

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeal of --)
)
W. R. Henderson Construction, Inc.) ASBCA No. 52938
)
Under Contract No. DACW47-97-C-0028)

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OPINION BY ADMINISTRATIVE JUDGE JAMES

This appeal arises from the contracting officer's (CO) final decision which denied the contractor's September 1998 differing site conditions claim for \$140,178, except for \$5,792 identified in contract Modification No. P00001. The Board has jurisdiction of the appeal under the Contract Disputes Act of 1978, 41 U.S.C. § 607. After a three day hearing in Albuquerque, NM, the parties filed post-hearing and reply briefs. The Board is to decide issues of liability and causation, reserving the quantum of recovery for future negotiations or hearing provided appellant prevails (Bd. 14 June 2000 prehearing conference letter).

FINDINGS OF FACT

1. On 30 September 1997 the Army Corps of Engineers (ACOE) awarded contract No. DACW47-97-C-0028 (contract 28) to W. R. Henderson Construction, Inc. (WRHC) in the amount of \$384,995.00 for the construction of the Los Trigos Diversion Dam on the Pecos River in San Miguel County, New Mexico (stip. ¶ 1; R4, tab C).

2. Contract 28 provided a performance period of 120 calendar days from receipt of the notice to proceed (R4, tab C, § 00800, ¶ 1). WRHC acknowledged receipt of the notice to proceed on 30 October 1997 (SR4, tab H), thus setting 27 February 1998 as the contract completion date. Such date was extended by a total of 47 calendar days to 15 April 1998 by Modification Nos. A00001, A00002 and A00005 (R4, tab C).

3. Contract 28 incorporated by reference the standard construction contract clauses, including FAR 52.236-2 DIFFERING SITE CONDITIONS (APR 1984), which provided in pertinent part:

(a) The Contractor shall promptly, and before the conditions are disturbed, give written notice to the [CO] of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract

(b) The [CO] shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984), 52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995), which invited prospective bidders to tour the jobsite on 4 September 1997, and 52.243-4 CHANGES (AUG 1987) (R4, tab C at 00100-9, 00700-87, -88, -98).

4. Contract 28 included 19 fixed priced line items (CLIN) including CLIN 0001, Diversion and Care of Water, CLIN 0002, Diversion Dam Demolition, CLIN 0003, Excavation, CLIN 0004, Fill and Backfill, CLINs 0009-0014, Rockfilled Gabions of different sizes, and CLIN 0015, Concrete (R4, tab C at 00010-3, -4).

5. The Pecos River flows through the contract 28 job site roughly from north to south. The existing Los Trigos Diversion Dam was oriented east-west across the river. Its function was to divert river water from the upstream (north) side of the dam into the "Acequia Los Trigos" (irrigation ditch) on the east side of the river. (Ex. B-1)

6. Contract 28 required the contractor to install a temporary cofferdam upstream (north) of the existing dam, to dig a channel to divert the river around the existing dam, to remove the existing dam, and to install a new dam. The new dam was to be made from horizontal layers of "gabions" (rectangular metal mesh baskets filled with rocks) covered with concrete. (R4, tab D-1 at 01565-1, -2; ex. B-1, plates 2-5, 9)

7. The contract drawings' "Construction Easement Plan" showed a 230 by 325 foot "Construction Easement" straddling the Pecos River around the existing dam, the west side of which easement adjoined New Mexico Highway No. 3. A 25 by 163 foot "Access

Easement” connected the east side of the Construction Easement to a “Staging Area” further to the east of the Pecos River. The Staging Area, of more than 100 by 300 feet, was more than six times the size of the part of the Construction Easement west of the Pecos River, and adjoined a county road. (Ex. B-1, plate 3)

8. Contract 28’s specifications, § 01565 DIVERSION AND CARE OF WATER, as amended on 3 September 1997 before bidding, provided in pertinent part:

1. DEWATERING OF WORK AREAS. All permanent work shall be done in areas free from water. The Contractor shall provide adequate equipment, labor, and materials to dewater permanent work areas and shall keep the work dry until that portion of the permanent work below the water level has been completed.

2. PLANS TO BE SUBMITTED. The Contractor shall submit to the [CO] four copies of prints showing the method of dewatering the permanent work areas, the capacity of all pumps, details of proposed cofferdams, and the proposed sources of all earth fill materials to be used in such cofferdams. . . . One set of prints will be returned to the Contractor approved by the [CO] as to the proposed method of construction, the proposed method of dewatering, and the capacity of the pumps. Where the Contractor’s plans are not considered satisfactory, corrections recommended by the [CO] shall be made for the Contractor’s information only, and will not relieve the Contractor of the responsibility for the design of adequate facilities and for satisfactory construction thereof.

3. LOCATING DIVERSION CHANNEL IN THE FIELD. Upon receipt and approval of the Contractor’s dewatering plan by the [CO], the Contractor shall stake the centerline of his proposed diversion channel for review and approval by the [CO]. This procedure shall be followed in order to minimize loss of potential habitat for the Southwestern willow flycatcher.

4. DIVERSION CHANNEL DISTURBANCE ZONE. Unless otherwise approved by the [CO], the diversion channel disturbance zone, which is defined as the area containing the channel and the work areas adjacent to it, shall be no more than 40 feet wide. All material to be excavated during construction of the channel shall be stockpiled in this area. To minimize

damage to willow roots in the disturbance zone, no machinery or equipment shall be allowed outside the 40 foot wide disturbance zone.

5. STOCKPILING AND REPLANTING WILLOW ROOT STOCK FROM DIVERSION CHANNEL

EXCAVATION. At the Contractor's option, the willows in the area to be excavated for the diversion channel shall be restored by the method specified in the Section TREES AND SHRUBS, or by the following method: The top two feet of soil, which contains most of the willow roots, shall be stockpiled in a two-foot-thick layer in the diversion channel disturbance zone described above. The two feet of soil below this top layer shall then be excavated and placed evenly on the stockpiled top layer to protect the roots therein from drying out or freezing. Lastly, the remaining material to be excavated from the channel shall be removed and stockpiled separately within the diversion channel disturbance zone. At the conclusion of the project, the channel shall be backfilled with the excavated material in reverse order to that specified above. In other words, material excavated last shall be replaced first, followed by the second layer, followed by the layer containing the rootstock.

6. BACKFILLING DIVERSION CHANNEL.

6.1 General. Regardless of the method used to restore willows in the backfilled diversion channel, boulders or dense concentrations of cobble shall not be placed in the top layer of backfilled material. In order to foster willow growth and development, this layer shall not contain types and concentrations of rocky material that are significantly different from those originally present. Each layer, as it is backfilled, shall be spread evenly over the substrate and shall not exceed 2 foot in thickness. A single pass with bulldozer or loader over each part of the surface shall be sufficient for compacting the backfill material.

7. DIVERSION CHANNEL LINER AT PECOS RIVER DIVERSION STRUCTURE.

The Contractor shall provide a liner within the temporary diversion channel to reduce the sedimentation of the Pecos river [sic] prior to routing water through the diversion channel. The liner shall be made of a heavy impervious or semi-impervious material that is resistant

to ultraviolet degradation and able to remain intact during the period of use. Polyethylene plastic sheeting is not suitable. The liner shall be placed to extend at least one foot above the highest water level calculated for the diversion channel and secured to withstand channel flows. The type of lining material, placement, and attachment details shall be approved by the [CO].

(Stip. ¶¶ 2, 3; R4, tab D-1 at 01565-1, -2)

9. Contract 28 did not: (a) include or refer to soil boring logs or geotechnical data, and make any positive representation about the subsurface conditions or previously backfilled organic material, juniper trees, limbs or branches on the job site; or (b) specify the location or route of the diversion channel or require the diversion channel to be on the east or west side of the Pecos River; the diversion channel's location, route and configuration were left to the contractor's discretion (exs. C, B-1).

10. Gordon Koon, WHRC's site superintendent, reviewed the plans and specifications, visited the site before WRHC bid, and saw no "slash," or juniper trees in the area of the prospective diversion channel (tr. 1/27-28, 82).

11. Mr. Koon reported his pre-bid site visit observations to WRHC's president, William Henderson. Mr. Henderson prepared WRHC's bid from his own estimates, with assistance on the times needed to perform work elements from Mr. Koon and WRHC's project manager, Bert Truxal. (Tr. 1/28-29, 130, 2/153, 159-61)

12. In preparing WRHC's bid, Mr. Henderson testified credibly that he: (a) relied on the specification § 01565 provisions that the diversion channel disturbance zone was 40 feet wide; all excavated material was to be stockpiled in that zone, removed in strips and re-used to backfill the channel; and the channel was to have a liner; (b) anticipated that the diversion channel would be about 450 feet long and would need a crossing (bridge) in order for construction equipment to access the dam from the Staging Area; (c) anticipated no unsuitable material when digging the diversion channel, because Mr. Koon had reported no unsuitable material, and the plans and specifications did not indicate unsuitable material at the job site; (d) assumed that the contractor would have access to the job site from the county road to the northeast and from Highway 3 upstream of the dam; and (e) planned to assemble gabions in the staging area and to construct the new dam from east to west in 4-6' lifts in order to work more efficiently at ground level rather than off the ground, above the heads of workers (tr. 2/161-69).

13. WRHC's 14 November 1997 Submittal No. 2 included item 1, a drawing on which was depicted a "diversion trench 6' to 8' w[ide]" east of the Pecos River, and a cross-section of that trench with two-to-one horizontal to vertical slopes of varying elevations, a

six to eight foot wide trench bottom, and a 20' wide trench top based on Mr. Koon's measurement of the water flow over the existing dam (tr. 1/39-41, 132-34); and item 2, a "DEWATERING METHOD" stating:

A. Diversion Channel

The diversion channel will be dug on the north, northeastern side of the river. It will be 6' to 8' wide at the bottom. The depth will vary. The side slopes will lay in repose on a 2 to 1 or a 1.5 to 1 slope. . . . The entire channel will be lined with the approved liner. A 6' culvert will be incorporated into the diversion to form a bridge for equipment and material access.

B. Cofferdam

The cofferdam will be constructed with native earth and rock material. . . .

C. Pumps

W. R. Henderson . . . believes that the diversion channel and cofferdam will negate the need for an elaborate pumping system. If needed, a six-inch pump will be utilized. . . .

The ACOE approved item 2 of WRHC's submittal No. 2 on 21 November 1997, and required resubmission of item 1, stating: "Show location of culvert + cofferdam on dwg." (SR4, tab C-1)

14. On 18 and 20 November 1997, ACOE's biologist Frank Graves, its Quality Assurance Representative (QAR) Fawn E. Fox, and WRHC's Gordon Koon identified the diversion channel boundaries proposed by WRHC (AR4, tab 6 at 002763, -66 to -69; tr. 3/130-31). On 25 November 1997, WRHC's Lionel Koon and Bert Truxal, and QAR Fox, *inter alia*, made a preparatory inspection of the dewatering work on the job site and discussed WRHC's specification §§ 01565 and 02221 ("EXCAVATION") submittals (AR4, tab 6 at 002779).

15. On 3 December 1997, Gordon Koon began excavating the diversion channel starting at the south end downstream of the dam (tr. 1/39-40).

16. On 4 December 1997, after excavating about 50 feet of the diversion channel, Mr. Koon encountered what WRHC described in its daily report as "roots and debris in ditch" (AR4, tab 6 at 002787; ex. G-1). At the hearing, Mr. Koon described the material as a layer, about 2½ feet in elevation, of "juniper slash . . . juniper trees . . . cut with a

chainsaw or an axe . . . cut off and placed there” (tr. 1/41-42, 45-47). The material got thicker as WRHC’s excavation continued northward. Mr. Koon stopped after excavating about 75 feet of the diversion channel, and advised Mr. Truxal of the slash problem that, Koon said, would cause difficulty in sloping, compacting and lining unstable channel banks. (Tr. 1/43-44, 48-49; AR4, tab 6 at 002780, -87; R4, tab D-4) Mr. Truxal telephoned Ms. Fox to ask her to visit the job site to review the diversion channel soil conditions (R4, tab D-4; tr. 1/140).

17. Mr. Truxal’s 5 December 1997 photographs of the diversion channel show ice-covered objects protruding from the banks a few feet above the channel bottom or above water in the channel (AR4, tab 1, photos 1-6). Ms. Fox viewed the site conditions with Messrs. Truxal and Gordon Koon, and described the diversion channel conditions in her 5 December 1997 QAR report:

Approx 75' of diversion channel has been excavated (started downstream working towards upstream) . . . Contractor uncovered debris (consisting of trees approx 1" -4") which appear to have been used as backfill. He’s concerned about amount of debris in ditch excavation & whether he’ll be able to use liner as proposed.

The debris Ms. Fox saw extended about 35 feet along the diversion channel. (AR4, tab 6 at 002780-81, -88; ex. G-1; tr. 1/140, 3/132-34, 136-38)

18. On 5 December 1997, Mr. Truxal and Ms. Fox telephoned Administrative Contracting Officer (ACO) Steve Purdy to discuss site conditions. Mr. Truxal suggested placing culverts for the entire channel length or removing unsuitable material and replacing it with suitable material. Mr. Purdy asked Mr. Truxal to prepare an estimate of culvert prices. (Tr. 1/141-42, 3/96) Mr. Purdy thought then that the conditions described to him by telephone were differing site conditions (tr. 3/68-69).

19. On 8 December 1997, Mr. Truxal gave the ACOE an oral estimate exceeding \$100,000 to place culverts in the entire channel. ACO Dave Dark told Mr. Truxal to excavate the rest of the diversion channel so that the ACOE could inspect it and determine the extent of the slash. (R4, tab D-4; tr. 1/44, 143, 3/96-98) WRHC’s 8 December 1997 daily report stated: “The river rose several inches today” (AR4, tab 6 at 002792).

20. On 9 December 1997, WRHC resumed excavating the diversion channel. By 12 December 1997 WRHC had excavated about 163’ of the diversion channel. QAR Fox took photographs on site. Ms. Fox’s 12 December 1997 QAR report stated:

Ditch is being dug up to where culvert is to be placed (approx across from old dam) . . . Debris problem in ditch, only was

encountered for approx 50'. Branches stuck out from both sides of ditch which Gordon (operator, supt) cleaned out and shoved the remainder downwards so liner can be installed.

(Ex. B-1, plate 3; AR4, tabs 4, 6 at 002789-90, -93, -95, -96; tr. 3/134, 138)

21. WRHC encountered another 30-40 feet of slash northwest of the proposed culvert location (tr. 1/45-47, 87-88).

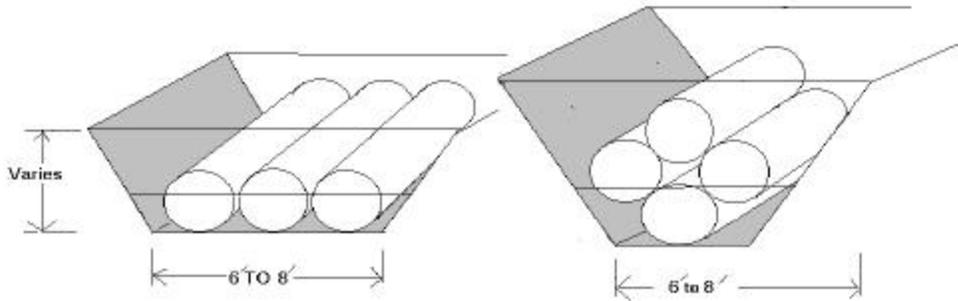
22. WRHC's 15 December 1997 Submittal No. 2a resubmitted a "shop drawing" depicting two parallel lines crossing the diversion channel near the easternmost point in its route, in line with the existing dam and access easement, between which crossing lines were three rectangles aligned side by side and labeled "Road Culverts" (*see* finding 24). Submittal No. 2a included no caveat or reservation of WRHC's rights in the event that the slash in the diversion channel caused difficulty as foreseen on 4 December 1997. (R4, tab D-2; tr. 1/38; ex. G-1)

23. On 17 December 1997, WRHC completed the 388' diversion channel excavation, resloped and dressed the channel banks, notched the top of the slope on each side of the channel, cut and trimmed sticks from channel banks, installed and staked the channel liner at 10 foot intervals, backfilled and compacted dirt by backhoe and shovel over the top of the liner, installed four metal, 20' long, cylindrical culverts in a rhomboidal configuration atop and contiguous to the channel liner (*see* finding 24), backfilled each culvert with "large rocks and fill dirt," tamped the fill "with shovels up to the haunches" of the culverts and with a "sheepsfoot type roller wheel" above that point, and rolled a 47,000 pound excavator ten times back and forth across the crossing (ex. B-1 at plate 3; AR4, tab 6 at 002802, -03; tr. 1/53-59). WRHC's 17 December 1997 daily report stated: "The ditch was increased in size by 20 to 25% because snow fall is 180% of normal. This has required 6 hrs of added excavation" (AR4, tab 6 at 002802).

24. Based on WRHC's Submittal No. 2a, a sketch and photographs of the installed, adjoining culverts (R4, tabs D-2, D-3 at photo 5; AR4, tab 1, photo 23; exs. A-3 at 25-26, A-11; tr. 2/118), the "as-planned" and "as-built" culvert configurations can be illustrated as follows:

As-Planned

As-Built



25. On the morning of 18 December 1997, Ms. Fox telephoned WRHC. WRHC told her that it intended to divert the river into the diversion channel, probably on 19 December. (Tr. 3/139-40, 144-46) WRHC's 18 December 1997 daily report stated:

Cut the river loose at about 1630 hours Everything held for a while - the bank next to the culverts started to cave where we had the limbs and rocks in the bank. It will be impossible to hold the liner in place - The caveing [sic] bank crushed the culvert ends. Fawn [Fox] called someone will be here 10:00 AM tommoro [sic].

(AR4, tab 6 at 002803) Gordon Koon described how he diverted the river into the diversion channel by cutting a slot in a bank at the end of the channel where the liner ended, and letting the river water start to trickle in (tr. 1/61-62; AR4, tab 1, photos 24-31).

26. Mr. Koon also described how the west side of diversion channel bank first began to cave in on 18 December 1997 just south of the culvert crossing:

[T]his was the same area where I got out of the brush and into the good material. And I think what we was [sic] doing was like a parallel trench. We just had a pinnacle of dirt that wasn't tied in that had been excavated on both sides that caved in . . . it cracked the bank clear back past the culverts, and it was allowing water behind the liner. And the liner started pulling away, and the [bank] failed. . . . It took probably a day afterwards before it was at its worst as far as pulling the liner . . . Over a period of time, it just slowly pulled more liner.

....

This area caved into the channel & pushed the liner down, letting water behind the liner. The area that caved into the diversion initially was approx 15-20 feet long. Then it just kept sluffing off as the water ran behind the liner. About 1 day after the initial cave-in it had washed enough to cave in at the culvert destroying our access.

(Tr. 1/63-64; AR4, tab 5)

27. On 19 December 1997, WHRC photographed the diversion channel and called QAR Fox (AR4, tab 6 at 002804; tr. 3/140). According to the CO's and Gordon Koon's testimony, the channel bank caved in, allowed water to get behind the liner, and caused the crossing to collapse (ex. A-3 at 28-29; tr. 1/64-65). The December 1997 photographs, however, show water rushing through the channel, the crossing slumped down at its west side, some culverts partially crushed, and the banks and liner adjoining the crossing still intact and stable (AR4, tab 1, photos 40, 42-43, 45; Gov't ex. C-1, photos 16, 18-19; tr. 2/121-22). Ms. Fox's 19 December 1997 QAR report said:

Liner had washed down to the bottom of the ditch all except 50 ft. . . . Sidewalls are needing to be reinforced. . . . The contractor increased the size of the ditch by his own decision due to info from us, photos & local input. . . . Contr. had diverted water PM of 18 Dec. No debris was at the site.

(AR4, tab 6 at 002797-98; tr. 3/135-36)

28. The ACOE approved WRHC's Submittal No. 2a on 23 December 1997 (R4, tab D-2).

29. Ms. Fox's 31 December 1997 QAR report stated: "Water has eroded sides of ditch - rocks have been placed strategically. . . . Culverts have been washed out - cannot use original staging area" (AR4, tab 6 at 002806).

30. After the channel crossing washed out, WRHC could have diverted the river back over the dam and rebuilt the channel, or controlled channel bank erosion with rip-rap. WRHC instead proceeded to demolish the old dam and construct the new dam due to the impending contract completion date and because the diversion channel "worked quite well as far as dewatering goes." (Tr. 1/66-67, 112)

31. Due to the collapse of the diversion channel crossing and increase of the channel width from 20 to 60 feet in places, WRHC: (a) could not transport construction materials from the Staging Area to the dam site, (b) could not backfill solely from site materials excavated from the diversion channel, and purchased additional material to backfill that channel, and (c) could not build the new dam in four-foot gabion/concrete lifts, but rather built it to its full height in sections from west to east (tr. 1/69-71, 122, 153-65, 2/182-83; R4, tab D-10 at 6; AR4, tab 2).

32. WRHC substantially completed the contract on 31 March 1998 (stip. ¶ 9).

33. WRHC's 19 June 1998 letter to the CO requested a \$140,178 equitable adjustment (REA) due to the alleged differing site conditions reported to the ACOE purportedly on 3 December 1997 (stip. ¶ 10; R4, tab D-10; tr. 2/180-90).

34. ACO Purdy's 4 September 1998 letter to WRHC said:

Although we did agree that a differing site condition existed, in that material excavated from the diversion channel was not adequate for use as backfill, I do not agree that this differing site condition caused the failure of the crossing. Failure of the crossing structure was due to poor planning and installation. The fact that your installation was not in accordance with your dewatering plan, supports this conclusion.

(AR4, tab 14)

35. WRHC's 23 September 1998 letter requested a CO's final decision on its 19 June 1998 REA for \$140,178 and included a proper Contract Disputes Act certification signed by WRHC's president (R4, tab D-12).

36. On 3 February 1999, ACOE's Chief of Construction, William McCollam, told WRHC that there were slash problems in prior main dam sites on New Mexico rivers, but did not discuss slash at diversion channels; some liners did not work; and some diversion channels had failed (tr. 2/199-200, 3/27, 51-52; AR4, tab 18; ex. A-3 at 19). The record contains no evidence that before contracting with WRHC the ACOE knew of slash at the Los Trigos Diversion Dam site, that the ACOE knew that WRHC was ignorant of such knowledge, that slash caused some liners not to work and some prior diversion channels to fail on previous Pecos River dam contracts, or that all such prior contracts were impossible to perform.

37. The CO's 3 March 1999 letter to WRHC stated:

There have been several other projects constructed on the Pecos River. On some of these projects material was encountered that could not be used as suitable backfill for the diversion dam and some did not. . . .

In regards to the diversion channel liner, there have been four other projects on the Pecos River constructed with a lined channel. The liner failed on two of these projects. We believe the difference between the diversion ditch liners that failed and those that didn't is in the quality of the liner installation performed by the contractor. It is certainly possible to install a liner that lasts throughout the construction period of the diversion dam.

. . . I am willing to acknowledge the material you call "slash" in the diversion channel as a differing site condition and agree to pay you a fair and equitable price for the removal of this material and importing backfill to replace it.

(AR4, tab 20)

38. On 12 March 1999 the CO issued a (a) final decision substantially denying WRHC's claim (R4, tab B), and (b) unilateral modification No. P00001, with a \$5,792 equitable adjustment under the FAR 52.236-2 DIFFERING SITE CONDITIONS clause to remove approximately 135 cubic yards of unsuitable material encountered at the diversion channel and to replace it with suitable material (R4, tab D-18).

39. The Board accepted respondent's witness Dwayne Lillard, who holds bachelor and master of science degrees in civil engineering, is a Professional Engineer registered in New Mexico, and has 28 years experience, *inter alia*, in soil mechanics, foundations, earth structures, and soil testing, as an expert in geotechnical engineering related to contract 28 (ex. G-2; tr. 2/79-80).

40. Based upon his examination of 1997 photographs of the diversion channel, liner, culverts, backfill and crossing, Mr. Lillard opined that: (a) before diverting Pecos River water into WRHC's diversion channel, WRHC failed to compact backfill under, around, and between the four, 48-inch, corrugated metal culverts, which were stacked on top of each other and adjoined the liners on the channel banks, and those culverts lacked structural support and were distorted into an elliptical form without any added load on the crossing or diverted river water; (b) after diverting water into the channel, the weight of the water caused additional load and stress on the culverts, which resulted in loss of support of the backfill above the culverts and of the large rip-rap rock placed above and alongside the culverts; (c) the diversion channel bank did not collapse before the crossing, but instead the

culvert pipes first collapsed because of inadequate support, since the channel banks and liner were still in place after such collapse and before the river was diverted; and (d) the channel crossing collapse contributed to the liner failure and ensuing channel enlargement (ex. G-3 at 7; AR4, tab 1 at photos 22, 23; tr. 2/108-09).

DECISION

Appellant argues that “juniper slash material” in the location of the diversion channel caused the collapse of the channel banks and loss of the access crossing and access from the staging area to the east side of the dam. Appellant asserts entitlement based on a “Type I” differing site condition (DSC) or alternatively, a breach of the Government’s duty to disclose superior knowledge, or a defective design entitling appellant to an “equitable adjustment” (tacitly under the Changes clause). (App. br. at 17)

I.

To establish a Type I DSC, the contractor must prove that: (1) the contract documents positively indicated the site conditions that form the basis of the claim; (2) the contractor reasonably relied upon its interpretation of the contract documents; (3) the conditions actually encountered differed materially from those indicated in the contract; (4) the conditions encountered were unforeseeable based on all the information available at the time of bidding; and (5) the contractor was damaged as a result of the material variation between the expected and the encountered conditions. *See Stuyvesant Dredging Co. v. United States*, 834 F.2d 1576, 1581 (Fed. Cir. 1987).

In applying the foregoing criteria, we must first determine whether contract 28 contained a positive indication that the subsurface soil where the prospective temporary diversion channel was to be excavated was free of “slash.” A positive indication of subsurface site conditions can be established by the absence of the subsurface material in soil borings, geotechnical reports, or the like, *see, e.g., Praught Const. Corp.*, ASBCA No. 39670, 93-2 BCA ¶ 25,896, *recon. den.*, 93-3 BCA ¶ 26,084 (contract statement that there would be no “weak or wet material to a depth greater than indicated” was a positive indication that contractor would encounter no subsurface water). Contract 28 contained no soil borings, geotechnical reports, or the like (finding 9(a)).

A positive indication may also be implicit in the contract documents. For example, a positive indication of subsurface or latent conditions required for a Type I DSC arose from the following contract provisions:

an impermeable subsurface permitting excavation in the dry—the notation as to the types of concrete; the direction that “all concrete shall be placed in the dry”; the omission . . . of any provision for a concrete [water] seal or for a class of concrete of

which seals are made . . . are sufficient in themselves, without the [exploratory drilling] logs, to sustain the determination that a changed condition was encountered. . . . all that is required is that there be enough of an indication on the face of the contract documents for a bidder reasonably not to expect “subsurface or latent physical conditions at the site differing materially from those indicated in this contract.”

Foster Const. C.A. & Williams Bros. Co. v. United States, 435 F.2d 873, 875, 193 Ct. Cl. 587, 594 (1970). *See also Stock & Grove, Inc. v. United States*, 493 F.2d 629, 204 Ct. Cl. 103, 108 (1974) (designation of quarry at a rock cliff alongside the job site constituted a representation that by use of correct quarrying techniques, sufficient “armor stone” could be obtained therefrom to complete rip-rap work).

WRHC argues that contract 28 implicitly indicated that the material excavated from the diversion channel would be suitable and adequate to backfill the diversion channel because it specified that “the channel shall be backfilled with the excavated material” and provided for no imported fill to replace any excavated material (app. br. at 18-19). Both the ACO and the PCO agreed that a DSC existed with respect to the adequacy of material excavated from the diversion channel for backfill (findings 34, 37).

WRHC established DSC element (1), positive indications of site conditions on which the claim is based, namely, specification § 01565, ¶ 5’s representation that the channel was to be backfilled from excavated material, without mention of added borrow material (finding 8); element (2), reasonable reliance on its interpretation of the contract documents to require all excavated material to be re-used to backfill the diversion channel and no anticipation of unsuitable material when digging the diversion channel (finding 12); element (3), conditions encountered differed materially from those indicated, namely encountering slash that was unsuitable for backfilling the diversion channel (findings 16-21); element (4), conditions were unforeseeable based on WRHC’s pre-bid site visit in which it saw no slash or juniper trees in the area of the prospective diversion channel (finding 10); and element (5), WRHC was damaged as a result of the material variation, since it had to import material to backfill the diversion channel (findings 31(b), 37, 38(b)). We hold that WRHC established a Type I DSC to the extent that the slash encountered in excavating the diversion channel was unsuitable to backfill the channel, and required additional suitable material.

WRHC further contends that the diversion channel liner failure, bank and crossing collapse, channel enlargement, and resulting loss of access to the dam site by the crossing for construction materials and equipment, were caused by the so-called “slash” material encountered in the diversion channel. This argument is fatally flawed.

First, the channel liner failure, bank cave-in, and crossing collapse, began not where the “slash” was located, but rather where WRHC got “into the good material . . . what we was [sic] doing was like a parallel trench. We just had a pinnacle of dirt that wasn’t tied in[,] that had been excavated on both sides that caved in” (finding 26). Moreover, even after the crossing began to slump, and some culverts were partially crushed, the channel banks and liner adjoining the crossing were still intact and stable (findings 27, 40). Therefore, those liner and crossing failures did not originate from the slash material; they would have failed even if no slash had been present.

Second, WRHC designed a diversion channel six to eight feet wide at the bottom, twenty feet wide at the top, on or before 14 November 1997 (finding 13). On 8 December 1997 WRHC reported that the Pecos River rose several inches (finding 19), and on 17 December 1997 that WRHC had increased the diversion channel’s size by 20 to 25% because snow fall was 180% of normal (finding 23). The configuration of the culverts WRHC installed on 17 December 1997 differed from that WHRC proposed to the ACOE on 15 December 1997 (findings 22-24). Therefore, it is at least equally, if not more, probable, that the channel liner failure, channel bank cave-ins, crossing collapse, channel enlargement, and resulting loss of access to the dam site by the crossing for construction materials and equipment, were caused by WRHC’s inadequately sized diversion channel and improperly configured culverts.

II.

To recover for undisclosed superior knowledge, the contractor must prove that: (1) it undertook to perform without vital knowledge of a fact which affected performance cost or duration; (2) the Government was aware that the contractor had no knowledge of and had no reason to obtain such information; (3) any contract specification supplied by the Government misled the contractor or did not put it on notice to inquire; and (4) the Government failed to provide the relevant information. *See Hercules, Inc. v. United States*, 24 F.3d 188, 196 (Fed. Cir. 1994), *aff’d on other grounds*, 516 U.S. 417 (1996). WRHC argues that the ACOE withheld knowledge of prior problems with slash on Pecos River dam projects, some diversion channel liners that did not work, and some diversion channels that failed (finding 36).

WRHC failed to prove that the ACOE knew of slash at the Los Trigos Diversion Dam site before contracting with WRHC, that the ACOE knew that WRHC was ignorant of such knowledge, that slash caused some liners not to work and some prior diversion channels to fail on previous Pecos River dam contracts, or that all such prior contracts were impossible to perform (finding 36). Therefore, WRHC failed to establish the four elements of proof of superior knowledge, and the ACOE’s knowledge of prior problems with channel liners and slash on New Mexico rivers did not come within the superior knowledge rationale. *See American Ship Building Co. v. United States*, 654 F.2d 75, 228 Ct. Cl. 220 (1981); *Piasecki Aircraft Corp. v. United States*, 667 F.2d 50, 229 Ct. Cl.

208 (1981) (Government is not obligated to furnish bidders generalized information concerning difficulties encountered by prior contractors).

III.

WRHC argues that contract 28 specified that the 40' disturbance zone was for the diversion channel and for stockpiling excavated material and work (app. br. at 19), and such specification was defective because the 40' disturbance zone was insufficient therefor. This argument fails because WRHC did not prove that it was impossible or commercially impracticable to meet the 40' zone disturbance performance requirement. *See Marengo, Inc.*, ASBCA No. 51310, 01-1 BCA ¶ 31,381 at 154,964 (no Government liability unless performance standards were impossible or commercially impracticable to meet). It is true that WRHC's planned 20'-wide diversion channel enlarged to 60' in places after WRHC diverted the Pecos River on 18 December 1997 (findings 13, 31). Such enlargement occurred because of the combination of abnormal snowfall and water (finding 23); WRHC left a trench parallel to the diversion channel where the bank first cracked, allowing water to enter behind the liner (finding 26); WRHC decided not to repair or rebuild the diversion channel after the crossing washed out (finding 30); and WRHC's culvert and crossing were structurally inadequate (findings 24, 40).

In conclusion, we sustain the appeal to the extent stated above in Part I (with respect to suitability of the slash material), and deny the balance of the appeal. The appeal is remanded to the parties to resolve quantum.

Dated: 1 February 2002

DAVID W. JAMES, JR.
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

EDWARD G. KETCHEN
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

I concur

MARK N. STEMLER
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

EUNICE W. THOMAS
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA No. 52938, Appeal of W. R. Henderson Construction, Inc., rendered in conformance with the Board's Charter.

Dated:

EDWARD S. ADAMKEWICZ
Recorder, Armed Services
Board of Contract Appeals