrowly written that it allows only the preferred alternative
- The project purpose and need drives the process for alternatives consideration and what is “practicable”
- Collaborate with your compliance specialist on writing the P&N statement

Alternatives Analysis



LEDPA

- Section 404 (b)(1) – only the least environmentally damaging practicable alternative that meets the P&N will be permitted
 - Practicable in light of cost, logistics, and technology
- Must demonstrate impacts to WOTUS are unavoidable

Reasonable Range of Alternatives

- No Action Alternative
 - No project
 - No federal action/No permit required
- Look beyond the obvious (ex. Address change in hydrology)
 - Off site detention to reduce runoff
 - Additional culverts in uplands to increase capacity
 - Pull back overbanks to increase floodplain capacity
 - Combination of elements

Avoidance and Minimization



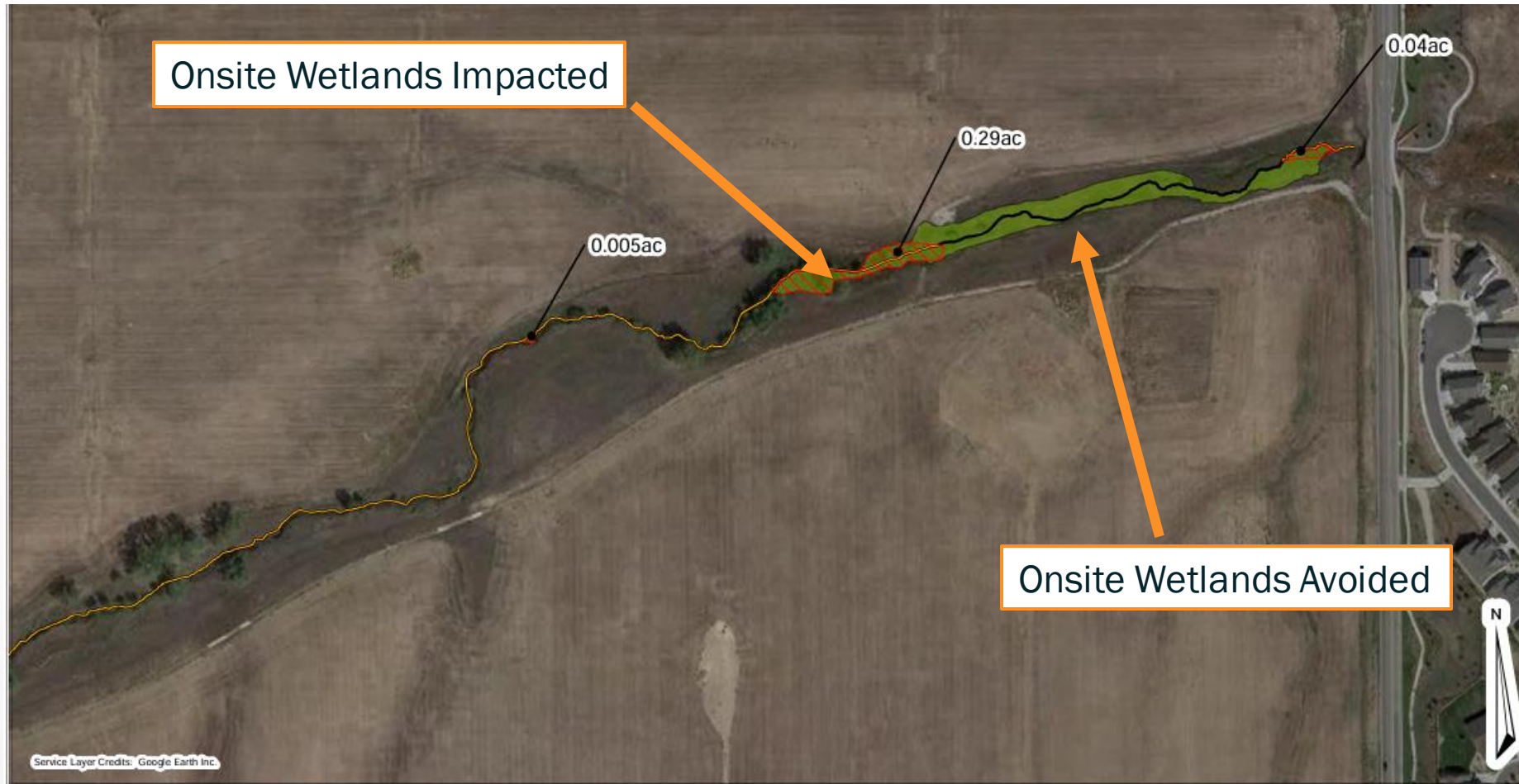


Hierarchy: Avoid, Minimize, then Mitigate



- 33 CFR 325.1(d)(7): *For activities involving discharges of dredged or fill material into waters of the United States, the application must include a statement describing how impacts to waters of the United States are to be avoided and minimized.*
- 33 CFR 332.1(c)(2): *...the district engineer will issue an individual section 404 permit only upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines.*



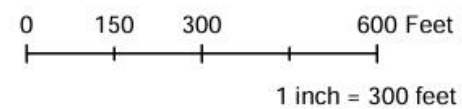


Onsite Wetlands Impacted

Onsite Wetlands Avoided

TODD CREEK QUEBEC TO E-470

- Todd Creek Impacts - 0.24 acre, 4,956 LF
- Wetland Impacts - 0.33 acre
- Wetlands - 1.64 acres



**FIGURE 3B
IMPACTED WETLANDS
AND WATERS OF THE US**



Thornton, Adams County
Map Date: 10/1/2021

Avoidance and Minimization Benefits

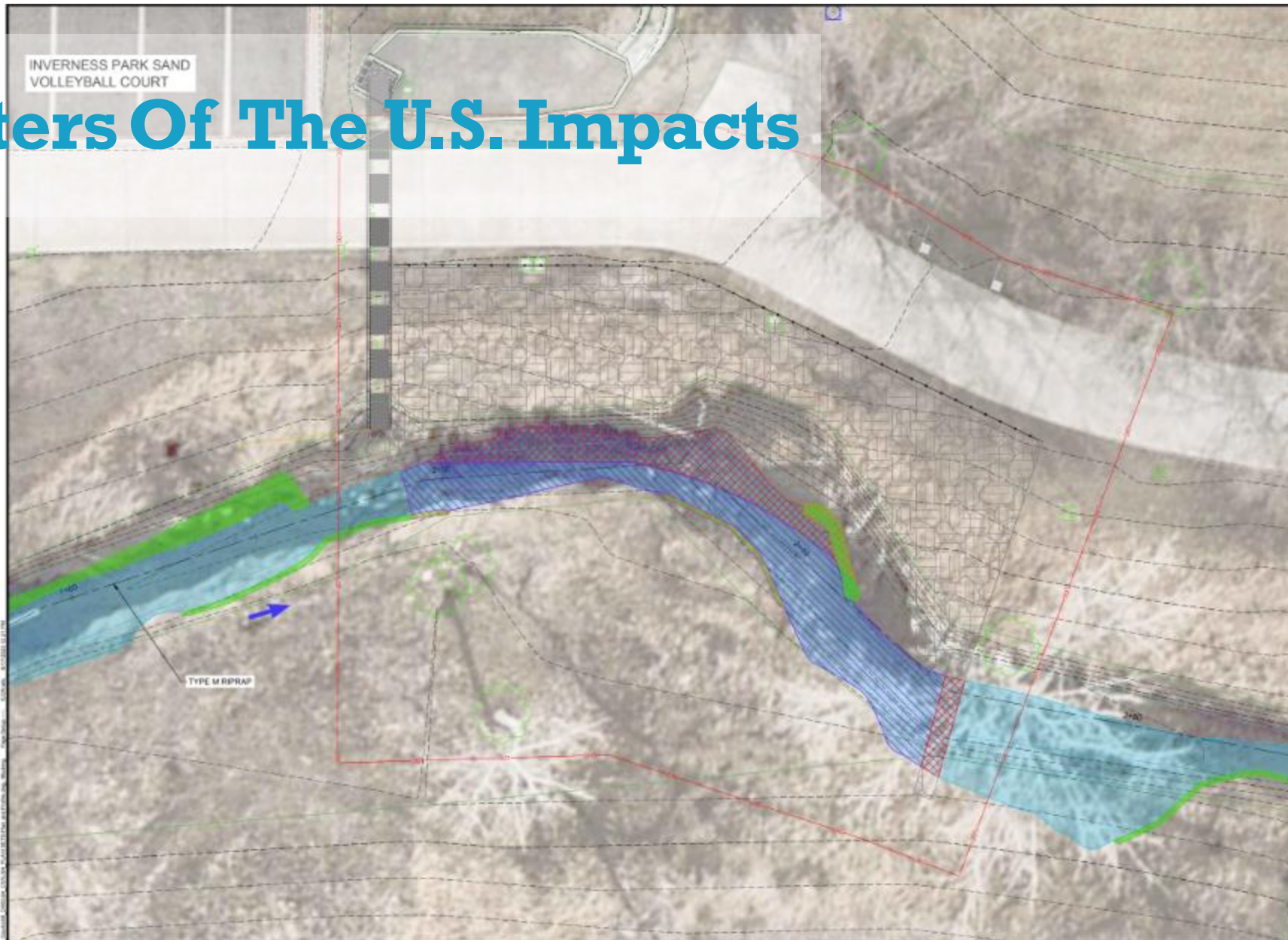
- Shows the USACE that the project will only impact what is necessary to achieve the Purpose and Need
- May reduce impacts to fit within a Nationwide or Regional General Permit, as opposed to an Individual (Standard) Permit
- Avoid or reduce Compensatory Mitigation requirements



Preparing Figures for USACE Submittal



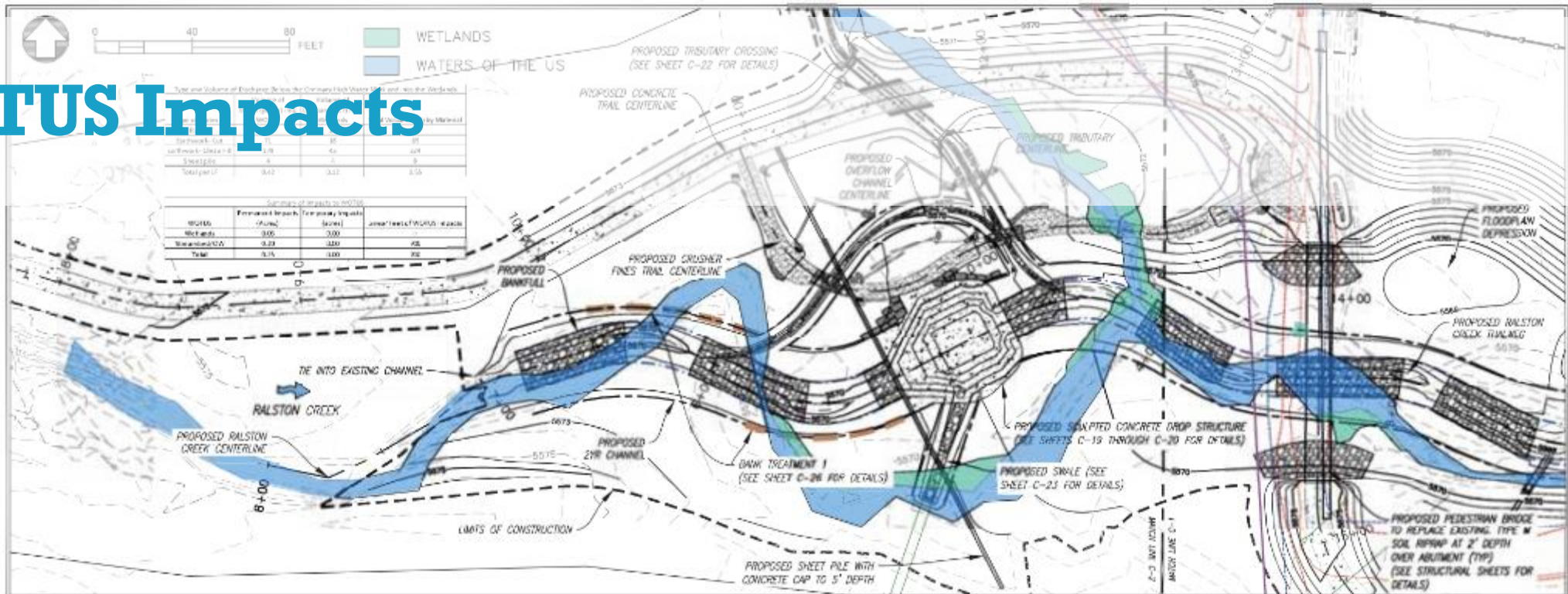
Waters Of The U.S. Impacts



- NOTES**
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF WORK BEFORE COMMENCING CONSTRUCTION AND TO COORDINATE CONSTRUCTION SCHEDULES WITH UTILITY OWNERS.
 - FILL WITHIN DWM = 0.87 CYLF
 - LDC = 0.11 AC

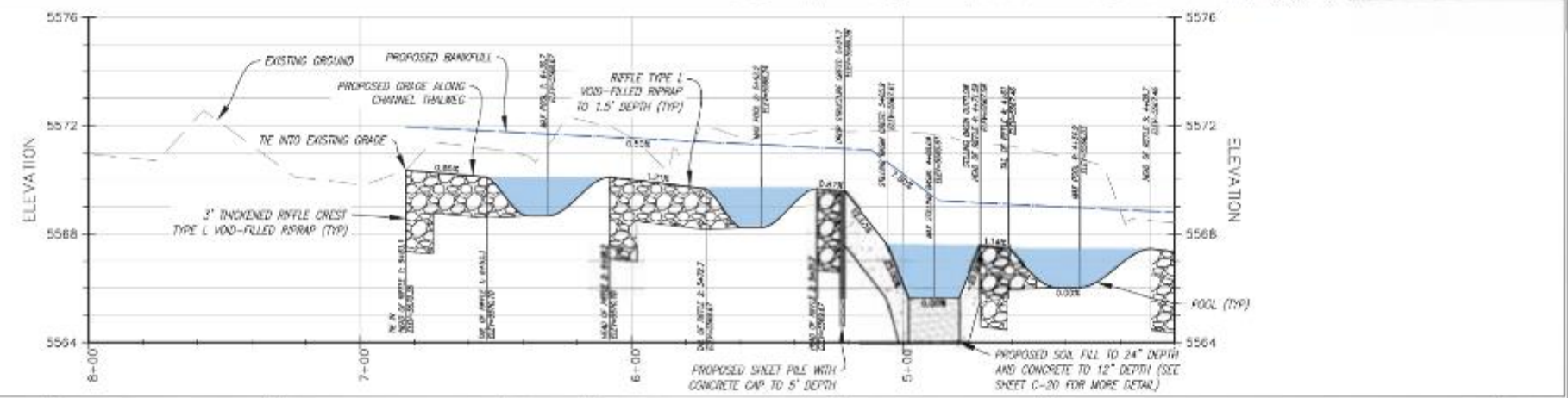
NO.	DATE	ISSUES	APP.	DRAWN BY: ML DESIGNED BY: ML APPROVED BY: AB	PREPARED FOR: 	PREPARED BY: 7000 S. Yosemite Street, Suite 100 Centennial, CO 80112 Phone: (303) 221-0800	COTTONWOOD CREEK INVERNESS INVERNESS PARK SAND VOLLEYBALL COURT WOTUS IMPACTS	DATE: AUG 2023 SHEET: 1 OF 2
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WOTUS Impacts



Summary of Impacts to WOTUS

WOTUS	Removal (Acres)	For priority impacts (Acres)	Removal to WOTUS (Acres)
Wetlands	0.05	0.00	0.05
Waters of the US	0.23	0.00	0.23
Total	0.28	0.00	0.28



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REVISION DESCRIPTION	BY	DATE											
<p>RALSTON CREEK AT CROKE CANAL</p>			<p>The Engineer's Role in Section 404 Permitting</p>										

Floodplain Impact Figure

- 33 CFR 320.4(l)(3): *In accordance with Executive Order 11988, the district engineer should **avoid authorizing floodplain developments whenever practicable alternatives exist outside the floodplain.** If there are no such practicable alternatives, the district engineer shall consider, as a means of mitigation, alternatives within the floodplain which will lessen any significant adverse impact to the floodplain.*
- Executive Order 11988: *By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance.....**to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative...***



I HEREBY CERTIFY, THAT THIS WORKMAP OF FIRST CREEK WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF AURORA.

LEGEND

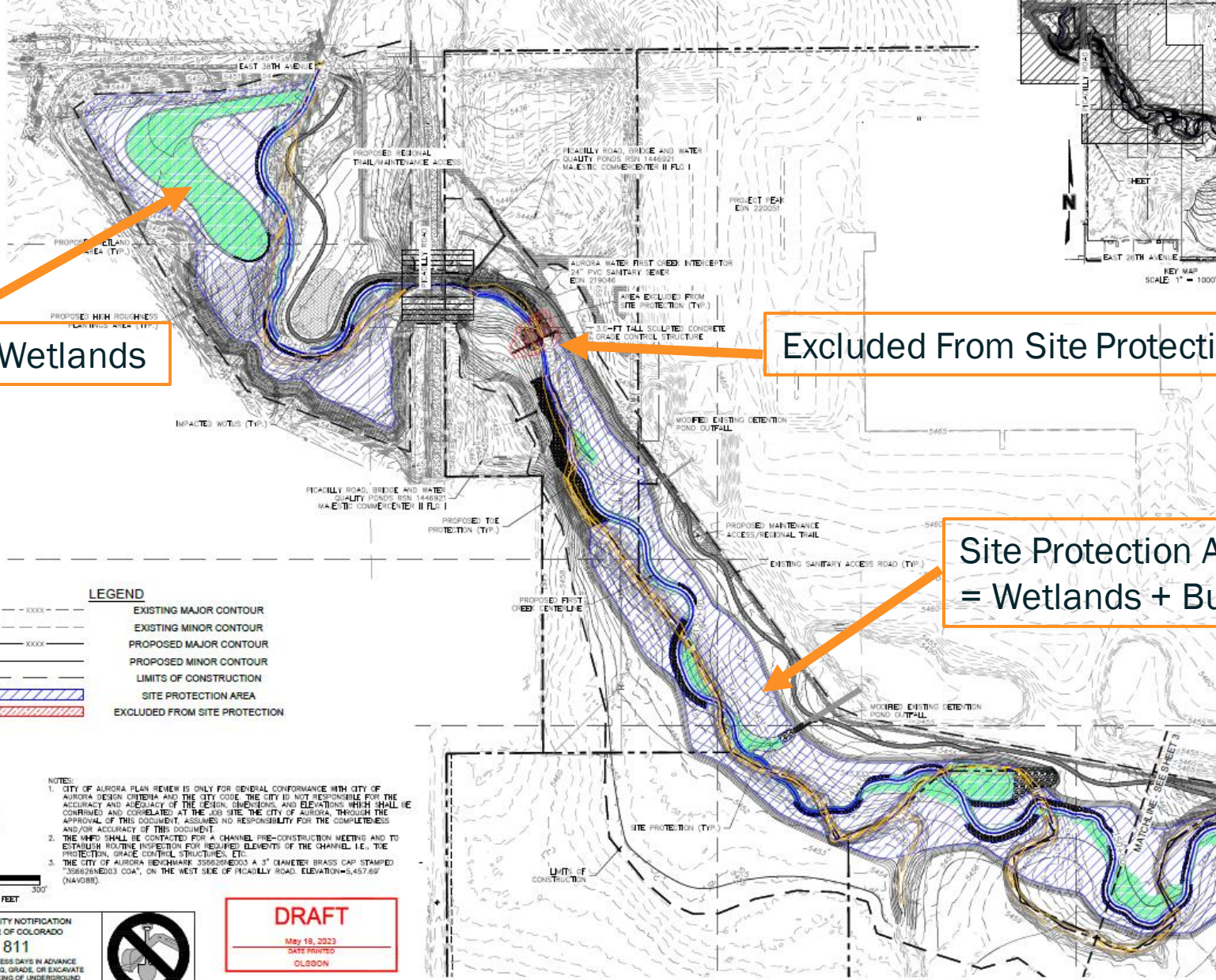
	PRE-PROJECT 100-YEAR FLOODPLAIN
	POST-PROJECT 100-YEAR FLOODPLAIN
	PRE-PROJECT TOP OF BANK
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR

- NOTES:**
1. CITY OF AURORA PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH CD CRITERIA AND THE CITY CODE. THE CITY IS NOT RESPONSIBLE FOR THE ACCURACY OF DESIGN DIMENSIONS AND ELEVATIONS WHICH SHALL BE CONFIRMED AND CORRECTED BY THE CITY OF AURORA, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO LIABILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
 2. THE MHFD SHALL BE CONTACTED FOR A CHANNEL PRE-CONSTRUCTION MEETING INSPECTION FOR REQUIRED ELEMENTS OF THE CHANNEL, I.E., TOE PROTECTION, STRUCTURES, ETC.
 3. THE CITY OF AURORA BENCHMARK 356626E003 & 3" DIAMETER BRASS CAP IS ON THE WEST SIDE OF PICADILLY ROAD, ELEVATION=5,457.69' (NAVD88).
 4. PRE-PROJECT FLOODPLAIN INCLUDES EFFECTIVE FLOODPLAIN AND FLOODPLAIN CLOSER CASE NUMBER 20-08-009BR WORKMAP
 5. PRE-PROJECT 100-YEAR FLOODPLAIN AREA = 77.0 AC
 POST-PROJECT 100-YEAR FLOODPLAIN AREA = 78.5 AC
 PRE-PROJECT TOP OF BANK AREA = 22.7 AC

Site Protection Instrument Figure

- 33 CFR 332.7(a): *The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms, as appropriate.*



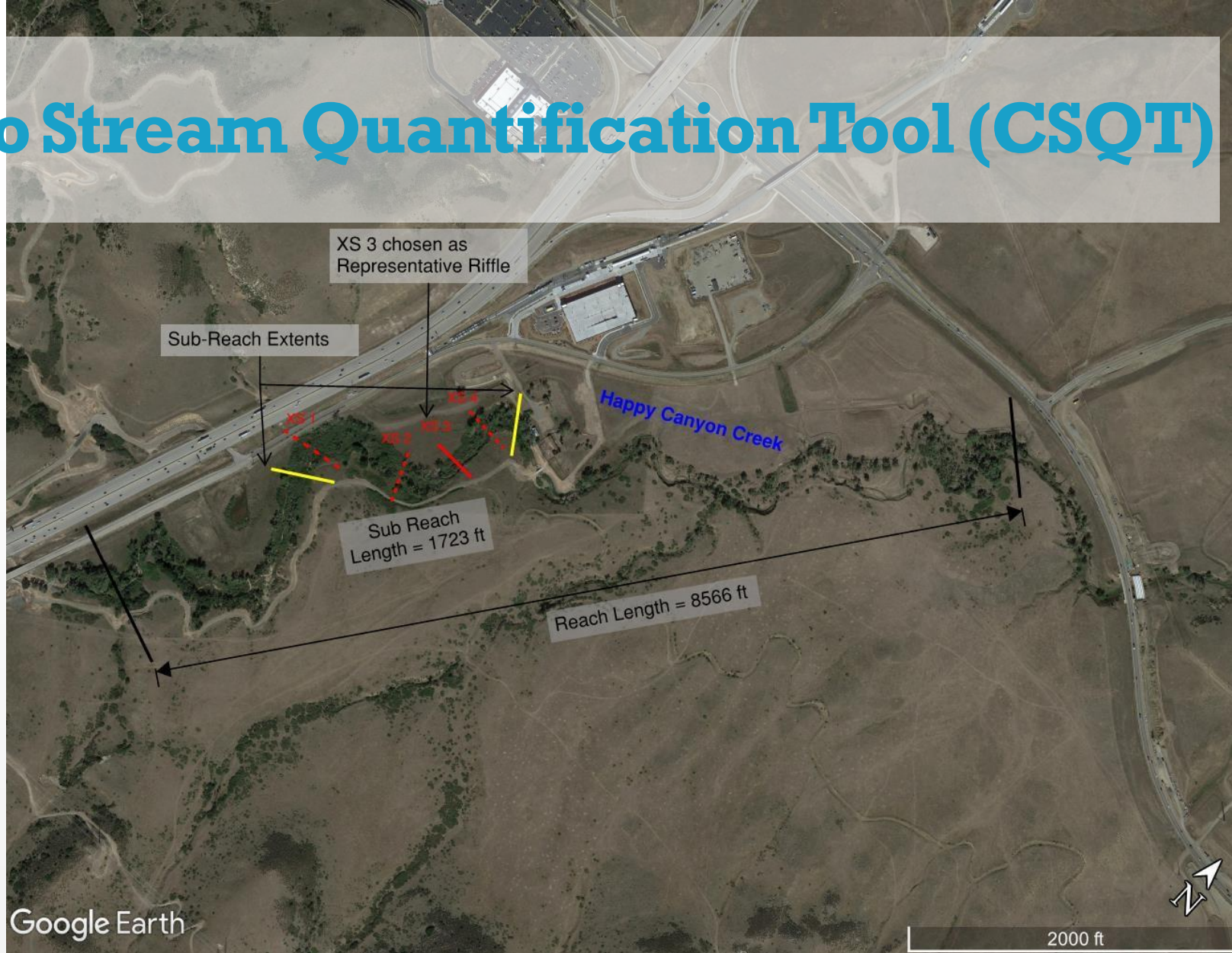


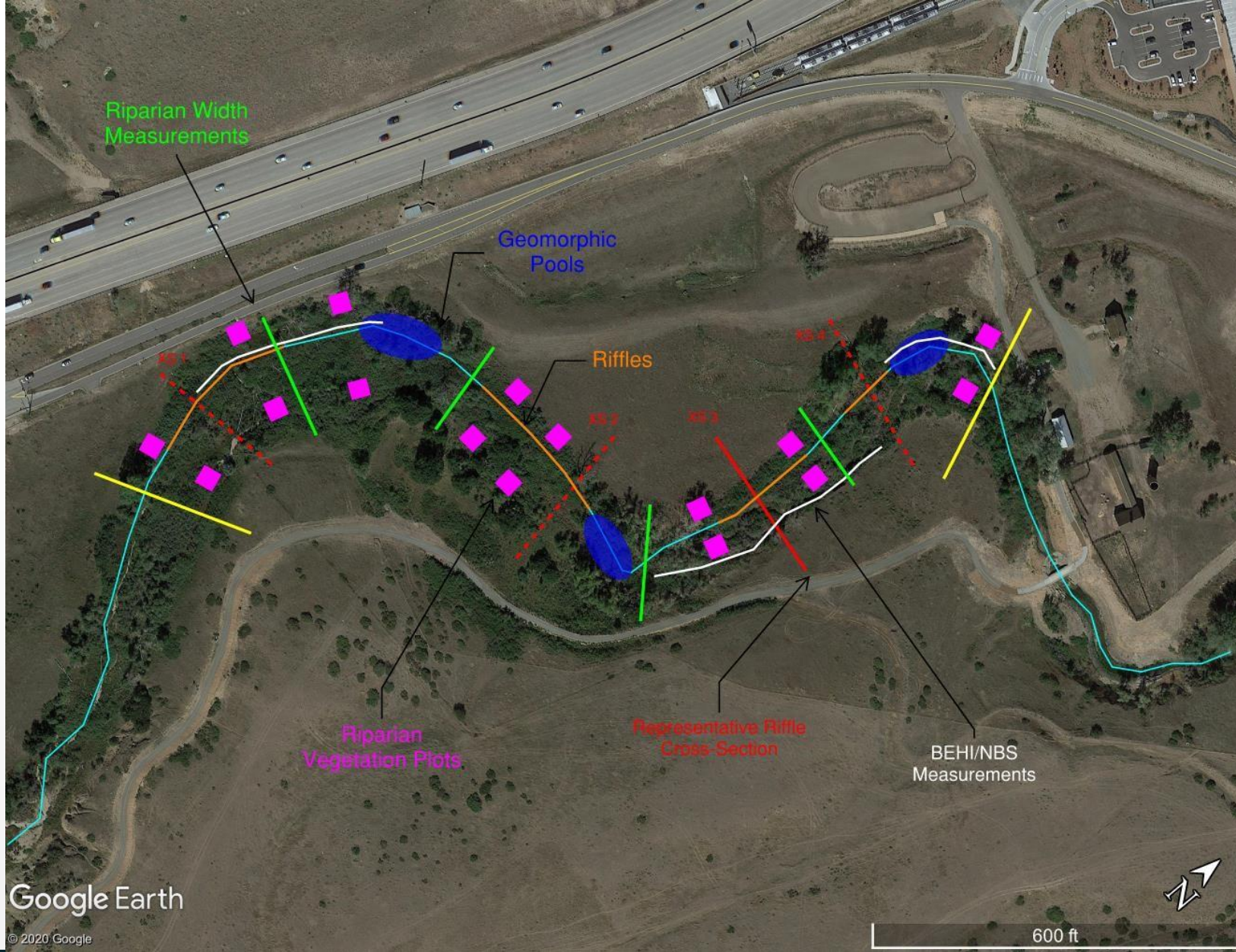
Proposed Mitigation Wetlands

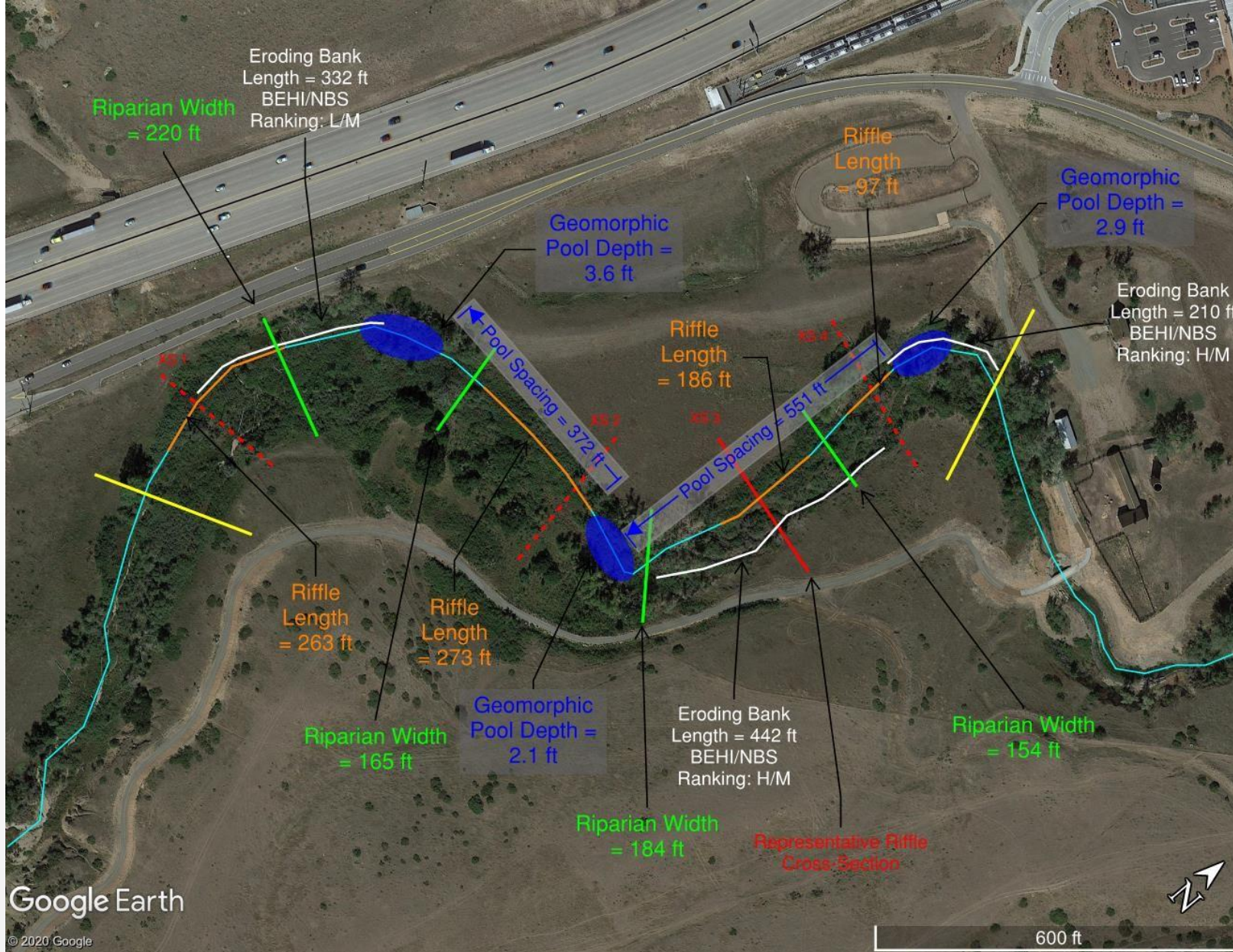
Excluded From Site Protection

Site Protection Area = Wetlands + Buffer

Colorado Stream Quantification Tool (CSQT)







How to Speak Regulator-ese



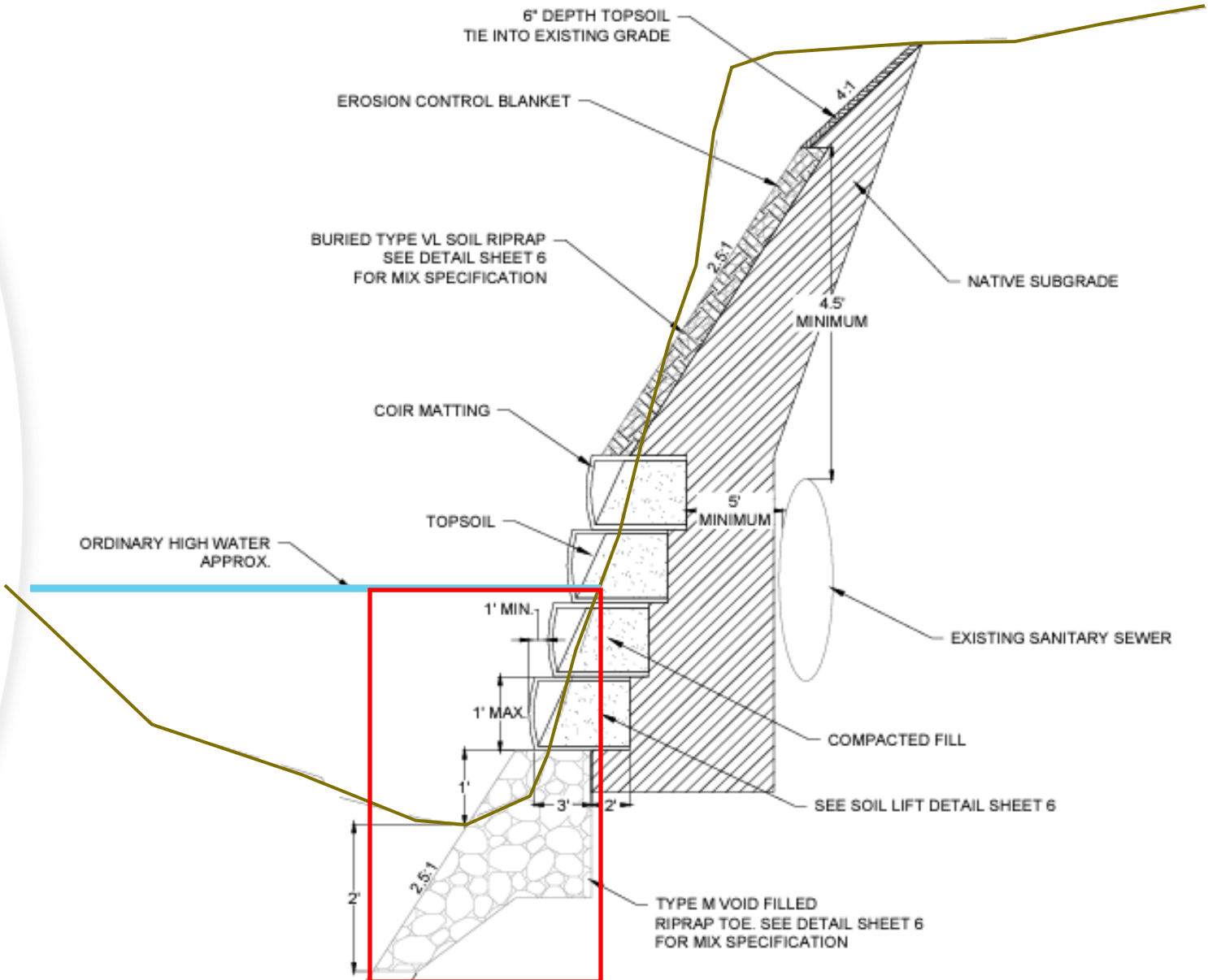
404 Vocabulary

- Discharge of Fill Material



404 Vocabulary

Fill Below the OHWM



- NOTES:
1. COIR MATTING
 2. EROSION CONTROL

404 Vocabulary

- Temporary Impacts - Elevation returned to preexisting grade
 - Access across streams
 - Water diversion
 - Utility line installation (if done right)
 - Sediment control measures

- Temporary fill **MUST** be removed

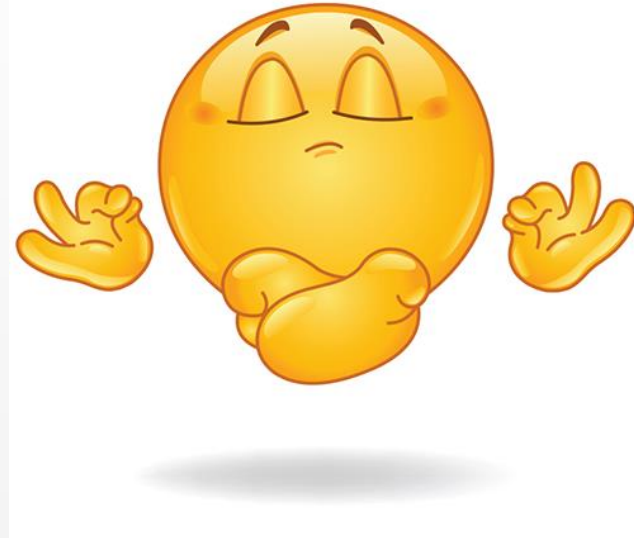
404 Vocabulary

Authorization versus Permit

Environmental Compliance Tips

- Sooner is Better Than Later
- Do Not Let Permits Expire
- Equity is in Concrete
- Resources Can Be Dynamic
- Construct What You Permitted
- Build Credibility with Agencies
- Follow Through on Commitments
- Include Permitting and Compliance in Schedule
- Base Decisions on Best Information Available

It's Not An Added Burden, It's Just Another Part Of The Work!



Questions and Venting

