Attachment 2

USGS EAA
Nomination & Project Information Form

All of the following fields must be completed. Only nominations for which there is a completed nomination form will be eligible for consideration.

Date: March 13, 2015
Title of Nomination: Storm Water Management National Center
Nominee Name: Douglas Channell and John Czarapata
Location Headquarters, OMS, FMP, D&C Section and National Capital Region, GSA Public Buildings Service, Potomac Service Center
Address: 12201 Sunrise Valley Drive M/S 273 Reston, Va. 20192
Phone: 703 648-5133 and 202 260-4272
Email: dchannell@usgs.gov and john.czarapata@gsa.gov
Project Date(s): August 2013 through September 2014

Submitter Information (Must be a USGS employee)

- **Name: Kenneth Thayer**
- **Address: 12201 Sunrise Valley Drive M/S 273**
- **Phone: 703 648-7517**
- **Email: kthayer@usgs.gov**

Award Category (Select one):

- o Sustainability Hero
- o Green Innovation
- o Lean, Clean, and Green
- o Good Neighbor

X Green Dream Team

- o Building the Future
- o Environmental Stewardship
- o Climate Champion

Nominee Category (Select one):

- o Partner

Abstract (250 character max) – For all award categories, provide a brief synopsis of the project.

Through a joint effort between USGS and GSA the recently completed road replacement project at the National Center in Reston, Va. incorporated a storm water management plan that diverts over 95% of any rain storm up to 2 to 3 inches into the soil rather than to the streams and rivers. The original design and award had no such plan and between USGS and GSA environmental branches getting involved, the award and work was stopped in 2011 as a redesign was accomplished to meet the Energy Independence and Security Act of 2007 (EISA). The original design was completed before and federal requirements where needed for storm water runoff. The US Geological Survey Drive is approximately a half mile long and two lanes, one in each direction, that not only accommodates the employees of the National Center but also is utilized by many of the community as a connection to two main road in Sunrise Valley Drive and Reston Parkway. So it is heavily traveled by Reston Association, employees, and Fairfax County Connector Buses. The original road had almost no drainage system so any major rain storm could see a flow of water about a foot wide rolling down the side for the street looking for a drain.

Please continue to the next page

Project Description (5000 character max) For all award categories except Sustainability Hero, describe the project including how the project was conceived and implemented, what strategies and technologies were deployed, who was involved, and an appropriate project timeline. Explain clearly and concisely how these accomplishments or actions have contributed to improvement or protection of the environment. **For the Sustainability Hero category only, describe the work for which the individual is being recognized.**

The USGS National Center in Reston Va. is 111 acre property that is GSA owned but by Delegation of Authority through Department of Interior is maintained by USGS personnel. The roadway was constructed approx. 50 years ago to serve as a private road for use by USGS employees and visitors. However, this roadway has been used as a thrustreet for travelers intending to avoid congestion relating to the signalized intersection at Sunrise Valley Drive and Reston Parkway. Also, the Fairfax public bus transit system has a bus stop located along USGS Drive which is used frequently during peak hours.

GSA through a road condition assessment report done in 2009, determined a design for full road replacement was necessary given the current deterioration and age of the existing road. The new design completed utilized curb and gutter the full length of the road allowing all water flow to go down storm drains connect to the retention pond and then sending it to the streams and rivers. This design was sent through GSA contracting and awarded as a $1.5 million project. In 2011, the general contractor started setting up his protection areas of the project when USGS and GSA environmental offices starting checking into the project for environmental impact to the area. GSA, Suzy Hill, stopped the project and working with USGS, Larry Herrington, determined a redesign was needed on this project to meet stormwater runoff on this project. Although the original design was acceptable to award as a project almost 100% of the storm water run off would end up in the streams and rivers.

Working together with engineers a new design was approved by USGS and GSA that through infiltration trenches and piping would retain over 95% of storm water runoff back into the ground area. Attached are detail drawings showing typical views of the infiltration trench design that was utilized and installed. The typical trench is about 4 foot deep and wide with a layer of sand, a layer of clean rock, fabric material, and filter gravel.

Also, installed where three areas each 16 foot wide by 26 foot long of 5 foot perforated pipe to allow heavy rains to fill as a holding area to allow the water to migrate back into the ground. If the storm was too heavy the system is connected to the retention pond to run off excess water should the system fill up. The pipe was laid in the ground in rows to create a holding tank area that would allow the water to migrate through the perforation back into the ground slowly.

Without this partnership the original project would have allowed any storm water to run off the road, heating up from the hot asphalt and sending that warm water into the local ponds and streams which would have affected the ecosystems of those water systems.

Project Results (3000 character max) For all award categories except Sustainability Hero, describe the project results and achievements to date focusing not only on outputs but also on intermediate and long-term outcomes, and potential future outcomes. Include relevant information which may include quantitative data, such as reductions in waste generation, for example. Please do not cite the results of any environmental compliance audits. **For the Sustainability Hero category only, describe the results the nominee has achieved.**

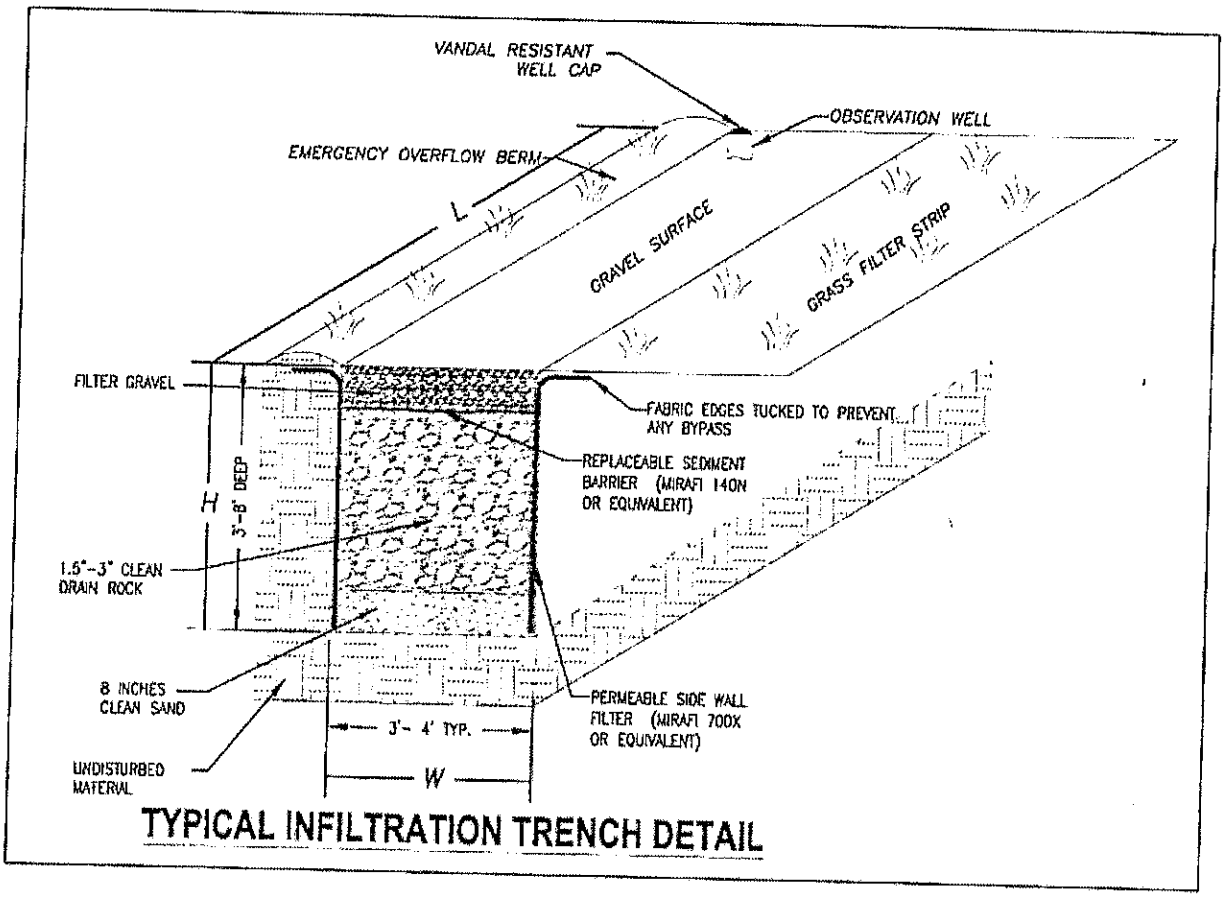
Since the completion of this road project in fall of 2014, several heavy rain and snow storms have been observe here at the National Center with no visible sign that any of the run off went anywhere but into the system and back into the ground. Under this infiltration system there are inspection ports that could show water in the system for up to 72 hours after a heavy storm and never after 24 hours of a heavy storm has any water been observed in these ports. This project was designed with 18 drainage areas and the capacity of these drainage areas is 51,500 cubic feet. The calculated storage requirement for this area average rainfall is 36,201 cubic feet.

This system is designed that through the inspection ports if any of the 18 drainage areas stops emptying out the trench can be replaced. If needed, the fabric and top gravel could be replaced and then if necessary the clean rock and sand. Under routine maintenance every couple of years the top gravel is removed to clean the fabric and then the gravel is replaced.

Reproducibility (1500 character max) For all award categories except Sustainability Hero, explain how the project has been replicated or has a high potential to be replicated at other federal facilities and how this knowledge has been shared with colleagues in other locations, such as Centers, organizations, or agencies. **For the Sustainability Hero category only, describe how the nominee has mentored others.**

From this redesign, GSA and USGS are able to use this storm water management plan in other road replacement projects across the country. As USGS conducts NEPA reviews through the environmental branch if any project has need for stormwater management plan this design could be reproduce in any area of the country.

In the future the 12 parking lot areas at the National Center will have to be replaced and at that time this design concept can be utilized to change the current drainage system that has 100% of the parking lot runoff going to the retention pond.

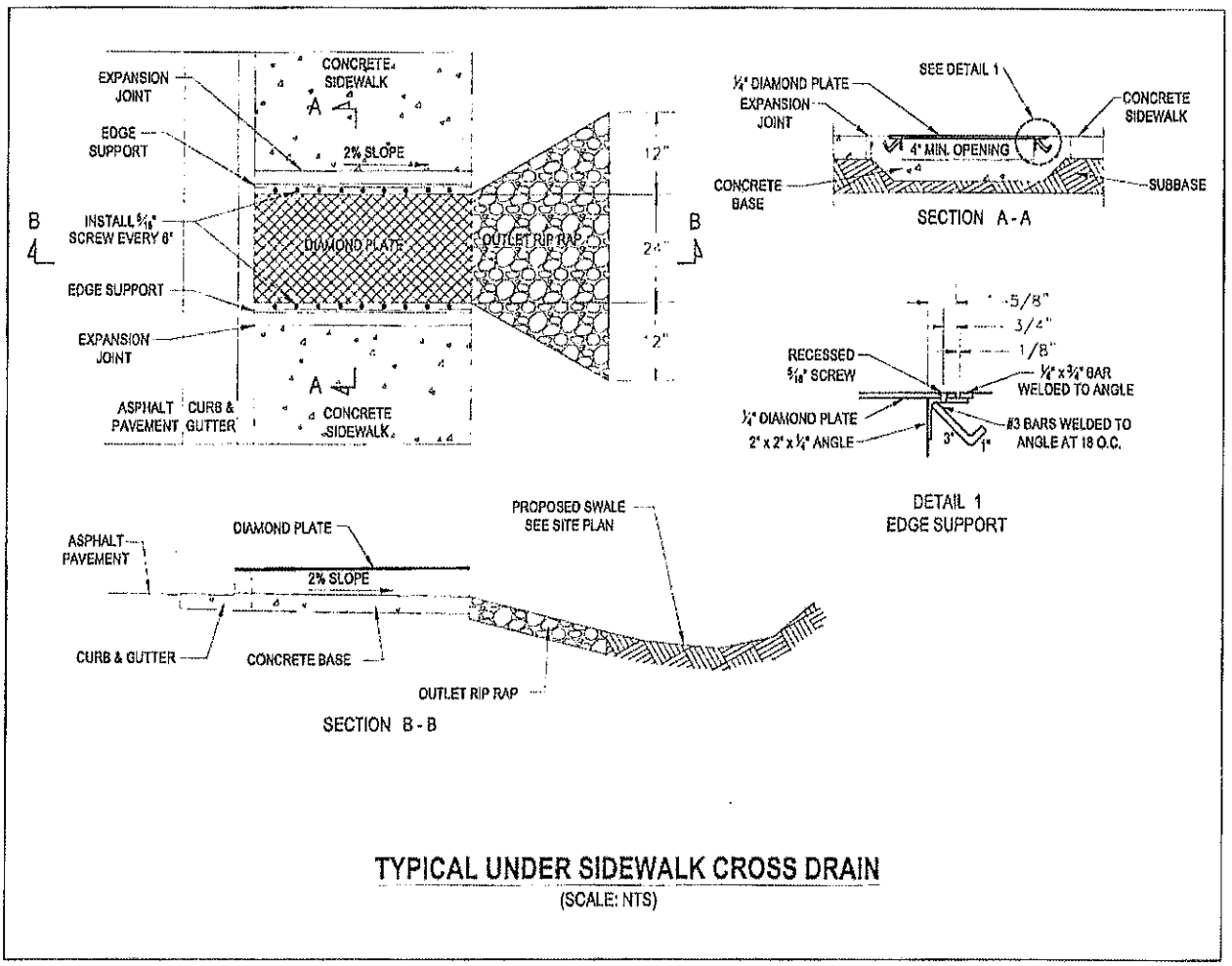


TYPICAL INFILTRATION TRENCH DETAIL

NEERS -
STRUCTION AND
GRAM MANAGERS

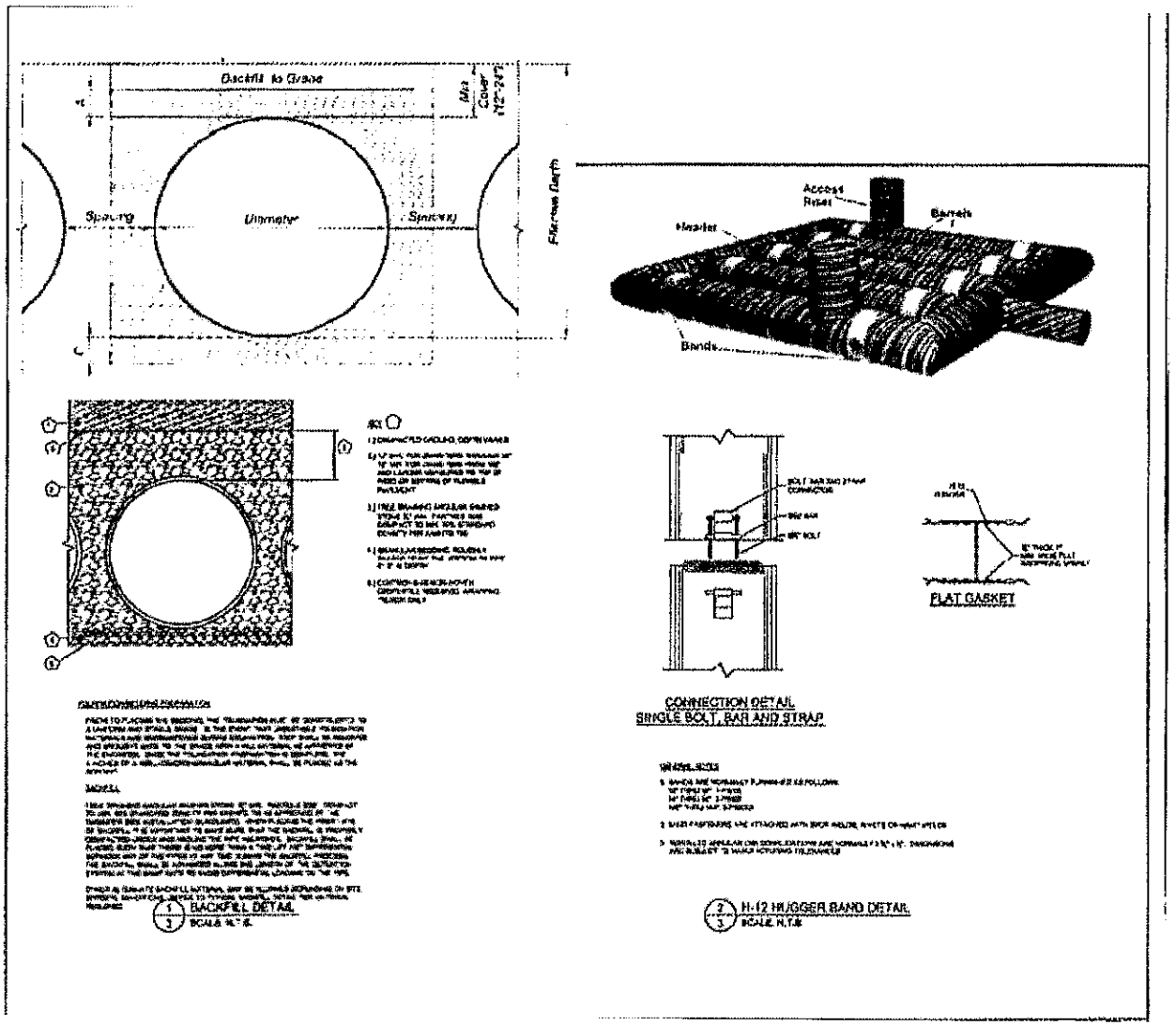
STORMWATER MANAGEMENT PLAN
STA. 0+00 TO STA. 5+50

PR
OB
CH
DR
DE



TYPICAL UNDER SIDEWALK CROSS DRAIN

(SCALE: NTS)


Backfill to Grade
Spacing
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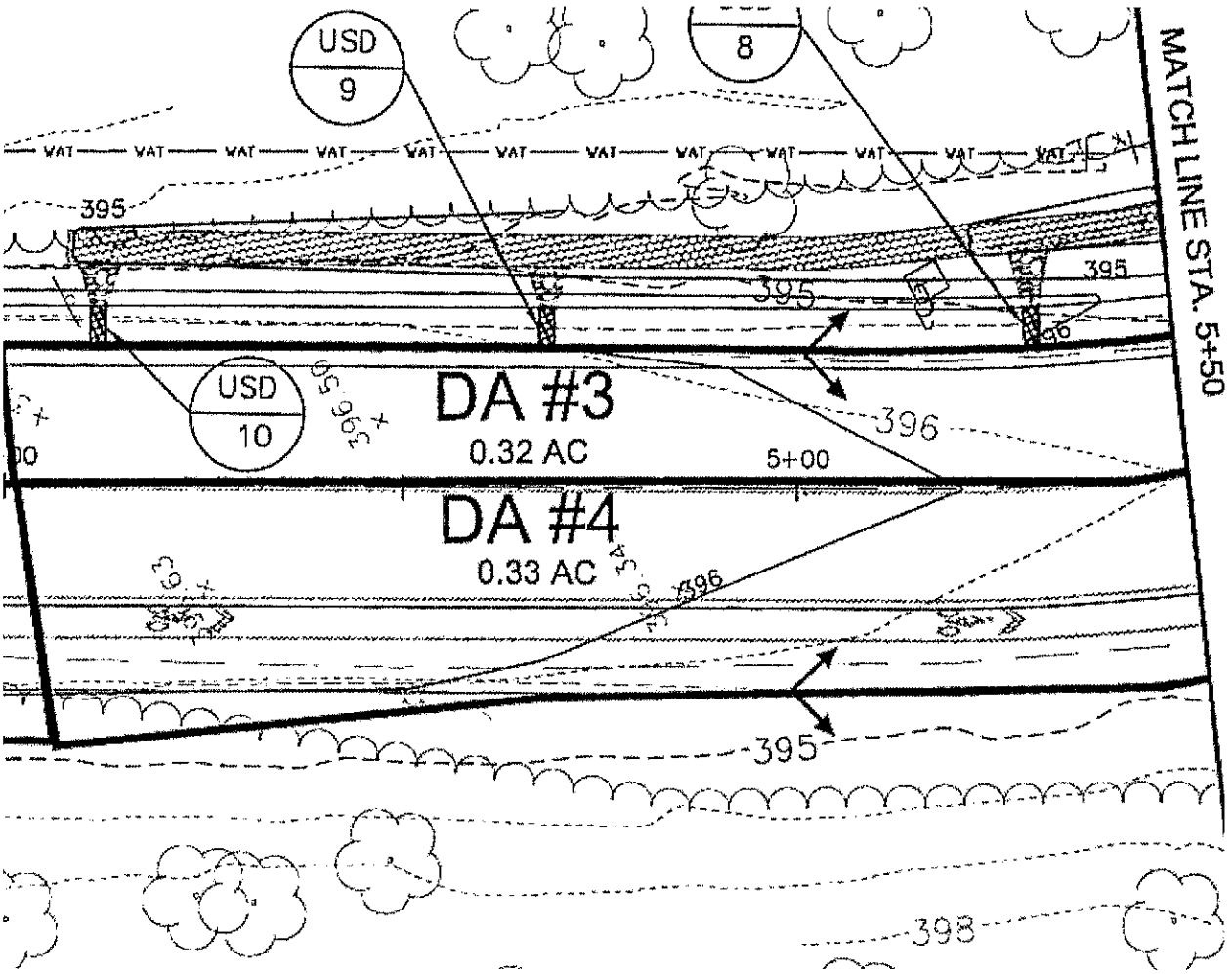
Access Riser
Barrels
Header
Bands
CONNECTION DETAIL
SINGLE BOLT, BAR AND STRAP
FLAT GASKET
BACKFILL DETAIL
H-12 HUGGER BAND DETAIL


USD
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MATCH LINE STA. 5+50
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DA #4
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