| NORTHWEST CONSULTANTS, INC.                  | SHEET 1 OF 7 S                             | HEETS    |
|--|--|----------|
| SUBJECT DESC.: MED-18-1404                   |  |          |
| Project ID Number: 92953                     | NCI JOB NUMBER:                            |          |
| DESIGNED BY:DLCDATE: 6/14/18                 | CHECKED BY: APM DATE: 6                    | /14/18   |
| 503-11100 - COFFERDAMS AND EXCAVATION BRACIN | <u>IG</u>                                  | (lump)   |
| B/ Footing Elevation RA= 910.1 ft            |  |          |
| Depth Below Footing = 4 ft                   |  |          |
| Total Rear Substructure Width = 8.25 ft      |  |          |
| Front of RA Footing to Embankment = 15       | ft   |          |
| Total Area = 34964.325 sft                   |  |          |
| Cost = \$0 /sft                              |  |          |
| Total = \$10,000.00                          |  |          |
|  |  |          |
| 503-21300 - UNCLASSIFIED EXCAVATION          |  | (lump)   |
| Embankment behind RA Footing = 922.03        | RA Embankment Elevation = 914.844          |          |
| B/ Footing Elevation RA= 910.10              |  |          |
| Footing Toe = 2 ft                           |  |          |
| RA Footing Heel = 2.5 ft                     |  |          |
| Total Rear Substructure Length = 26.68 ft    |  |          |
| Flat distance behind footing = 1 ft          |  |          |
| Rear Abutment Volume = 3392.47 cft = 1       | 125.6 cyd                                  |          |
| Total = 125.647 cyd = 126 cyd =              | 1 lump                                     |          |
| 505-11100 - PILE DRIVING EQUIPMENT MOBILIZA  | ATION                                      | (lump)   |
| Estimate at \$10,000                         | <del>o.</del>                              | (idilip) |
| Estimate at \$10,000                         |  |          |
| 507-00500 - 12" CAST-IN-PLACE REINFORCED CO  | ONCRETE PILES, DRIVEN                      | (ft)     |
| Estimate at 65 feet RA and 50 feet FA base   | ed on design information provided by S&ME. |          |
| Number of Piles at RA = 12 each              |  |          |
| Number of Piles at FA = 12 each              |  |          |
| Total Length = 1380 ft                       |  |          |
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| NORTHWEST CO        | NSULTA     | NTS, I  | NC.         |                          | SHEET      | 2     | OF  | 7    | SHEETS  |
|---------------------|------------|---------|-------------|--------------------------|------------|-------|-----|------|---------|
| _                   | 1ED-18-140 | )4      |             |                          |            |       |     |      |         |
| Project ID Number:  |            | 9295    |             | _ NCI JOB NUMBER:        |            |       |     |      |         |
| DESIGNED BY:        | DLC        | _ DATE  | : 6/14/18   | CHECKED BY:              | APM        |       | DA  | \TE: | 6/14/18 |
| 507-00550 - 12" CAS | ST-IN-PLA  | CE REII | NFORCED C   | ONCRETE PILES, FU        | RNISHED    |       |     |      | (ft)    |
| Estimate at 65      | feet RA a  | nd 50   | feet FA bas | ed on design information | on provide | ed by | S&M | E.   |         |
| Number of Piles a   | at RA =    | 12 e    | ach         |                          |            |       |     |      |         |
| Number of Piles a   | nt FA =    | 12 e    | ach         |                          |            |       |     |      |         |
| Total Length =      | 1500 ft    |         |             |                          |            |       |     |      |         |
| 509-10000 - EPOXY   | COATED     | REINFO  | ORCING STE  | <u>EL</u>                |            |       |     |      | (lb)    |
| Abutments =         | 9020 lb    | )       |             |                          |            |       |     |      |         |
| Total = 9020        | lb         |         |             |                          |            |       |     |      |         |
|                     |            |         |             |                          |            |       |     |      |         |
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| NORTHWEST CONSULTANTS, INC. SUBJECT DESC.: MED-18-1404 | SHEET 3 OF 7 SHEETS             |
|--|---------------------------------|
| Project ID Number: 92953 NC                            | JOB NUMBER: DATE:6/14/18        |
| 511-43510 - CLASS QC1 CONCRETE WITH QC/QA, AB          | UTMENT INCLUDING FOOTING (cyd)  |
| RA footing length = 26.68 ft                           | Footing Toe Thickness = 3.25 ft |
| FA footing length = 35.17 ft                           | Toe Length = 2 ft               |
| Footing thickness = 3 ft                               |                                 |
| RA footing width = 8.25 ft                             |                                 |
| FA footing width = 8.25 ft                             |                                 |
| Total = 1561.54 cft = 57.8348 cyd = 58                 | yd                              |
| Rear Abutment:   |                                 |
| Elevation of Top of Wingwall (Left) =                  | 923.74                          |
| Elevation of Top of Wingwall (Center Left) =           | 926.55                          |
| Elevation of Top of Wingwall (Center Right) =          | 926.27                          |
| Elevation of Top of Wingwall (Right) =                 | 924.15                          |
| Wingwall Thickness =                                   | 1.75 ft                         |
| Left Wingwall Length =                                 | 10 ft                           |
| Right Wingwall Length =                                | 8.4373 ft                       |
| Top of Abutment El. =                                  | 923.24                          |
| Bottom of Abutment El. =                               | 913.1                           |
| Abutment Length =                                      | 14.167 ft                       |
| Abutment Thickness =                                   | 3.75 ft                         |
| Backwall Volume =                                      | 78.5914 cft                     |
| Total = 874.533 cft = 32.3901 cyd = 33                 | yd                              |
|  |                                 |
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| NORTHWEST CONTROL SUBJECT DESC.: | ONSULTA<br>MED-18-14 | •                       |            |         | SHEET_    | 4 (  | OF <u>7</u> | SHEETS  |
|----------------------------------|----------------------|-------------------------|------------|---------|-----------|------|-------------|---------|
| Project ID Number:               |                      | 92953                   | NCI JOB NU | JMBER   | :         |      |             |         |
| DESIGNED BY:                     | DLC                  | DATE: <u>6/14/18</u>    | CHECKED    | 3Y:     | APM       |      | DATE:       | 6/14/18 |
| <u>511-43510 - CLAS</u>          | SS QC1 COI           | NCRETE WITH QC/QA       | , ABUTMEN  | Γ INCLU | JDING FOO | TING | (con't)     | (cyd)   |
| Forward Abutm                    | ent:                 |                         |            |         |           |      |             |         |
| Elevation                        | of Top of Wi         | ngwall (Left) =         | 925.21     |         |           |      |             |         |
| Elevation                        | of Top of Wi         | ngwall (Center Left) =  | 925.21     |         |           |      |             |         |
| Elevation                        | of Top of Wi         | ngwall (Center Right) = | 925.49     |         |           |      |             |         |
| Elevation                        | of Top of Wi         | ngwall (Right) =        | 922.71     |         |           |      |             |         |
| Wingwall                         | Thickness =          |                         | 1.75       | ft      |           |      |             |         |
| Left Wing                        | wall Length :        | =                       | 10         | ft      |           |      |             |         |
| Right Win                        | gwall Length         | 1 =                     | 11         | ft      |           |      |             |         |
| Top of Ab                        | utment El. =         |                         | 922.21     |         |           |      |             |         |
| Bottom of                        | Abutment E           | l. =                    | 914.29     |         |           |      |             |         |
| Abutment                         | Length =             |                         | 14.167     | ft      |           |      |             |         |
| Abutment                         | Thickness =          | :                       | 3.75       | ft      |           |      |             |         |
| Backwall '                       | Volume =             |                         | 77.8477    | cft     |           |      |             |         |
| Total = 769.4                    | 8 cft = 28           | 3.4993 cyd = 29         | cyd        |         |           |      |             |         |
| Total = 120                      | cyd                  |                         |            |         |           |      |             |         |
| 512-10100 - SEAL                 | ING OF CC            | NCRETE SURFACES         | (EPOXY-UR  | ETHAN   | <u>E)</u> |      |             | (syd)   |
| Average height                   | of exposed           | rear substructure =     | 7.28 ft    |         |           |      |             |         |
| Average height                   | of exposed           | forward structure =     | 4.04 ft    |         |           |      |             |         |
| Total rear wing                  | wall length =        | 18.437 ft               |            |         |           |      |             |         |
| Total forward w                  | ringwall leng        | th = 21 ft              |            |         |           |      |             |         |
| RA length =                      | 14.167 ft            |                         |            |         |           |      |             |         |
| FA length =                      | 14.167 ft            |                         |            |         |           |      |             |         |
| Wingwall/Back\                   | wall Thickne         | ss = 1.75 ft            |            |         |           |      |             |         |
| Abutment Side                    | Thickness =          | 2 ft                    |            |         |           |      |             |         |
| Height along ba                  | ack of substr        | ucture = 0.5 ft         |            |         |           |      |             |         |
| Total = 563.03                   |                      |                         | syd        |         |           |      |             |         |
|                                  |                      | ,                       |            |         |           |      |             |         |
|                                  |                      |                         |            |         |           |      |             |         |

| NORTHWEST COI                      |            |                        |                                  | SHEET 5 | OF _ 7 | SHEETS  |
|------------------------------------|------------|------------------------|----------------------------------|---------|--------|---------|
|                                    | IED-18-14( |                        | NOLIOD NILIMBED                  |         |        |         |
| Project ID Number:<br>DESIGNED BY: | DLC        | 92953<br>DATE: 6/14/18 | _ NCI JOB NUMBER:<br>CHECKED BY: | APM     | DATE:  | 6/14/18 |
| 512-33000 - TYPE 2                 | WATERP     | ROOFING                |                                  |         |        | (syd)   |
| Width of Waterpro                  | oofing =   | 3 ft                   |                                  |         |        |         |
| RA Height of Pha                   | se Joint = | 11.05 ft               |                                  |         |        |         |
| Total = 33.15                      | sft = 3.6  | 88333 syd = 4          | syd                              |         |        |         |
|                                    |            |                        |                                  |         |        |         |
| 516-13900 - 2" PRE                 | FORMED     | EXPANSION JOINT F      | FILLER                           |         |        | (sft)   |
| Length of filler =                 | 11.05      | ft                     |                                  |         |        |         |
| Depth of filler =                  | 1.75       | ft                     |                                  |         |        |         |
| Total = 19.3375                    | sft =      | 20 sft                 |                                  |         |        |         |
|                                    |            |                        |                                  |         |        |         |
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| NORTHWEST CONSUBJECT DESC.: ME | <b>SULTAN</b><br>D-18-1404 |           | C        |                 | SHEET 6 | OF <u>7</u> | SHEETS  |
|--------------------------------|----------------------------|-----------|----------|-----------------|---------|-------------|---------|
| Project ID Number:             |                            | 92953     |          | NCI JOB NUMBER: |         |             |         |
| DESIGNED BY:                   | DLC                        | DATE:_    | 6/14/18  | CHECKED BY:     | APM     | DATE:       | 6/14/18 |
| 518-21200 - POROUS             | S BACKFIL                  | _ WITH    | GEOTEXTI | LE FABRIC       |         |             | (cyd)   |
| Thickness of Footing           | ng =                       |           | 3        | ft              |         |             |         |
| Width of Backfill =            |                            |           | 2        | ft              |         |             |         |
| Approach Slab Thio             | ckness =                   |           | 0.33     | ft              |         |             |         |
| Aggregate Base Th              | nickness =                 |           | 0.50     | ft              |         |             |         |
| Depth from T/ Wing             | gwall to T/ E              | ackfill = | 0.50     | ft              |         |             |         |
| PG Elevation at                | RA =                       |           | 918.0    | 00              |         |             |         |
| Length of RA =                 |                            |           | 32.60    | ft              |         |             |         |
| B/ Footing Eleva               | tion RA=                   |           | 910.1    | 0               |         |             |         |
| NW Wingwall Le                 | ngth =                     |           | 8.437    | ft              |         |             |         |
| SW Wingwall Le                 | ngth =                     |           | 10       | ft              |         |             |         |
| NW Wingwall Av                 | erage Heig                 | ht =      | 12.11    | ft              |         |             |         |
| SW Wingwall Av                 | erage Heig                 | ht =      | 12.05    | ft              |         |             |         |
| RA Backfill Vo                 | olume =                    | 691.996   | 6 cft    |                 |         |             |         |
| PG Elevation at                | FA =                       |           | 921.0    | 00              |         |             |         |
| Length of FA =                 |                            |           | 35.17    |                 |         |             |         |
| B/ Footing Eleva               | tion FA=                   |           | 914.2    | 29              |         |             |         |
| NE Wingwall Ler                | ngth =                     |           | 10       | ft              |         |             |         |
| SE Wingwall Ler                | ngth =                     |           | 11       | ft              |         |             |         |
| NE Wingwall Ave                | erage Heigl                | nt =      | 7.92     | ft              |         |             |         |
| SE Wingwall Ave                | erage Heigh                | nt =      | 6.81     | ft              |         |             |         |
| FA Backfill Vo                 | olume =                    | 489.55    | cft      |                 |         |             |         |
| Total = 11                     | 181.55 cft                 | = 43.76   | 6 cyd =  | 44 cyd          |         |             |         |
|                                |                            |           |          |                 |         |             |         |
|                                |                            |           |          |                 |         |             |         |

| NORTHWEST CO<br>SUBJECT DESC.: | ONSULT<br>MED-18-1 | -               | INC         | ř.       |             |                     | SHEET 7            | OF <u>7</u>  | SHEETS  |
|--------------------------------|--------------------|-----------------|-------------|----------|-------------|---------------------|--------------------|--------------|---------|
| Project ID Number:             |                    | 92953           |             |          |             | NCI JOB NUMBER:     |                    |              |         |
| DESIGNED BY:                   | DLC                | DAT             | ΓΕ: <u></u> | 6/14/18  | )           | CHECKED BY:         | APM                | DATE:        | 6/14/18 |
| 518-40000 - 6" PE              | RFORATE            | ED COR          | RUG/        | ATED P   | <u> LAS</u> | STIC PIPE           |                    |              | (ft)    |
| Length of RA =                 | 32.6043            | ft              |             |          |             |                     |                    |              |         |
| Length of FA =                 | 35.167             | ft              |             |          |             |                     |                    |              |         |
| Total = 67.771                 | 13 ft =            | 68              | ft          |          |             |                     |                    |              |         |
| 540 40040 OII NO               | N DEDEC            |                 | 000         | DI 10 4- |             | DI ACTIO DIDE INC   |                    | 2141.0       | (6)     |
| 518-40010 - 6" NC              | <u>)N-PERFC</u>    | RATED           | COR         | RUGAI    | <u>IED</u>  | PLASTIC PIPE, INC   | <u>LUDING SPEC</u> | <u> IALS</u> | (ft)    |
| Length of Pipe i               | in SE Corn         | ner =           |             | 20       | ft          |                     |                    |              |         |
| Length of Pipe i               | in SW Cor          | ner =           |             | 38       | ft          |                     |                    |              |         |
| Additional Pipe                | Behind Wi          | ingwall =       | =           | 1        | ft (        | Typical Each Wingwa | all)               |              |         |
| Total = 60                     | ) ft =             | 60 ft           | ]           |          |             |                     |                    |              |         |
|                                |                    |                 |             |          |             |                     |                    |              |         |
| 523-20000 - DYNA               | AMIC LOA           | <u>D TESTI</u>  | <u>NG</u>   |          |             |                     |                    |              | (each)  |
| Total = 2                      |                    |                 |             |          |             |                     |                    |              |         |
| 523-20500 - REST               | <u>ΓRIKE</u>       |                 |             |          |             |                     |                    |              | (each)  |
| Total = 2                      |                    |                 |             |          |             |                     |                    |              |         |
|                                |                    |                 |             |          |             |                     |                    |              |         |
| _                              |                    | <u>EL PRO</u> T | <u>rect</u> | ION, TY  | <u>YPE</u>  | C WITH GEOTEXTIL    | <u>_E FABIRC</u>   |              | (cyd)   |
| Rear Abutment:<br>Length of RC |                    | 41.70           | ft          |          |             |                     |                    |              |         |
| Width of RCF                   | P =                | 24.00           | ft          |          |             |                     |                    |              |         |
| Thickness of                   | RCP =              | 2.00            | ft          |          |             |                     |                    |              |         |
| Forward Abutm                  |                    |                 |             |          |             |                     |                    |              |         |
| Length of RC                   |                    | 50.75           | ft          |          |             |                     |                    |              |         |
| Width of RCF                   | <sup>5</sup> =     | 18.80           | ft          |          |             |                     |                    |              |         |
| Thickness of                   | RCP =              | 2.00            | ft          |          |             |                     |                    |              |         |
| Total = 3909.6                 | 39 cft = 1         | 144.8 cy        | /d =        | 145      | сус         | d                   |                    |              |         |
|                                |                    |                 |             |          |             |                     |                    |              |         |
|                                |                    |                 |             |          |             |                     |                    |              |         |
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|                                |                    |                 |             |          |             |                     |                    |              |         |