NorthWest Colorado Consultants, Inc.
Geotechnical / Environmental Engineering • Materials Testing

March 18, 2022

Gray Stone LLC – Bob Amin
c/o Four Points Surveying and Engineering
Joe Wiedemeier, P.E.
PO Box 775966
Steamboat Springs, CO 80477

Job Number: 22-12552

Subject: Subsoil and Foundation Investigation, Proposed Hampton Inn and Holiday Inn Express, Lot 1, Filing 3, Indian Meadows Subdivision, Steamboat Springs, Colorado..

Bob and Joe,

This report presents the results of the Subsoil and Foundation Investigation for the proposed Hampton Inn and Holiday Inn Express buildings to be constructed within Lot 1, Filing 3 of the Indian Meadows Subdivision in Steamboat Springs, Colorado. The approximate location of the project site is shown in Figure #1.

NWCC, Inc. (NWCC) scope of our work included obtaining data from observations made at the site, logging of four test holes and six test pits, sampling of the probable foundation soils, and laboratory testing of the samples obtained. This report presents recommendations for economically feasible and safe type foundations, as well as allowable soil pressures and other design and construction considerations that are advisable, but not necessarily routine to quality design and building practices.

For design purposes, NWCC has assumed that building loads will be moderate to high, typical of this type of commercial construction. If loadings or conditions are significantly different from those above, NWCC should be notified to reevaluate recommendations in this report.

**Proposed Construction:** NWCC understands a Hampton Inn building with 80 rooms and Holiday Inn Express with 72 rooms will be constructed at the site. We also understand a parking lot and access roads will be constructed at the site. It appears that both hotel buildings will be constructed within the western half of the property and the parking lots and access roads will be constructed primarily within the eastern half of the property.

NWCC also understands that the lower levels of the buildings will be constructed with slab-on-grade floor systems placed approximately 2 to 3 feet above the existing ground surface and the parking lot and access roadway areas will be raised 1 to 4 feet above the existing ground surface.

**Site Conditions:** The proposed building sites are located to the north and south of existing hotels, to the east of US HWY40 in Steamboat Springs. The proposed building sites are currently vacant. The northwestern portion of the site was previously a small dirt parking area. Approximately 2 to 3 feet of snow was on the ground surface at the time of the field investigation. The site appears to be vegetated primarily with sparse weeds and grasses. The proposed building sites are relatively flat due to previous grading.

**Subsurface Conditions:** To investigate the subsurface conditions across the site four (4) test holes were advanced on February 24, 2022, with an all-terrain CME 45 drill rig using 4-inch continuous flight augers. Test pits were also excavated on February 14, 2022, with a Cat 305.5E trackhoe. The approximate test hole and test pit locations are shown in Figure #2.

Subsurface conditions encountered at the site were variable and generally consisted of a layer of fill materials overlying a layer of topsoil and organic materials overlying natural sands, and sands and gravels to the maximum depth investigated, 19 feet beneath the existing ground surface (bgs). It should be noted practical rig refusal was encountered in Test Hole 4 at a depth of 18 feet in dense, large cobbles. Graphic logs of the exploratory test pits are shown in Figure #3, logs of the test holes are shown in Figure #4 and the associated Legend and Notes are presented in Figure #5.

Fill materials were encountered at the ground surface in all test holes and test pits and extended to depths ranging from 2 to 4 feet bgs. Fill materials consisted of primarily sands that were silty to clayey, low to non-plastic, fine to coarse grained with cobbles, medium dense to dense, moist to wet and dark brown to brown in color. The fill materials were, in most test pits, underlain by a layer of fabric. A sample of the fill materials classified as an SM soil in accordance with the Unified Soil Classification System (USCS).

A layer of natural topsoil and organics was encountered beneath the fill materials and extended to depths ranging from 5 to 7 feet bgs. The natural topsoil and organic materials were sandy, non plastic, soft, moist to wet, had a strong organic odor and were black to dark brown in color.

Sands and gravels were encountered beneath the topsoil and organic materials in all test holes and test pits, apart from Test Pit 1, and extended to the maximum depth investigated. Sands and gravels were silty, non-plastic, fine to coarse grained with cobbles and occasional sand lenses, medium dense to dense, moist to wet and dark brown to brown in color. A sample of the sands and gravels classified as an SM soil in accordance with the USCS.

Sands were encountered beneath the topsoil and organic materials in Test Pit 1 and extended to the maximum depth investigated in that test pit, 10 feet bgs. Sands layers were also encountered within the sands and gravels in Test Holes 2 and 4. The sands were silty, non plastic, fine to coarse grained with gravels, loose to medium dense, moist to wet and brown in color.

Groundwater was encountered in all test holes and test pits at depths ranging from 3 to 6 feet bgs at the time of drilling/ excavation. It should be noted that the groundwater conditions at the site can be expected to fluctuate with seasonal changes in precipitation, runoff, and flows in Walton Creek.

Based on anticipated geologic site conditions, NWCC recommends a **Site Class C** designation be used in structural design calculations in accordance with Table 20.3-1 in Chapter 20 of ASCE 7.

**Foundation Recommendations:** Based on the subsurface conditions encountered in the test pits and test holes, the results of the field and laboratory investigations and our understanding of the proposed construction, NWCC believes an economically feasible and safe type of foundation system for the hotels would consist of rammed aggregate piers (RAP). The rammed aggregate piers are typically constructed to bridge poor bearing soils, such as the existing fill materials and topsoil and organic materials encountered at this site, extending down to a suitable bearing layer, such as the underlying natural sands and gravels. A RAP foundation system should develop an end bearing pressure of at least 5,000 psf for aggregate piers founded in the sand and gravels. A RAP foundation system has the advantage of not only supporting shallow foundation elements, but also supporting floor slab areas and improving the engineering characteristics of the existing fill materials and native soils between the piers, thus decreasing the potential for floor slab movement and eliminating the need for structural slabs or structural floors over crawlspaces, or removal of the existing fill materials and topsoil and organic materials.

RAP foundation elements are designed as proprietary foundation systems. If a RAP foundation system is selected, NWCC should be contacted to coordinate with the RAP contractor/design team during foundation design. Installation of the RAP system and post construction verification testing should be observed on a full-time basis by NWCC.

**Alternative Deep Foundation Recommendations:** An alternative deep foundation system for the buildings would be to place the buildings on deep foundation systems consisting of helical screw piles advanced into the natural sands and gravels. The helical screw pile foundations will place the bottom of the foundations in a zone of relatively stable moisture content and eliminate the risk of foundation movement from consolidation of the existing fill materials and natural topsoil and organic materials. It should be noted that rig/pile refusal will not be acceptable in fill materials.

Utilizing this type of foundation, each column is supported on a single or group of screw piles and the structures are founded on grade beams or pier caps that are supported by a series of piles. Load applied to the piles is transmitted to the natural soils through the end bearing pressure at the helices of the screw pile. Foundation movement should be less than ½-inch if the following design and construction conditions are observed.

The helical screw pile foundation system should be designed by a qualified engineer, using industry standards and be installed by a licensed/certified installer. If pile groups are required, we recommend a minimum pile spacing of 3 times the largest helix to achieve the maximum capacity of each individual pile. Lateral loads should be resisted using battered piles or tiebacks or through passive soil pressures against foundation walls or grade beams.

We strongly recommend that at least two test piles be advanced at each building site so that the torque versus depth relationships can be established and the proper shaft and helix size and type can be determined. In addition, load testing of the helical screw piles is strongly recommended to verify the design capacity of the

piles. Difficult installation should be anticipated due to the presence of cobbles and boulders in the fill materials.

A representative of this office should observe the test piles/load test and helical screw pile installations.

NWCC also recommends the following:

- Minimum 6-inch diameter helix;
- Minimum installation torque of 4,000 ft-lbs;
- Full-time installation observation by a qualified special inspector;
- Review of the Contractor's quality control plan regarding instrumentation calibration and testing, materials QC, and pile installation procedures.

**Alternate Shallow Foundation Recommendations:** NWCC believes that a feasible shallow foundation system for the proposed buildings would consist of footings founded on undisturbed sands and gravels or on properly compacted structural fill materials placed over the natural sands and gravels after all of the existing fill materials and topsoil and organic materials are removed.

The design and construction details presented below should be observed if a shallow foundation system is opted for.

1) Footings placed on the natural sands and gravels or properly compacted structural backfill materials should be designed using an allowable soil bearing pressure of 3,000 psf. No dead load is required for footings placed on sands and gravels or on properly compacted structural fill materials after the existing fill materials and topsoil and organic materials are removed.

2) Footings or pad sizes should be computed using the above soil pressure and placed on the natural sands and gravels encountered below the fill materials and natural topsoil and organic materials or on compacted structural fill or flow fill placed on the natural sands and gravels.

3) Any existing fill materials and any natural topsoil and organic materials found beneath the footings when excavations are opened should be removed and footings extended down to competent sands and gravels prior to concrete or structural fill placement. Any fill materials placed beneath the footings should be a non-expansive granular soil approved by NWCC prior to placement. The fill materials placed under the footings should be uniformly placed and compacted in 6 to 8-inch loose lifts and compacted to at least 100% of the maximum standard Proctor density and within 2% of the optimum moisture content determined in accordance with ASTM D-698, or to at least 80% of the maximum relative density in accordance with ASTM D4253/4254 if free draining gravels are used as structural fill. The structural fill materials should extend out from the edge of the footings on a 1(horizontal) to 1(vertical) or flatter slope.

4) The ultimate coefficient of friction for footing sliding can be taken as 0.4 times the vertical dead load.

5) Foundation walls should be designed and reinforced to span an unsupported distance of 10 feet or the length between pads, whichever is greater.

6) Footings or pads should be placed well enough below final backfill grades to protect them from frost heave. Forty-eight (48) inches is typical for this location considering normal snow cover and other winter factors.

7) Based on experience, NWCC estimates total settlement for footings and pads designed and constructed as discussed in this section will be approximately 1 inch. Additional bearing capacity values along with the associated settlements are presented in Figure #6.

8) Based on the observed water levels during exploration and assumed depths of foundation elements dewatering of the site during construction will likely be necessary.

9) NWCC must be retained by the client to observe the foundation excavations when they are near completion to identify bearing soils and confirm the recommendations in this report, as well as test the structural fill materials for compaction.

**Retaining Structures and Foundation Wall Recommendations:** Foundation walls and retaining structures that are laterally supported and can be expected to undergo only a moderate amount of deflection may be designed for lateral earth pressured calculated based on equivalent fluid unit weight of 45 pcf for imported, free-draining granular backfill and 50 pcf for the on-site soils.

Cantilevered retaining structures can be expected to deflect sufficiently to mobilize the full active earth pressure condition. Therefore, the structures may be designed for a lateral earth pressure computed based on an equivalent fluid unit weight of 35 pcf for imported free-draining granular backfill and 40 pcf for the on-site soils.

The retaining structures should also be designed for appropriate hydrostatic and surcharge pressures such as adjacent buildings, traffic, and construction materials. An upward sloping backfill and/or natural slope will also significantly increase the earth pressures on foundation walls and retaining structures, and the structural engineer should carefully evaluate these additional lateral loads when designing the walls.

The lateral resistance of retaining wall foundations placed on undisturbed clays, sands and gravels or properly compacted structural fill materials will be a combination of the sliding resistance of the footings on the foundation materials and the passive pressure against the sides of the footings. Sliding friction can be taken as 0.4 times the vertical dead load. Passive pressure against the sides of the footing can be calculated using an equivalent fluid pressure of 275 pcf. The fill placed against the sides of the footings to resist lateral loads should be compacted to at least 100% of the maximum standard Proctor density and near the optimum moisture content.

NWCC recommends imported granular soils for backfilling foundation walls and retaining structures because their use results in lower lateral earth pressures. The imported granular materials should be placed within 2 to 3 feet of the ground surface. Imported granular soils should be free draining and have less than 5 percent

passing the No. 200 sieve. The granular soils behind the foundation and retaining walls should be sloped from the base of the wall at an angle of at least 45 degrees from the vertical. The upper 2 to 3 feet of fill should be a relatively impervious soil or pavement structure to prevent surface water infiltration into the backfill.

The wall backfill should be carefully placed in uniform lifts and compacted to at least 95 percent of the maximum standard Proctor density and near the optimum moisture content. Care should be taken not to over compact the backfill since this could cause excessive lateral pressure on the walls. Some settlement of deep foundation wall backfill materials will occur even if the material is placed correctly.

**Floor Slabs:** NWCC understands the lower levels of the building will most likely be constructed with concrete slab-on-grade floor systems. The on-site soils are capable of supporting slab-on-grade construction; however, NWCC recommends removing the topsoil and organic materials or consider an underslab ventilation system to reduce odors from migrating up from the decaying organic materials. The topsoil and organic materials found beneath the existing fill materials and fabric were very odorous, and this odor from decaying organic matter could potentially migrate up through the slabs into the structures.

The floor slabs should be provided with control joints placed a maximum of 10 to 12 feet on center in each direction, depending on slab configuration, to help control shrinkage cracking. The location of the joints should be carefully checked to assure that the natural, unavoidable cracking will be controlled. The depth of the control joints should be a minimum of ¼ the thickness of the slab.

We recommend that all of the existing fill materials and topsoil and organic materials encountered be removed from underneath the floor slabs prior to concrete or structural fill placement. Any fill materials placed beneath the floor slabs should be a non-expansive granular soil approved by NWCC prior to placement. The fill should be placed in 6 to 8 inch loose lifts and be compacted to at least 95% of the maximum standard Proctor density and within 2% of the optimum moisture content. The existing fill materials at the site will be suitable for use as granular fill materials under the slabs or parking lots and access roads. Topsoil and organic materials should be placed in landscaped areas or hauled off site.

**Perimeter Drainage System:** To enhance site drainage and improve foundation and interior slab-on-grade performance, NWCC recommends a drainage system be installed around the building perimeter for each building. Localized perched water or runoff can infiltrate the structure at the foundation level. This water can be one of the primary causes of differential foundation and slab movement.

The drainage system should be located around the entire building perimeter and be placed and at least 12 inches below interior slab or crawl space grades and a minimum of 24 inches below final grades to provide frost protection. Ideally, the drainage system should be centered along roof drip-line locations. In locations where roof driplines are not present, the drainage system may be located within 24 inches of foundation walls. Drains should be insulated using 2-inches of rigid polystyrene insulation board in locations higher than 48 inches below final grade to provide protection against freezing.

Perimeter drainage system piping should be constructed using perforated PVC pipe that meets or exceeds ASTM D-3034/SDR 35 requirements to provide satisfactory long-term function and rapid runoff of water.

The holes in the drainpipes should be oriented down between 4 o'clock and 8 o'clock to promote rapid runoff of the water. The drainpipes should be covered with at least 12 inches of free draining gravel and be protected from contamination by a geotextile filter fabric covering of Mirafi 140N subsurface drainage fabric or an equivalent product. The drainpipes should have a minimum slope of 1 percent and be daylighted at positive outfalls that are protected from freezing. If the drainpipes cannot be daylighted, the drains should be led to sumps where the water can be pumped. Multiple daylights or sumps are recommended for the proposed structures. A typical perimeter/underdrain detail is shown in Figure #7.

Caution should be taken when backfilling so as not to damage or disturb the installed drains. NWCC recommends the drainage piping include cleanouts provided at minimum 100-foot intervals, be protected against intrusion by animals at the outfalls and be tested prior to backfilling. NWCC should be retained to provide periodic observations of underdrain construction to verify installation has been accomplished in general accordance with these recommendations. Flow testing of the system is recommended.

**Surface Drainage:** Proper surface drainage at this site is of paramount importance for minimizing infiltration of surface drainage into wall backfill and bearing soils, which could result in increased wall pressures, differential foundation, and slab movement. The following drainage precautions should be observed during construction and at all times after the structures have been completed:

1) Ground surface surrounding structures should be sloped (minimum of 1.0 inch per foot) to drain away from structures in all directions to a minimum of 10 feet. Ponding must be avoided. If necessary, raising the top of foundation walls to achieve a better surface grade is advisable.

2) Non-structural backfill placed around structures should be compacted to at least 95% of the maximum standard Proctor density at or near the optimum moisture content to minimize future settlement of the fill. Backfill should be placed immediately after the braced foundation walls are able to structurally support the fill. Puddling or sluicing must be avoided.

3) Top 2 to 3 feet of soil placed within 10 feet of foundations should be impervious in nature to minimize infiltration of surface water into wall backfill.

4) Roof downspouts and drains should discharge well beyond the limits of all backfill. Roof overhangs, which project two to three feet beyond foundation walls, should be considered if gutters are not used.

5) Landscaping, which requires excessive watering and lawn sprinkler heads, should be located a minimum of 10 feet from the foundation walls of the structures or any permanent, unretained cuts. Additionally, large piles of man-made or natural snow should be removed prior to melting within 10 feet of the foundation walls of the structures or any permanent, unretained cuts.

6) Plastic membranes should not be used to cover the ground surface adjacent to foundation walls.

**Site Grading and Driveway Recommendations:** Site grading should be carefully planned to provide positive surface drainage away from all of the building and parking areas. The building and parking areas

should be placed on the site so that positive drainage away from these structures can be provided. Surface diversion features should be provided around parking areas to prevent surface runoff from flowing across the driveway surfaces.

The fill materials to be placed at the site should be examined and tested by this office to determine suitability for use as fill material prior to placement. The on-site fill materials, sands and sands and gravels should be suitable for use in fills constructed beneath the structures and roadway areas.

Prior to placing any additional fill materials at the site, NWCC strongly recommends the existing fill materials be scarified, moisture conditioned and then recompacted to at least 95% of the maximum modified Proctor density and within 2 percent of the optimum moisture content determined in accordance with ASTM D-1557/AASHTO T-180. After the fill materials have been recompacted, we recommend these areas be proofrolled with a heavily loaded water or dump truck. Any areas exhibiting moderate deflection or rutting will most likely have to be stabilized before placing any additional fill materials.

Based on the subsurface conditions encountered at the site and our assumption of the traffic loadings, we recommend that the driveways, access roads and any pavement areas subjected to truck traffic be constructed with a minimum of 4 inches of hot mix asphalt (HMA), a minimum of 4 inches of base course aggregates overlying a minimum of 8 inches of pit run sands and gravels (subbase aggregates). Areas subjected to automobile traffic only, such as the parking stalls, may be constructed with a minimum of 3 inches of hot mix asphalt (HMA), a minimum of 4 inches of base course aggregates overlying a minimum of 8 inches of pit run sands and gravels (subbase aggregates).

The asphalt pavement materials should consist of a hot bituminous plant mix material meeting the job mix formula established by a qualified engineer and which meets Colorado Department of Transportation (CDOT) specifications.

Placement and compaction of the HMA should generally conform to CDOT guidelines outlined in Section 401 of the Standard Specifications for Road and Bridge Construction. Base course materials should consist of a well-graded aggregate base course material that meets Class 6 grading and durability requirements. Subbase materials should consist of pit run sand and gravel material that meets Class 3 grading requirements. We recommend that the base course and subbase aggregates be compacted to at least 95% of the maximum modified Proctor density and within 2 percent of the optimum moisture content determined in accordance with ASTM D-1557/AASHTO T-180.

The subgrade fill materials placed beneath the roadways should consist of approved sand and gravel materials and be constructed in 6 to 8 thick inch lifts and be compacted to at least 95% of the maximum modified Proctor density and within 2% of the optimum moisture content determined in accordance with ASTM D1557. We believe the topsoil and organic materials do not need to be removed from beneath the roadways prior to fill placement.

**Limitations:** The recommendations provided in this report are based on the soils encountered at this site and NWCC's understanding of the proposed construction. NWCC believes this information gives a high degree of reliability for anticipating the behavior of the proposed structures; however, NWCC's recommendations are professional opinions and cannot control nature, nor can they assure the soils profiles

beneath those or adjacent to those observed. No warranties expressed or implied are given on the content of this report.

This report is based on the investigation at the described site and on specific anticipated construction as stated herein. If either of these conditions is changed, the results would also most likely change. Therefore, NWCC strongly recommends that our firm be contacted prior to finalizing the construction plans so that we can verify our recommendations are being properly incorporated into the construction plans.

Man-made or natural changes in the conditions of a property can also occur over time. In addition, changes in requirements due to state-of-the-art knowledge and/or legislation do from time to time occur. As a result, the findings of this report may become invalid due to these changes. Therefore, this report is subject to review and not considered valid after a period of 3 years or if conditions, as stated above, are altered.

It is the responsibility of the owner or his representative to ensure that the information in this report is incorporated into the plans and/or specifications and construction of the project.

If you have any questions regarding this report or if NWCC may be of further service, please do not hesitate to contact us.

Sincerely,
**NWCC, INC.**

Erika K. Hill, P.E, P.G.
Project Engineer


Reviewed by Brian D. Len, P.E.
Principal Engineer

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NOT TO SCALE

PROJECT SITE


| | | |
|---|---|---|
| **Title:** VICINITY MAP | **Date:** 3/16/22 | NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing |
| **Job Name:** Proposed Hampton Inn and Holiday Inn Express | **Job No.** 22-12552 | (970)879-7888 · Fax (970)879-7891 2580 Copper Ridge Drive · P.O. Box 775226 Steamboat Springs, Colorado 80477 |
| **Location:** Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | **Figure** #1 | |

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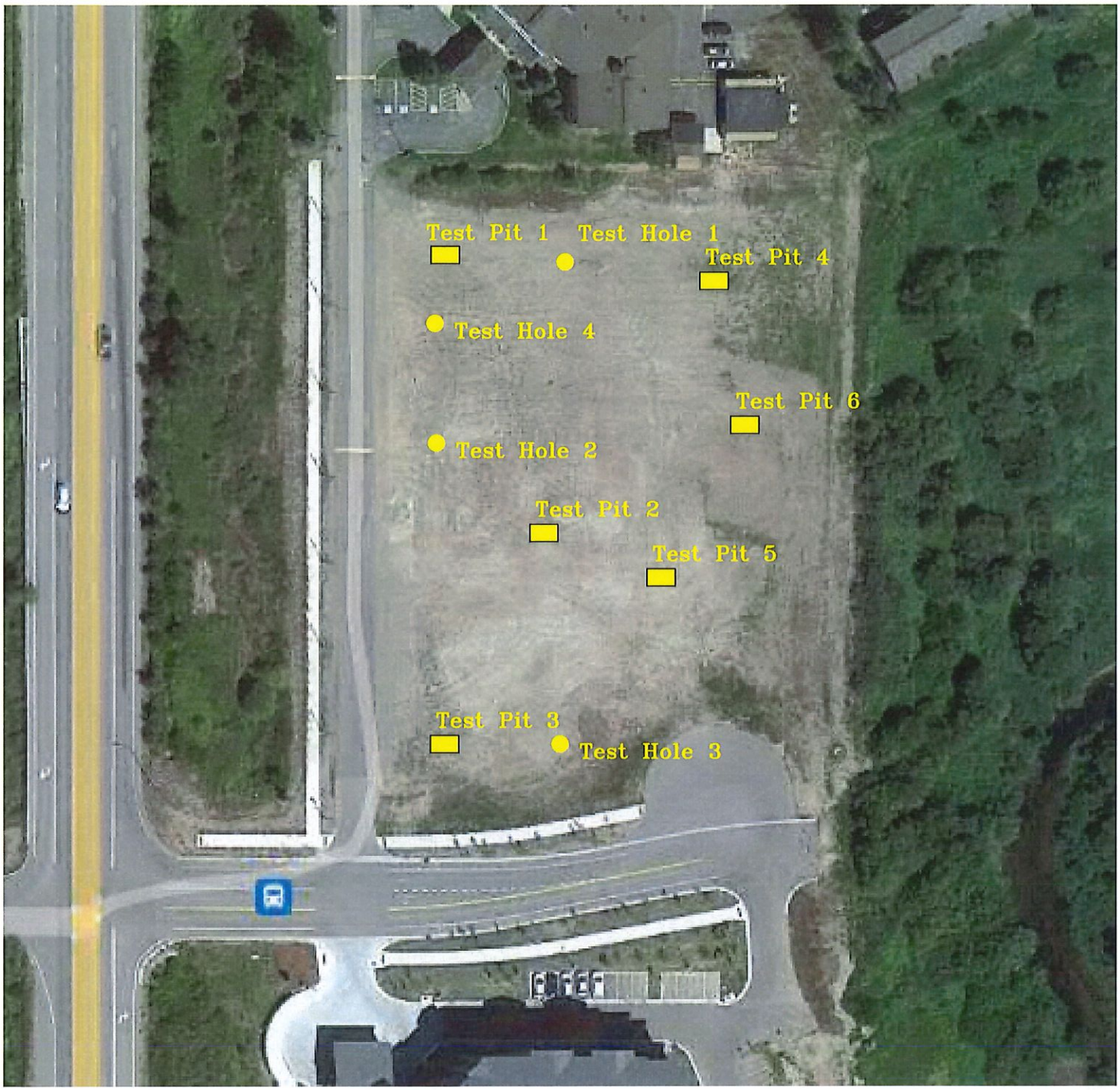
NOT TO SCALE

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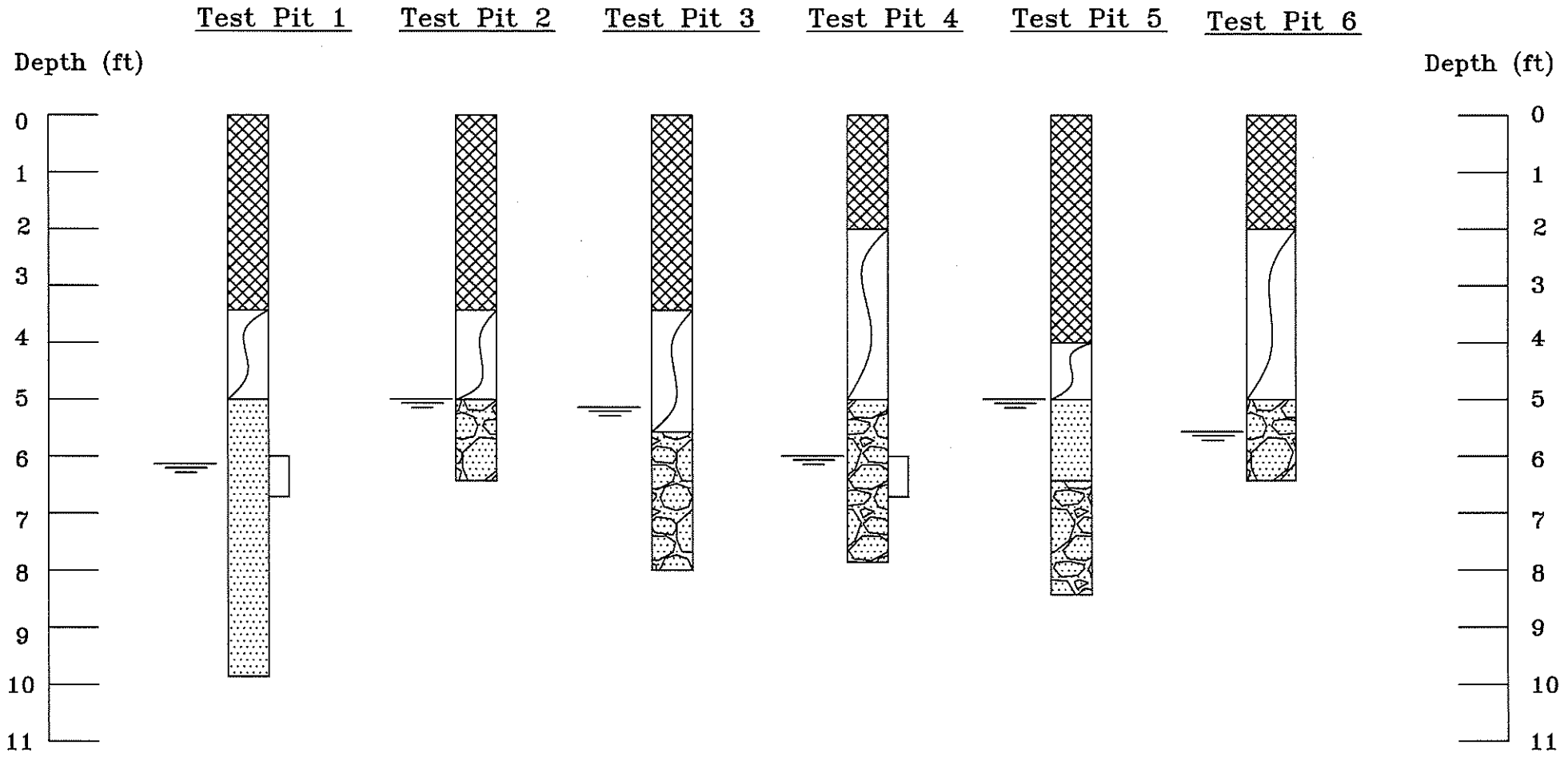
|---|---|---|
| **Title:** SITE PLAN–LOCATION OF TEST HOLES | **Date:** 3/16/22 | NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering · Materials Testing |
| **Job Name:** Proposed Hampton Inn and Holiday Inn Express | **Job No.** 22–12552 | (970)879-7888· Fax (970)879-7891 2580 Copper Ridge Drive· P.O. Box 775226 Steamboat Springs, Colorado 80477 |
| **Location:** Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | **Figure** #2 | |

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| Title: | TEST PIT LOGS | Date: | 3/16/22 |
| Job Name: | Proposed Hampton Inn and Holiday Inn Express | Job No. | 22-12552 |
| LOCATION: | Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | Figure | #3 |

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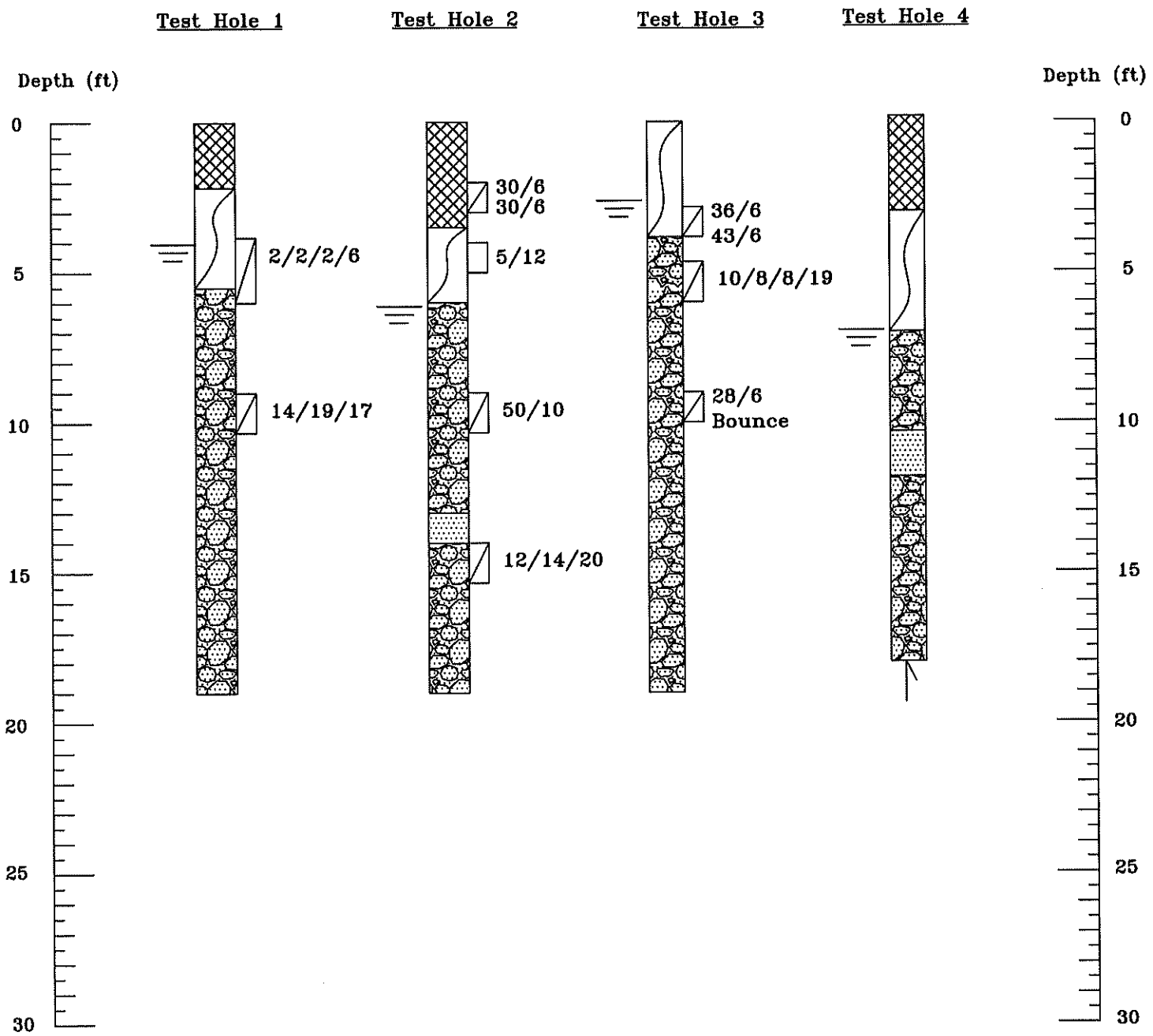


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|---|---|---|
| Title: LOGS OF EXPLORATORY TEST HOLES | Date: 3/16/22 | NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing |
| Job Name: Proposed Hampton Inn and Holiday Inn Express | Job No. 22-12552 | (970)879-7888 - Fax (970)879-7891 2580 Copper Ridge Drive - P.O. Box 775226 Steamboat Springs, Colorado 80477 |
| Location: Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | Figure #4 | |

LEGEND:

FILL–SANDS: Silty to clayey, low to non plastic, fine to coarse grained with cobbles, medium dense to dense, moist to wet and dark brown to brown in color and underlain by fabric.

TOPSOIL AND ORGANIC MATERIALS: Sandy, non plastic, soft, moist to wet, strong organic odor and black to dark brown.

SANDS AND GRAVELS: Silty, non plastic, fine to coarse grained with cobbles and occasional sand lenses, medium dense to dense, moist to wet and dark brown to brown in color.

SANDS: Silty, non plastic, fine to coarse grained with gravels, loose to medium dense, moist to wet and brown in color.

Drive Sample, 2–inch I.D. California Liner Sampler.

Drive Sample, Split Spoon Sampler.

5/12 Drive Sample Blow Count, indicates 5 blows of a 140–pound hammer falling 30 inches were required to drive the California Liner sampler 12 inches.

2/2/2/6 Drive Sample Blow Count, indicates split spoon sampler with 2, 2, 2 and 6 blows of a 140–pound hammer falling 30 inches were required to drive the split spoon sampler 24 inches total with four 6–inch increments.

Bounce Indicates hammer bounced on cobble/boulder

Indicates depth at which groundwater was encountered when measured at time of drilling/excavation.

Indicates depth at which practical rig refusal was encountered in very dense cobbles.

NOTES:

1) Test pits were advanced February 14, 2022 using a Cat 305.5E trackhoe. Test holes were drilled on February 24, 2022 with an all–terrain CME 45 drill rig using 4–inch diameter continuous flight augers.

2) Locations of the test holes and test pits were determined in the field by pacing from existing features.

3) Elevations of the test holes were not measured, and the logs are drawn to the depths investigated.

4) The lines between materials shown on the logs represent the approximate boundaries between material types and transitions may be gradual.

5) The water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water levels will probably occur with time.

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| Title: LEGEND AND NOTES | Date: 3/16/22 |
| Job Name: Proposed Hampton Inn and Holiday Inn Express | Job No. 22–12552 |
| Location: Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | Figure #5 |

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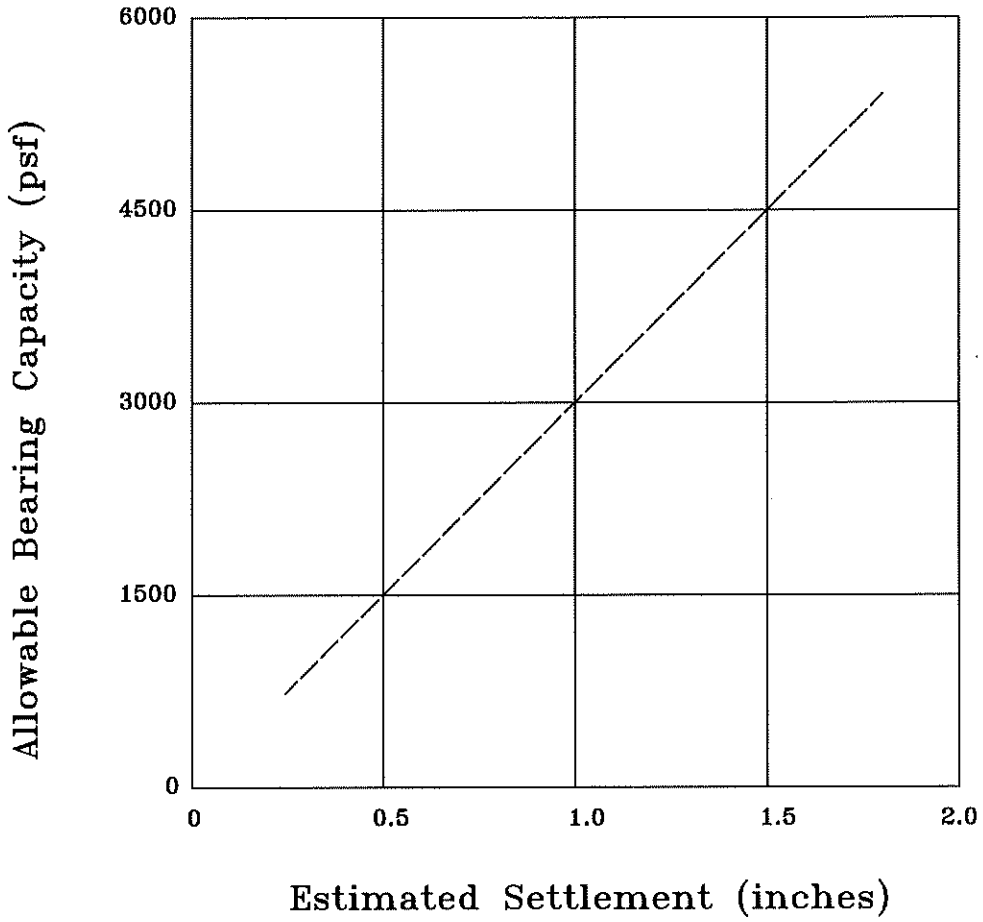


Note: These values are based on footing widths of 1 to 4 feet. If the footing width is to be greater than 4 feet in width, then we should be notified to re-evaluate these recommendations.

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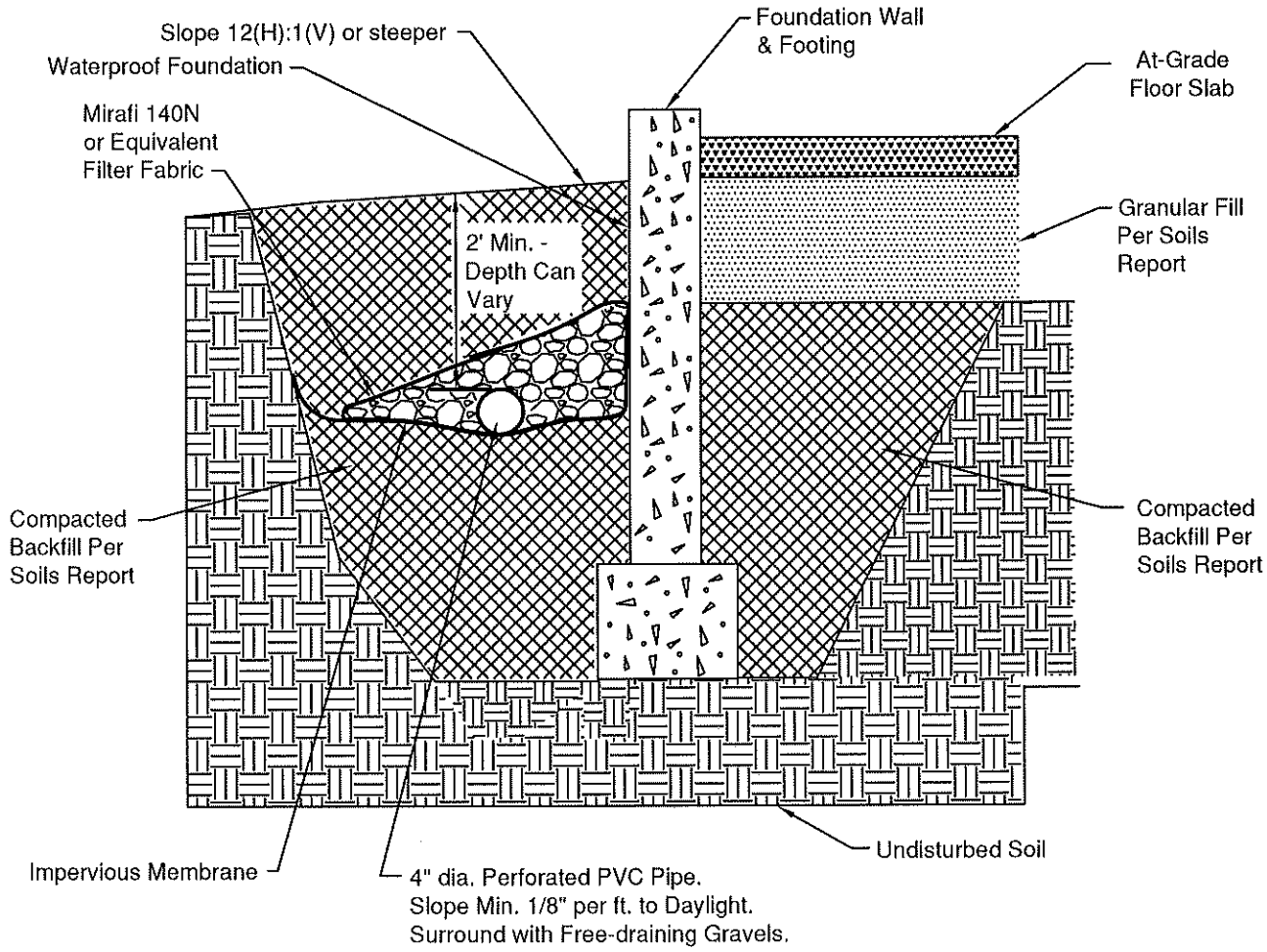
| Title: BEARING CAPACITY CHART | Date: 3/16/22 | NWCC Northwest Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing (970)879-7888 - Fax (970)879-7891 2586 Copper Ridge Drive Steamboat Springs, Colorado 80487 |
| Job Name: Proposed Hampton Inn and Holiday Inn Express | Job No. 22-12552 | |
| Location: Lot 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | Figure #6 | |

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|---|---|---|
| **Title:** SHALLOW PERIMETER DRAIN DETAIL | **Date:** 3/16/22 | NWCC Northwest Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing (970)879-7888 - Fax (970)879-7891 2580 Copper Ridge Drive Steamboat Springs, Colorado 80477 |
| **Job Name:** Proposed Hampton Inn and Holiday Inn Express | **Job No.** 22-12552 | |
| **Location:** Lots 1, F3 Indian Meadows Subdivision, Steamboat Springs, CO | **Figure** #7 | |

*NWCC, Inc.*

TABLE 1

# SUMMARY OF LABORATORY TEST RESULTS

| SAMPLE LOCATION | | NATURAL MOISTURE CONTENT (%) | NATURAL DRY DENSITY (pcf) | ATTERBERG LIMITS | | GRADATION | | PERCENT PASSING No. 200 SIEVE | UNCONFINED COMPRESSIVE STRENGTH (psf) | SOIL or BEDROCK DESCRIPTION | UNIFIED SOIL CLASS. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TEST HOLE | DEPTH (feet) | | | LIQUID LIMIT (%) | PLASTICITY INDEX (%) | GRAVEL (%) | SAND (%) | | | | |
| | | | | | | | | | | | |
| 2 | 2 | 9.4 | | 23 | 3 | 30 | 52 | 18 | | FILL: Silty Gravelly Sand | SM |
| | | | | | | | | | | | |
| 3 | 4 1/2 | 11.2 | | NP | NP | 36 | 58 | 6 | | Very Gravelly Sand | SM |
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JOB NUMBER: 22-12552