

June 23, 2016

Ms. Richelle Hanson, Project Manager
Land Restoration Program
Land Management Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 625
Baltimore, Maryland 21230-1719

Re: Response Action Plan Addendum #3
Former Kop-Flex Facility Site, Hanover, Anne Arundel County, Maryland
Brownfield Master Inventory Number MD0286

Dear Richelle:

On behalf of EMERSUB 16 LLC, WSP USA Corp (WSP) is submitting this Addendum #3 to the Response Action Plan (RAP) for the Former Kop-Flex Facility Site located in Hanover, Maryland (Revision 2.0, dated October 2, 2015), which was approved by the Maryland Department of the Environment (MDE) on October 9, 2015. The addendum provides information on a minor modification to the groundwater conveyance piping for the groundwater response action at the site. The proposed modification is the result of a value engineering review of the RAP design drawings and will expedite the installation of the remedial alternative to address the impacted groundwater at the site.

GROUNDWATER CONVEYANCE PIPING

As discussed in Section 9.2.2.1 of the RAP, high density polyethylene (HDPE) conveyance piping will transfer extracted water from the wellhead vaults to the equipment building for treatment. The current design has the groundwater conveyance piping being installed within a larger diameter HDPE carrier pipe. Based on a recent engineering review, we have determined that a secondary carrier pipe is unnecessary as it provides minimal engineering value while increasing the construction time, and an alternative approach for leak monitoring, detection, and piping repair is suitable and environmentally protective. A revised trench section showing the proposed new design for the water conveyance piping is shown in the attached Sheet 3.

MONITORING, DETECTION AND REPAIR OF PIPING LEAKS

The carrier pipe is an unnecessary component of the design given that a control system, flow meters and pressure gages will be installed to monitor system flows and pressure. These components will provide the operational data necessary to detect a potential water leak and alert the operator. In support of this addendum, we are providing the following procedures and time frames for actions related to potential and actual leaks.

LEAK MONITORING

System flow, pressure, pump speed and drawdown will be monitored continuously by a programmable logic controller (PLC) and telemetry system with alarm notification. The groundwater extraction system design includes well pump speed controllers and water level transmitters designed to maintain a constant pressure head in each well. Should a condition indicative of a potential leak be detected by the PLC - e.g., a change in pump speed without a corresponding change in water level at the well - an alarm condition will be communicated from the PLC to WSP, initiating a shut-down of the system and site visit to determine whether a leak has occurred from the piping. In addition to the remote system monitoring, visual inspection of the wellheads will be conducted during each regeneration site visit for the resin treatment system. Currently, the site visits for resin regeneration and wellhead inspection are anticipated to occur weekly.

LEAK LOCATING

In the event of an alarm condition indicative of a potential leak, WSP will immediately shut-down the system and visit the site within 24-48 hours to determine the cause of the alarm condition. WSP will visually inspect each wellhead for piping leaks, check individual well flow meter readings and water levels for comparison with system readings, and check water pressures along the piping system for evidence of precipitation buildup in the conveyance piping. A suspected leak within a section of the underground conveyance piping will be evaluated using pressure testing. A loss in pressure during the test will confirm a pipe leak is present in the section, while sustained pressure will indicate no leak is present in the section. After confirming the presence of a leak through pressure testing, acoustic surveying will be performed to pinpoint the location of the leak within the section.

LEAK REPAIR

If a leak is confirmed, repairs will be scheduled and the part of the system with the leaking pipe section(s) and/or wellhead(s) will remain offline until repairs are completed. Leaks will be remedied through the repair or replacement of the leaking pipe sections and /or fittings. The time frame for completing the leak repair will be dependent on the location and extent of the leak. Leaks confined to the lines and/or fittings located within the well head vaults will be repaired within one week. Leaks requiring excavation to expose the underground piping will require scheduling and coordination with the current owner to minimize disruption of business activities, and are expected to be completed within three to four weeks. Following completion of the repairs, operation of the affected areas will resume, with the effectiveness of the repairs inspected using the monitoring procedures discussed above.

ADDITIONAL ACTIVITIES FOR HIGH VOLUME LEAKS

A high volume leak is considered a release of over 10,000 gallons of water (i.e., approximately two hours of full design flow) from a single location in the piping system. Based on the average VOC concentrations in untreated groundwater, a 10,000-gallon release of untreated groundwater would contain less than 0.04 pounds of VOCs, or less than 0.03 percent of the reportable quantity of any individual VOC under the Comprehensive Environmental Response, Compensation, and Liability Act. WSP will complete the leak locating and repairs as described above, and implement a sampling and analysis plan to assess potential impacts to the soil and groundwater in the vicinity of the release. The release assessment plan will be provided to the MDE within 15 days of a confirmed high volume leak, and implemented within 45 days of this date.

LEAK REPORTING

In the case of a high volume leak triggering the implementation of a sampling and analysis plan, a report of findings and recommendations for additional actions, if warranted, will be provided to the MDE within 60 days of completion of the release assessment. The reporting of minor leaks will be included in the operation, maintenance, and monitoring report for the associated reporting period as provided in the RAP.

PROFESSIONAL ENGINEER'S CERTIFICATION

By signature below, Stephen J. Kretschman, Maryland Professional Engineer License No. 43362, certifies that the piping design modification and procedures for piping leak monitoring, detection, and repair described in this addendum are suitable and environmentally protective.

If you have any questions concerning the above modifications to the groundwater response action, please contact us at 703-709-6500.

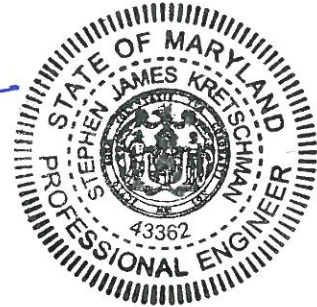
Sincerely yours,



Robert E. Johnson
Senior Technical Manager



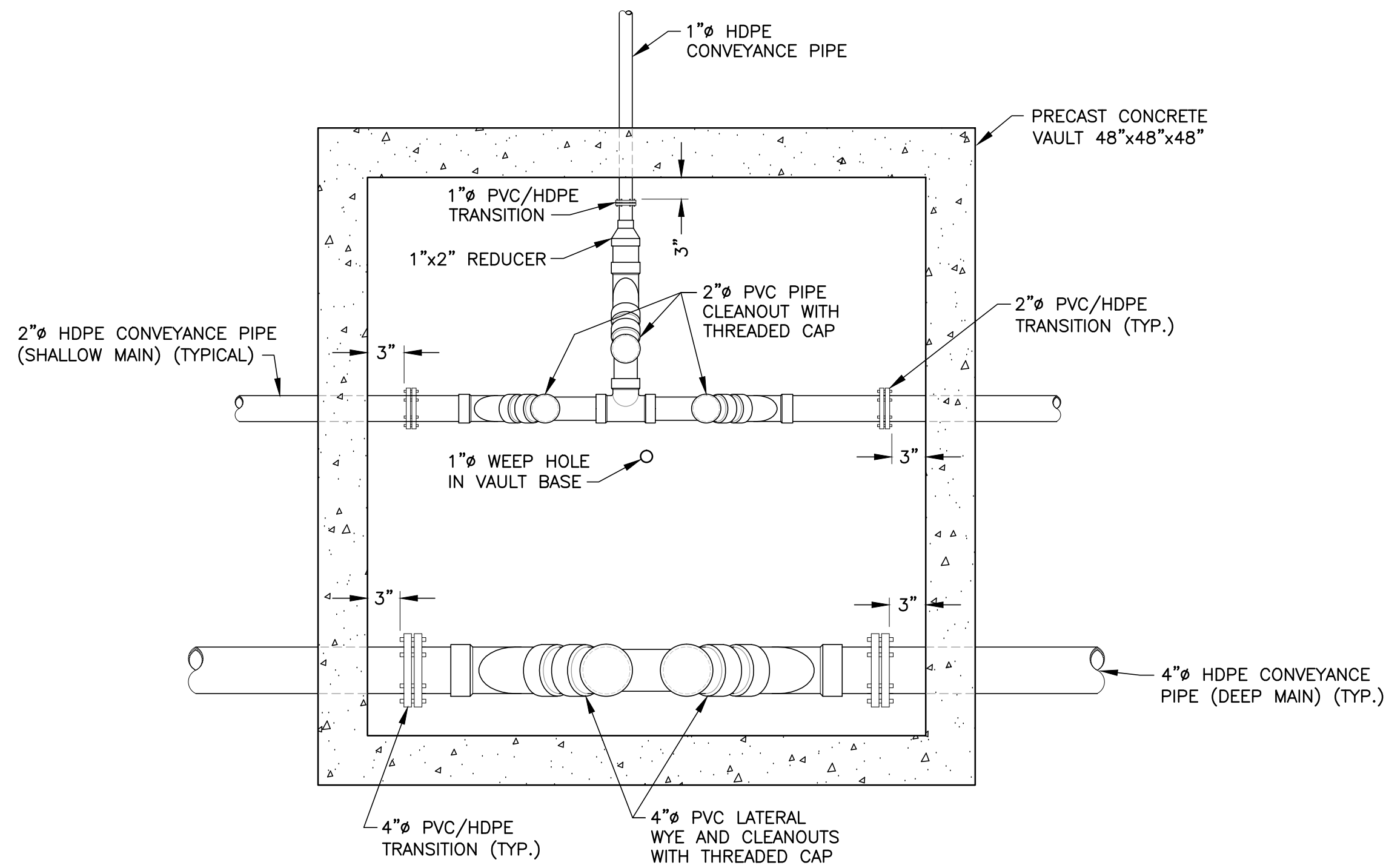
Stephen J. Kretschman
Vice President
Maryland P.E. No. 43362



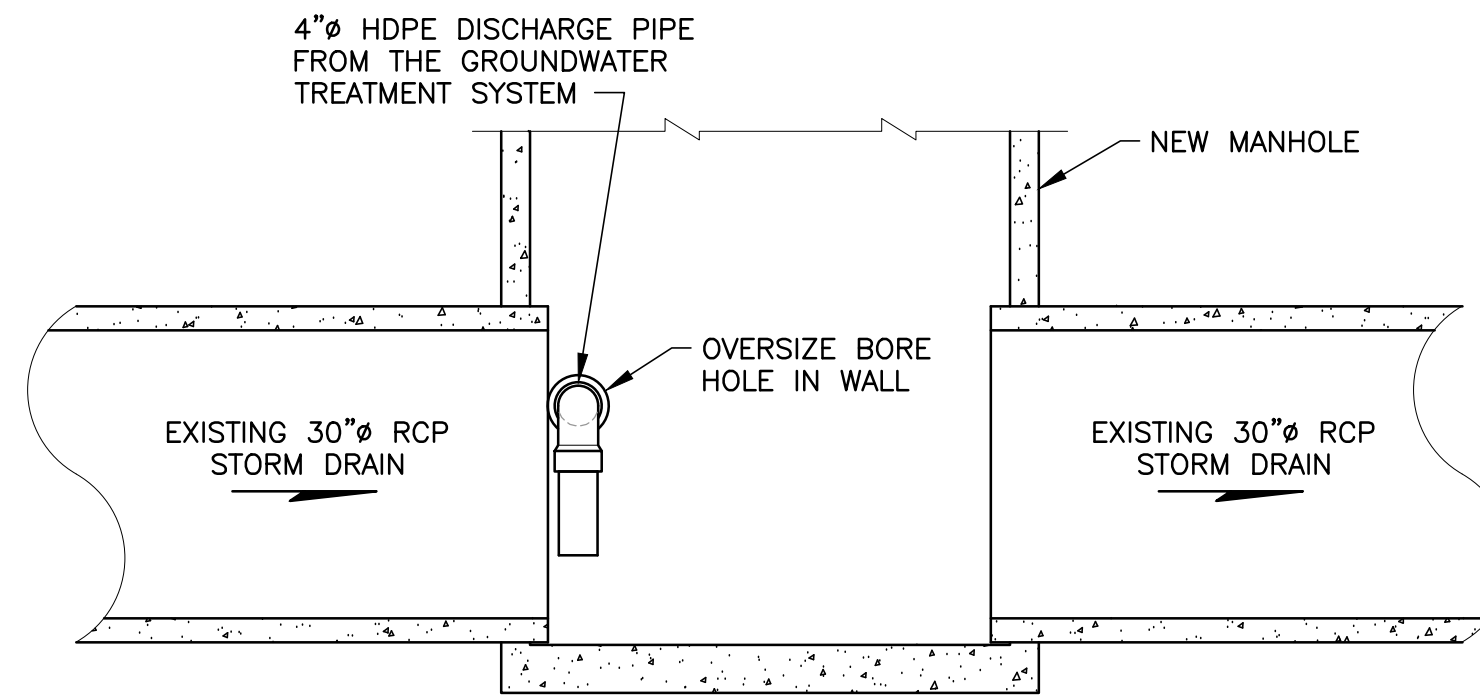
SJK:

cc/encl.: Erich Weissbart, U.S. Environmental Protection Agency, Region III
 Mr. Stephen Clarke, Emerson Electric Co. (via electronic mail)
 Christine Carney, Esquire, Emerson Electric Co. (via electronic mail)
 Mr. David Neuman, Trammell Crow Company
 Sheila Harvey, Esquire, Pillsbury Winthrop Shaw Pittman LLP (via electronic mail)

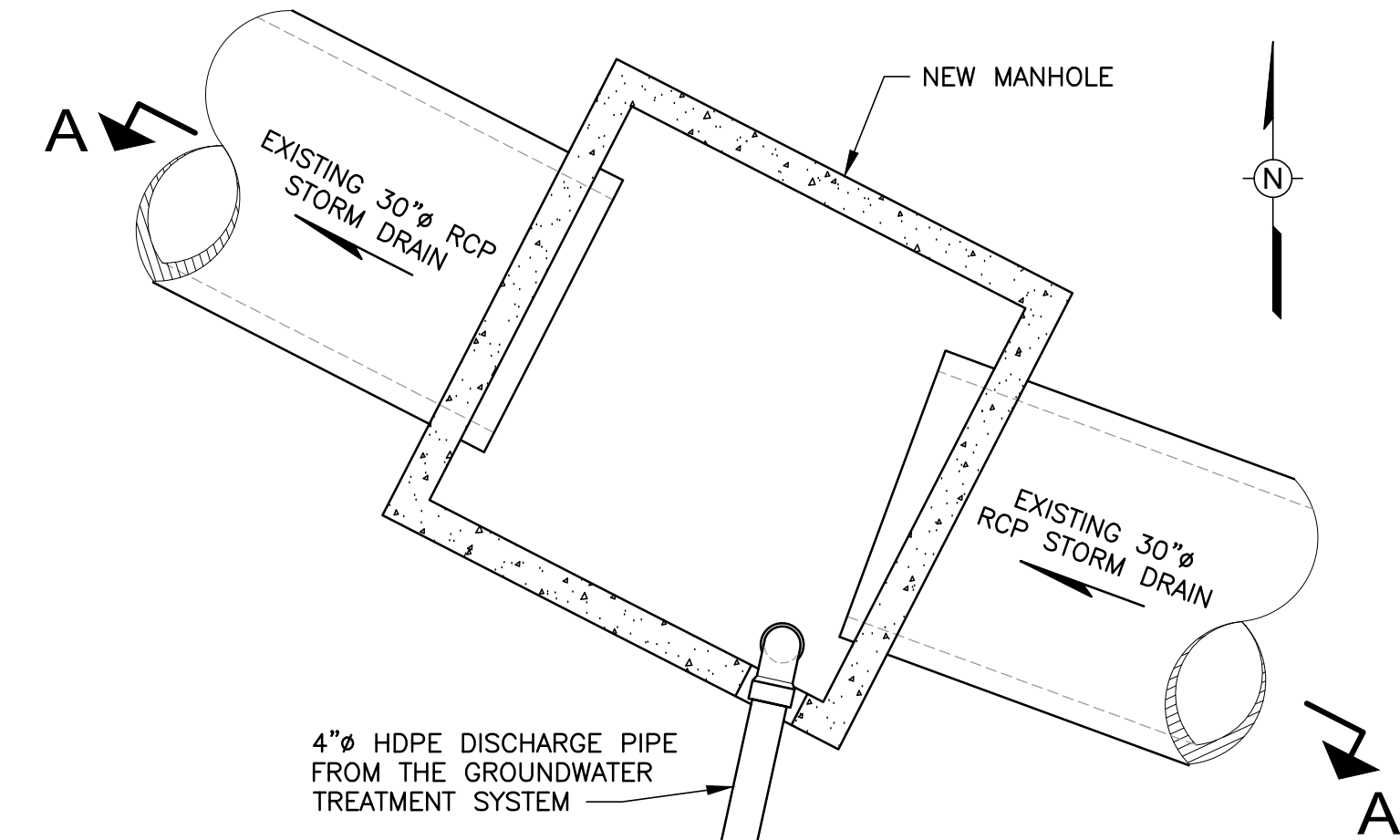
Attachment A – Revised Sheet 3 of Engineering Design Drawings



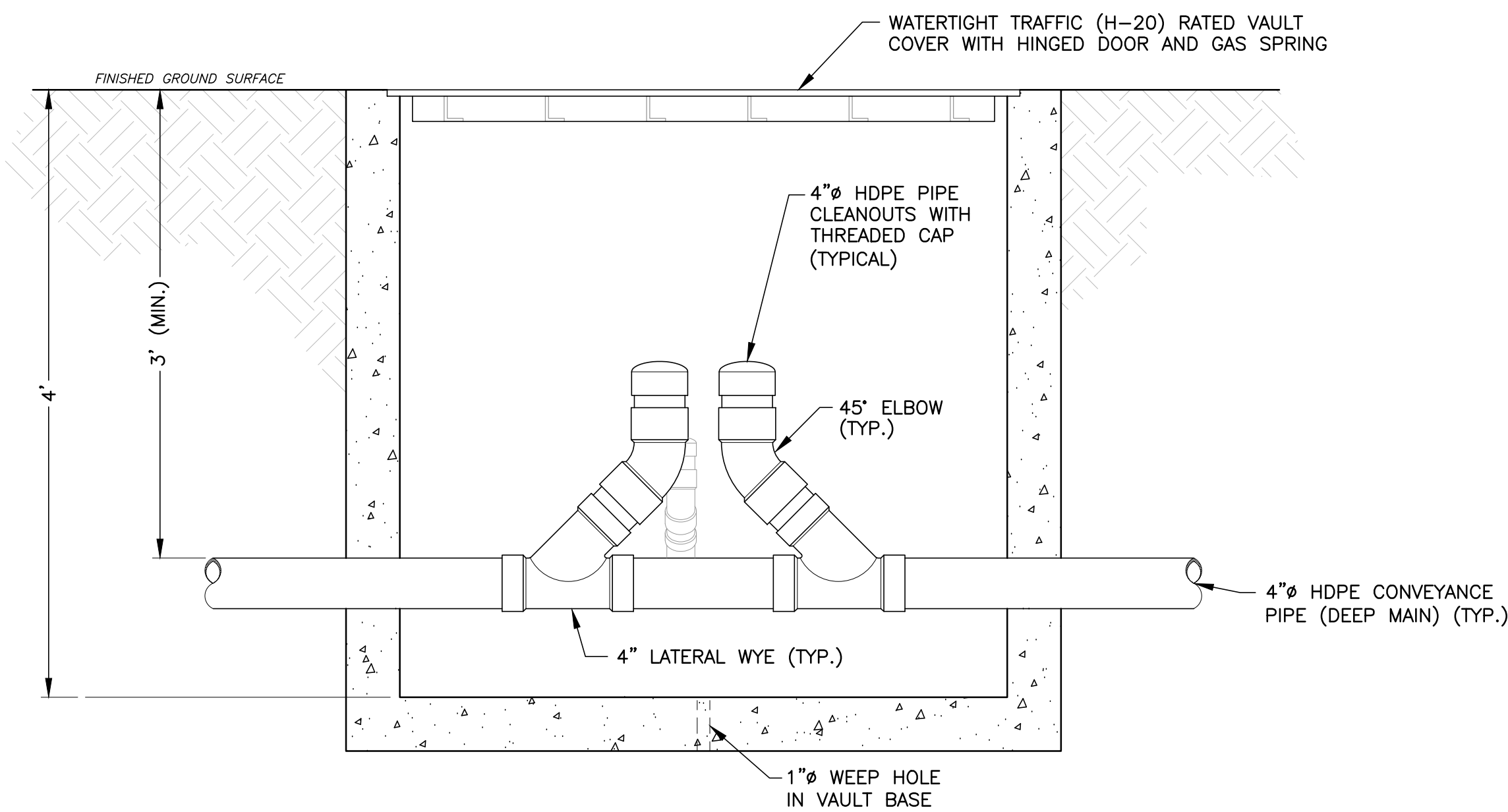
TEE CLEANOUT VAULT / JUNCTION BOX PLAN VIEW
NOT TO SCALE



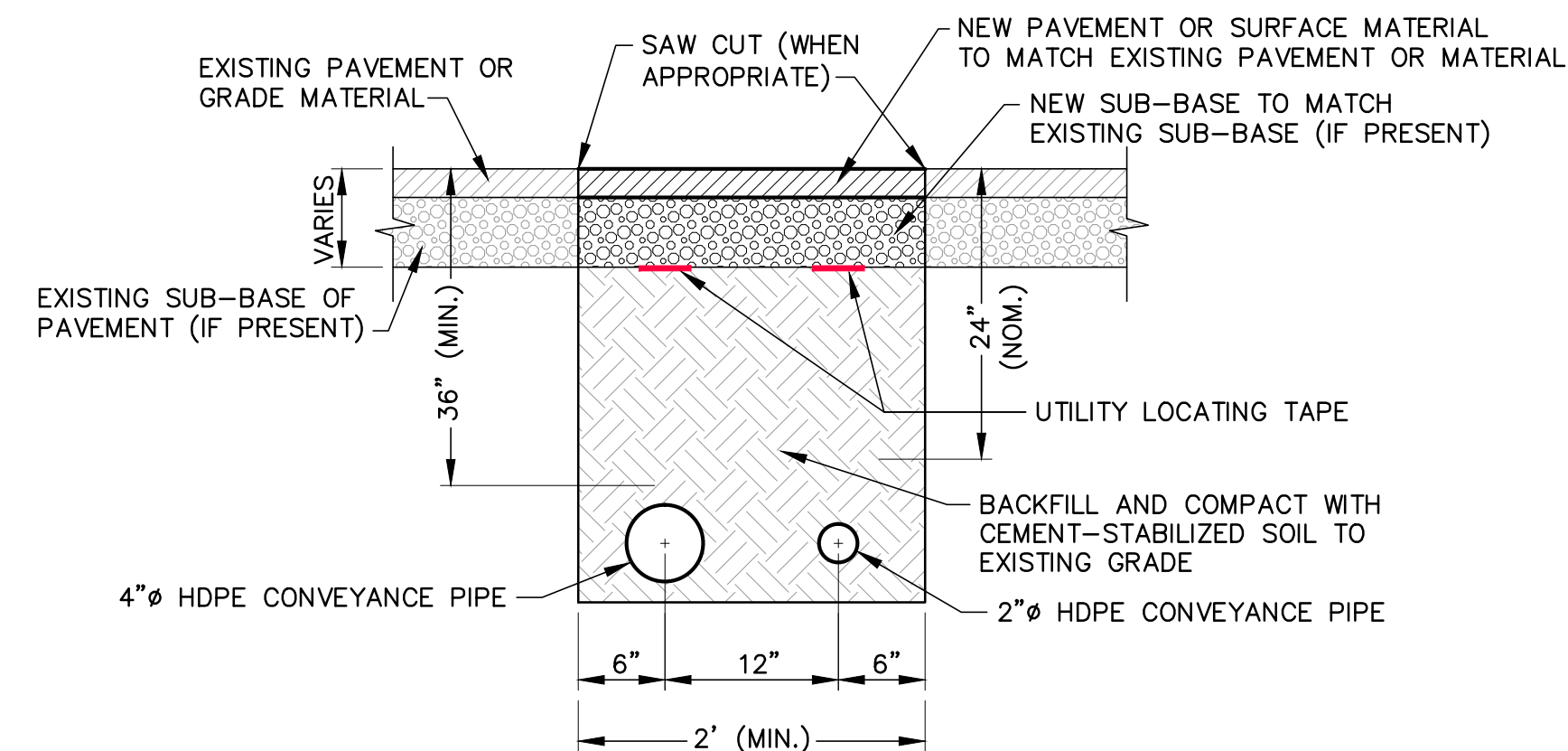
DETAIL - DISCHARGE MANHOLE SECTION A-A
NOT TO SCALE



DISCHARGE MANHOLE PLAN VIEW
NOT TO SCALE



TEE CLEANOUT VAULT / JUNCTION BOX PROFILE
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE
(WATER CONVEYANCE & CARRIER PIPES)

| REVISIONS | | DESCRIPTION |
|-----------|----------|------------------------|
| REV | DATE | DESCRIPTION |
| 1 | 08/20/18 | Issue for Construction |
| 2 | 08/20/18 | Issue for Construction |
| 3 | 08/20/18 | Issue for Construction |
| 4 | 08/20/18 | Issue for Construction |

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| DRAWN BY | CHECKED | APPROVED | SEAL | DATE |
| APR CADILLAC | | | | |
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CLEANOUT VAULT AND
MISCELLANEOUS DETAILS
FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND
PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

WSP | PARSONS
BRINCKERHOFF
WSP USA Corp.
13530 Dulles Technology Drive, Suite 300
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SHEET 3

Drawing Number
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