

Construction to Post Construction: In the Field & on Permix



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Why are we here?

Strong need for **planning** & **phasing** between active construction & PCSMP implementation

How do we get from here...

...to here?



What we are talking about...

- Improve field implementation of Post-Construction BMPs
- What to expect on Permex when dealing with construction & Post-Construction BMP's



Planning

- Prepare PCSMP before install
- PCSMP BMP's are **NOT** construction BMP's
- Will construction BMP's **become** post construction BMP's?
- Permanent riser installed with sed basin must meet both SWPPP & PCSMP design criteria
- Any easements required from adjacent property?



Planning Considerations

- How will stormwater enter the BMP?
- Access for maintenance
- Keep them offline until ready?
- Discharge points must have erosion mitigation
- Phasing & management during construction...



Phasing Example: Sediment Basin to Bioretention



- Contributing area is stable
 - Stable means 70% cover at any site location (Hula Hoop Rule)
- Remove the silt in the basin & any storm pipe
 - Where will the silt be disposed?
- Modify riser structure
- Inlet & overflow protection
- Condition soil as needed
- Install underdrain & soil mix
- Install plants

Permix

Web-based system to obtain & manage Grading Permits, PCSMP for the Papillion Creek Watershed Partnership (PCWP)

CITY OF Omaha

permix
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Log out

**City of Omaha Public Works - EQCD
Permix Home Page**

Andy,
Welcome to your Permix home page. From here you can manage your company company, your projects and permitting processes. Click on a button below to enter that module. Click on the information symbol to learn more about that that button does.
We have detected you also have an Internal (City) User login. [CLICK HERE](#) to visit your City home page.

New Project

Manage Users

Manage Projects

PCSMP Permit Application

Linear Underground Notification

Public Improvement Application

Grading Permit Application

Permix – helpful tips

- PCSMP must be complete to close grading permit
 - SWPPP inspections continue until permit closed
- Do not put PCSMP BMPs on SWPPP map
- Submit modification prior to converting any SWPPP BMP to a PCSMP BMP
- Visit site & ensure proper installation & function prior to certification
- Submit accurate as-built plans
 - Annual inspections of PCSMP BMPs by City
- PCSMP BMPs stay with the property & owner



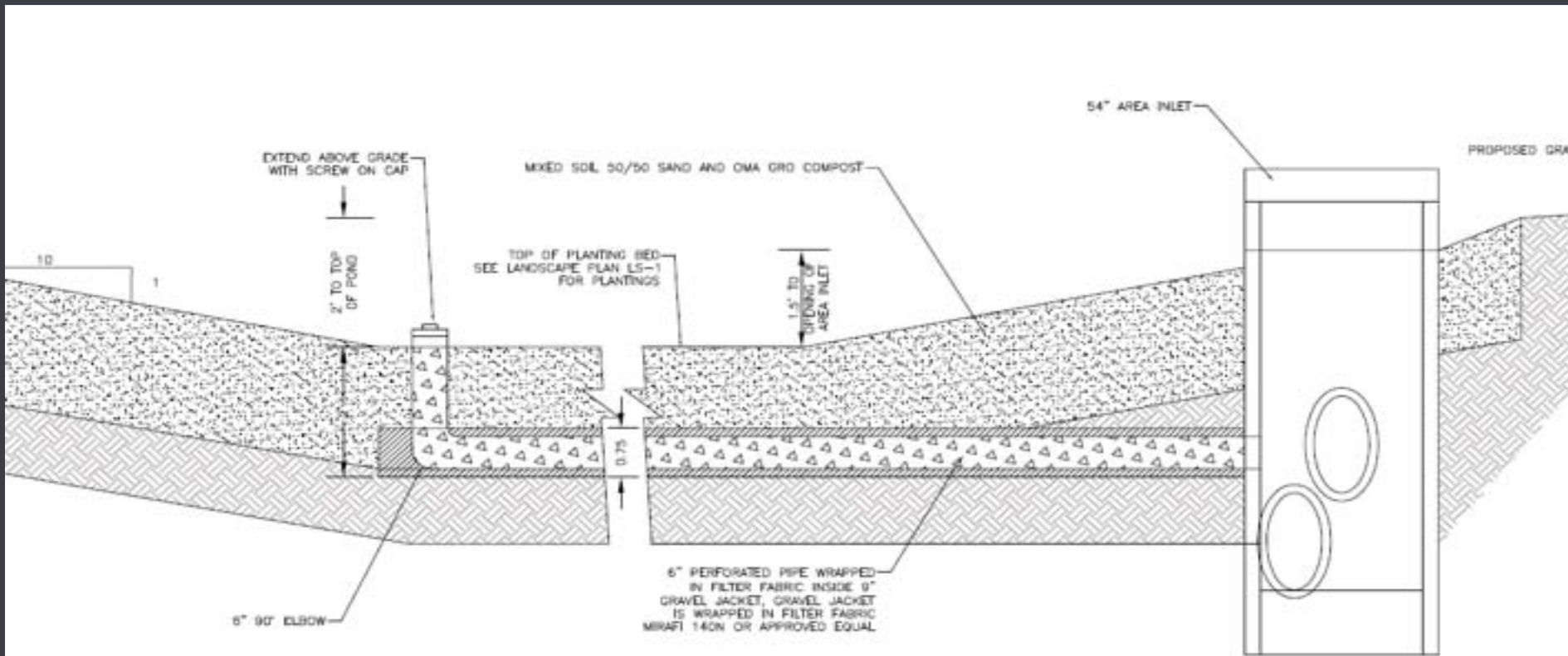


SOIA Lift Station Bioretention

A learning experience



Original bioretention detail



BIO-RETENTION POND TYPICAL SECTION

NOT TO SCALE

Grading to elevation complete &....

11/21/12



Underdrain installed



Recommendations

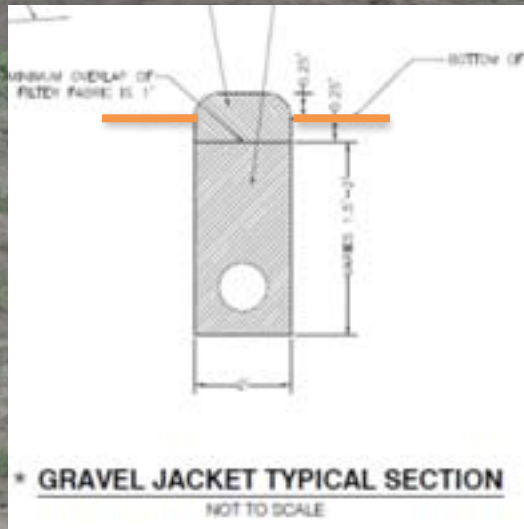
- Don't install underdrain until its time
- Stage to avoid compaction
- Don't excavate to finish elevation, leave 6"+
- Remove compaction

“Vegetation” establishing

6/18/13



06/16/2013 18:10



Note: soil condition prior to underdrain – easier & prone to fewer mistakes

Quality Control is key to a successful PCSMP BMP
Is this a **washed** aggregate?



Structure built...any issues?

7/16/13



- Not level, cell or flat bottom
- Large clods throughout
- Timeline for rest of work?
- Infiltration cell unprotected

07/16/2013 13:08



- Gaps in wattles
- Seed & matting sparse
- Infiltration cell unprotected
- Sediment remains along cell
- Dry weather delays plantings

Waiting & silting in

10/4/13



2013 10 4 12:00

Work begins again...

10/16/13



Items covered w/contractor at start of work:

- Need level bottom & infiltration cell
- Remove sediment from infiltration cell
- Protection of infiltration cell if not completed
- Incorporate 2" of compost across system

2013.10.16 15:19

Shrubs installed though...

10/24/13



Remaining items covered w/contractor:

- Need level bottom & infiltration cell
- Remove sediment from infiltration cell
- Protection of infiltration cell

Mulch raked back from infiltration cell

4/9/14



04/09/2014 13:15

- Sub-contractor indicated work would be completed by 1st week in May

Morning of, learn contractor on site

5/28/14



- Sub of sub-contractor was not aware of punch list; there just to plant the plants
- Went over all issues; voiced expectations

Day after, sub “It’s complete”

5/29/14



- Infiltration cell rock w/sediment remains
- Infiltration cell not level & now level w/adjacent grade
- No mulch & irrigation splashing on bare soil
- Inconsistent planting on edges & no bed edge defined
- No repair of rill erosion

Mulch wattles float & issues remain

6/4/14



06/04/2014 10:00

Rock starts to come out on a Friday...

7/3/14



07/03/2014 13:22

Washing the rock by hand to reuse it

7/3/14



07/03/2014 13:47

No work over weekend & rain event...

7/6/14



07/06/2014 18:01

Now cleaning more due to sediment by hand & through the plants

7/9/14



Finished approx. 20 months later

7/11/14



07/11/2014 15:57

Infiltration cell level & mounded...

7/11/14



07/11/2014 15:59

1st major test: mulch moved but that's expected
& it is functioning 8/7/14



Plants doing well, drains well

9/9/14



Construction to Post-Construction



Thank You!
Questions?

Omahastormwater.org

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- City of Omaha Stormwater Program