



# Bull Creek Dam No. 12 Bull Creek Dam No. 14 Rehabilitation & Repair

J. Tyler Coats, PE / April 12, 2022



Build Better. Together.



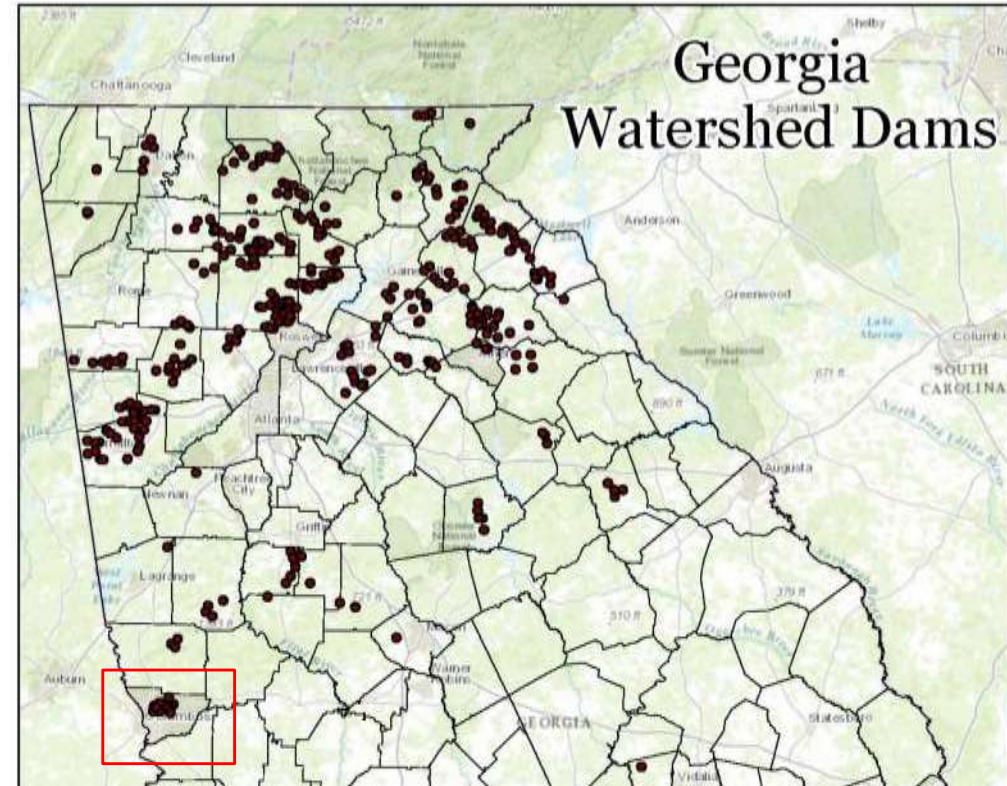
# Watershed Rehabilitation Program

- Assists project sponsors rehabilitate aging dams that are nearing the end of their design lives
- Watershed Protection & Flood Prevention Act authorized the SCS/NRCS to develop works of improvement for soil conservation and flood prevention
  - More than 11,800 flood control dams have been constructed in the U.S. since 1948
- Small Watershed Rehabilitation Amendments of 2000 (Section 313, Public Law 106-472)
  - Amends PL 83-566 “Watershed Protection & Flood Prevention Act” to add authority for rehabilitation



# Watershed Dams in Georgia

- 357 dams have been constructed under the USDA-NRCS flood control program since 1957
- Many are reaching the end of their planned design lives
- Due to hazards in the dam failure zones, many dams do not meet current state and federal dam safety standards



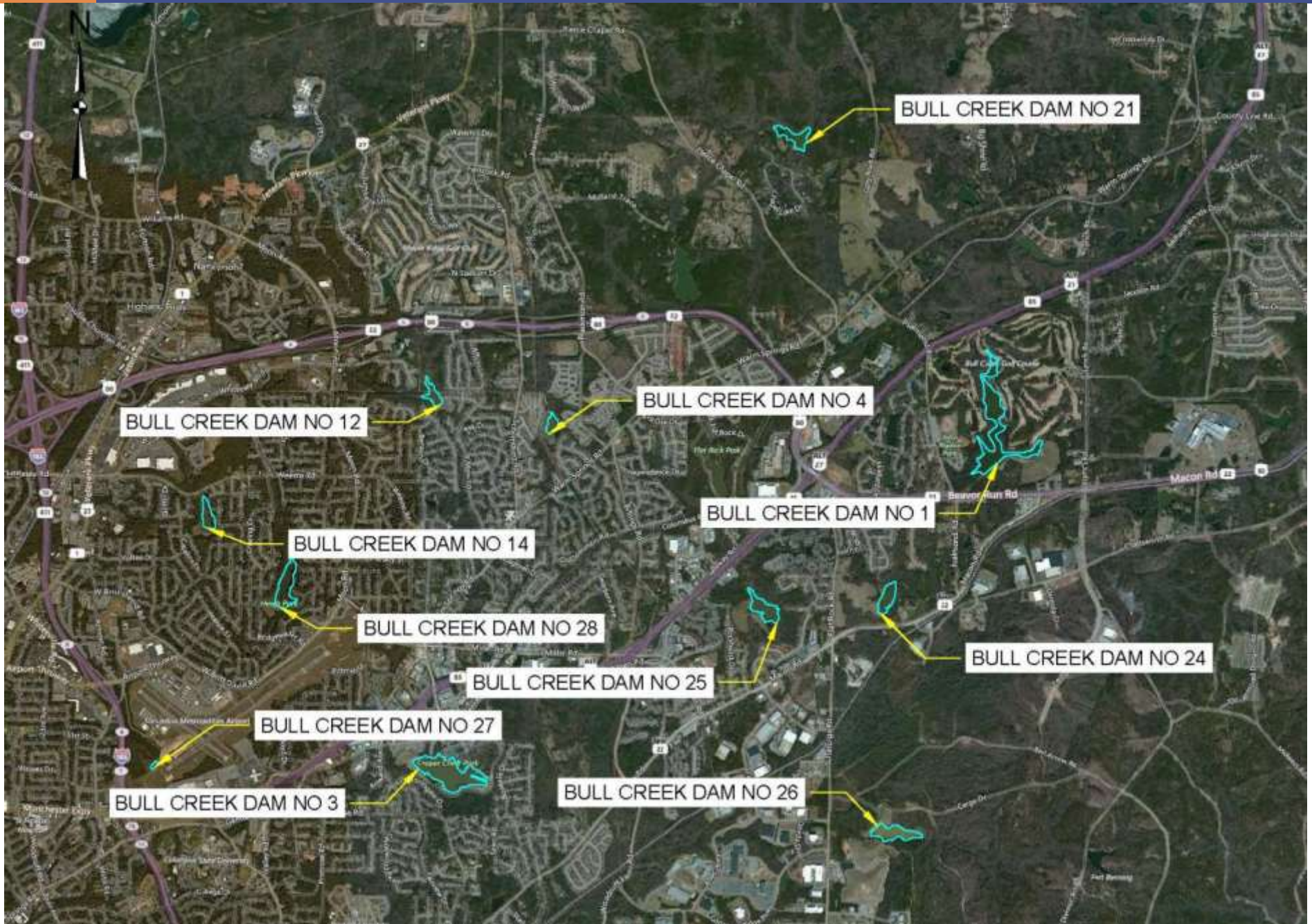
**Muscogee County**



Sources: Esri, HERE, DeLorme, Intermap, increment P., Corp., GEBCO, USGS, FAO, NPS, NRCAN, C-Geo, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapyris, © OpenStreetMap contributors, and the GIS User Community

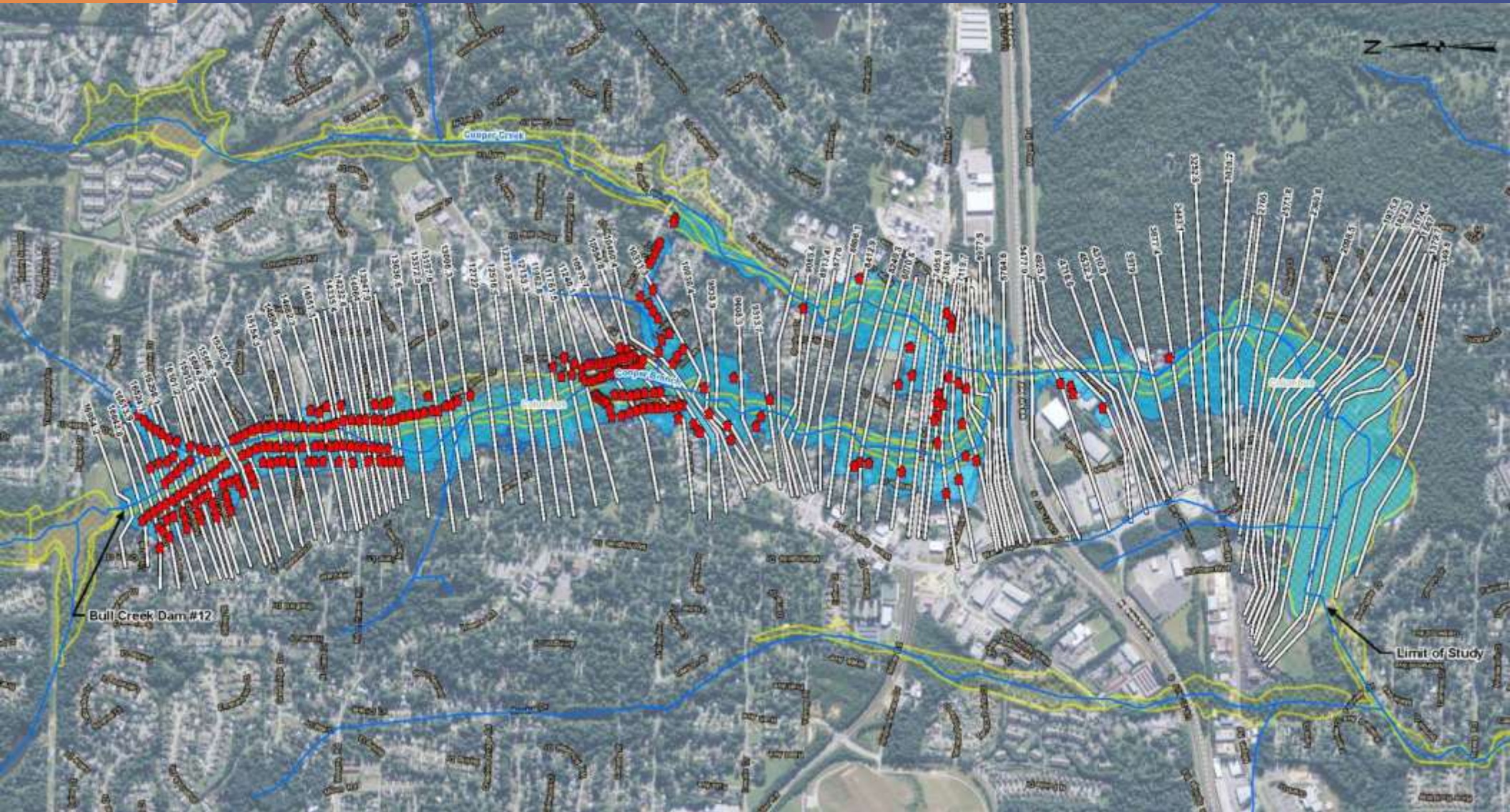


# Watershed Dams in Muscogee County



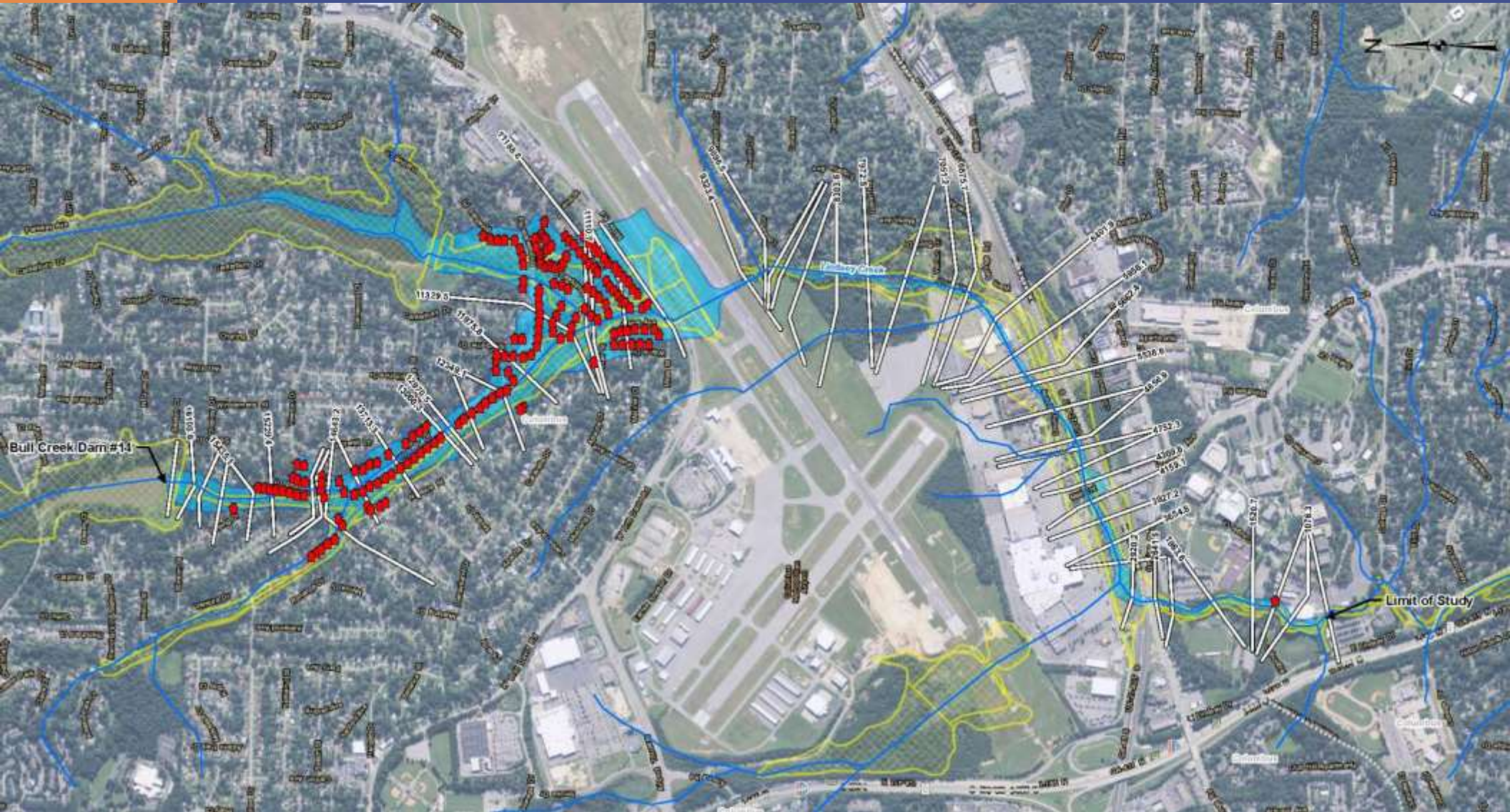


# Bull Creek Dam No. 12 Inundation Map





# Bull Creek Dam No. 14 Inundation Map



# Bull Creek Dam No. 14



Know what's below.  
Call before you dig.

GEORGIA 811  
CALL BEFORE YOU DIG  
DIAL 811 OR CALL 1-800-285-7411  
UTILITIES PROTECTION CENTER  
(IT'S THE LAW)

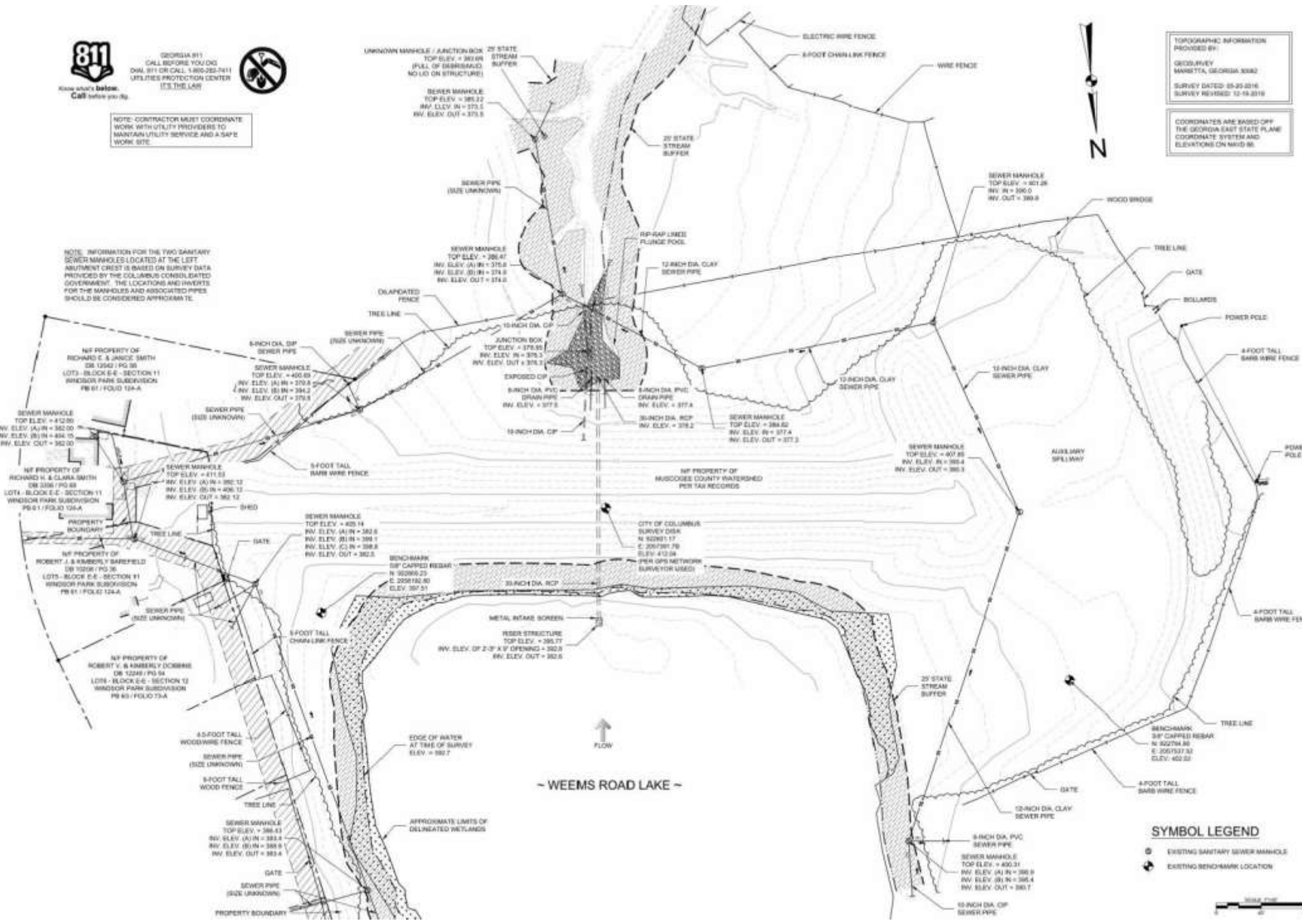


NOTE: CONTRACTOR MUST COORDINATE  
WORK WITH UTILITY PROVIDERS TO  
MAINTAIN UTILITY SERVICE AND A SAFE  
WORK SITE.

NOTE: INFORMATION FOR THE TWO SANITARY  
SEWER MANHOLES LOCATED AT THE LEFT  
ABUTMENT CREST IS BASED ON SURVEY DATA  
PROVIDED BY THE COLUMBUS CONSOLIDATED  
GOVERNMENT. THE LOCATIONS AND INVERTS  
FOR THE MANHOLES AND ASSOCIATED PIPES  
SHOULD BE CONSIDERED APPROXIMATE.

TOPOGRAPHIC INFORMATION  
PROVIDED BY:  
GEO-ARVEY  
MARETTA, GEORGIA 30002  
SURVEY DATED: 05-25-2016  
SURVEY REVISED: 12-14-2016

COORDINATES ARE BASED OFF  
THE GEORGIA EAST STATE PLANE  
COORDINATE SYSTEM AND  
ELEVATIONS ON MVD 86.



**SYMBOL LEGEND**

- EXISTING SANITARY SEWER MANHOLES
- EXISTING BENCHMARK LOCATION







Know what's below.  
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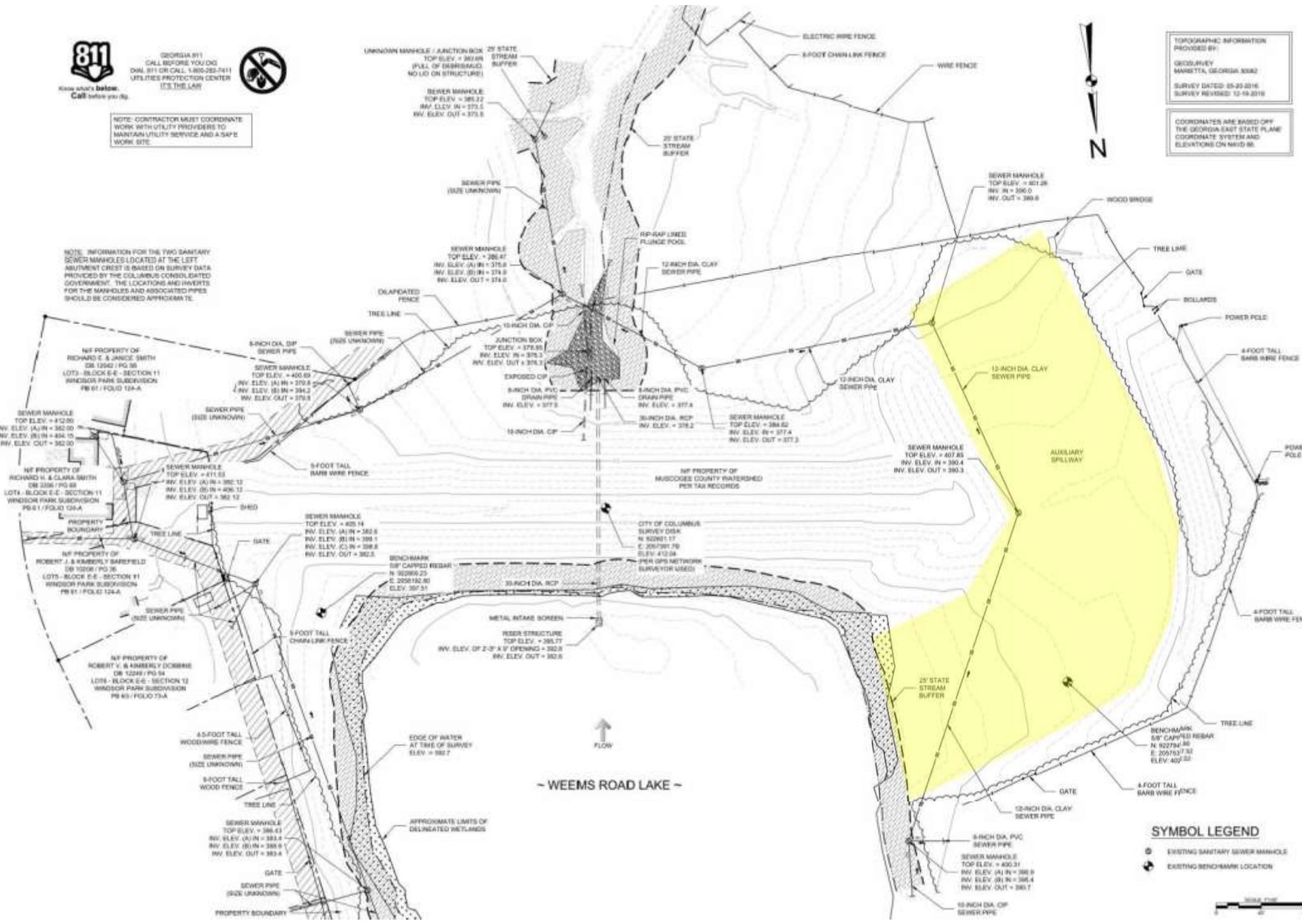


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TOPOGRAPHIC INFORMATION  
PROVIDED BY:  
GRID: NAD 83  
MARIETTA, GEORGIA 30062  
SURVEY DATED: 05-25-2016  
SURVEY REVISED: 12-14-2019

COORDINATES ARE BASED OFF  
THE GEORGIA EAST STATE PLANE  
COORDINATE SYSTEM AND  
ELEVATIONS ON MVD 86.



**SYMBOL LEGEND**

- EXISTING SANITARY SEWER MANHOLE
- EXISTING BENCHMARK LOCATION







GEORGIA 811  
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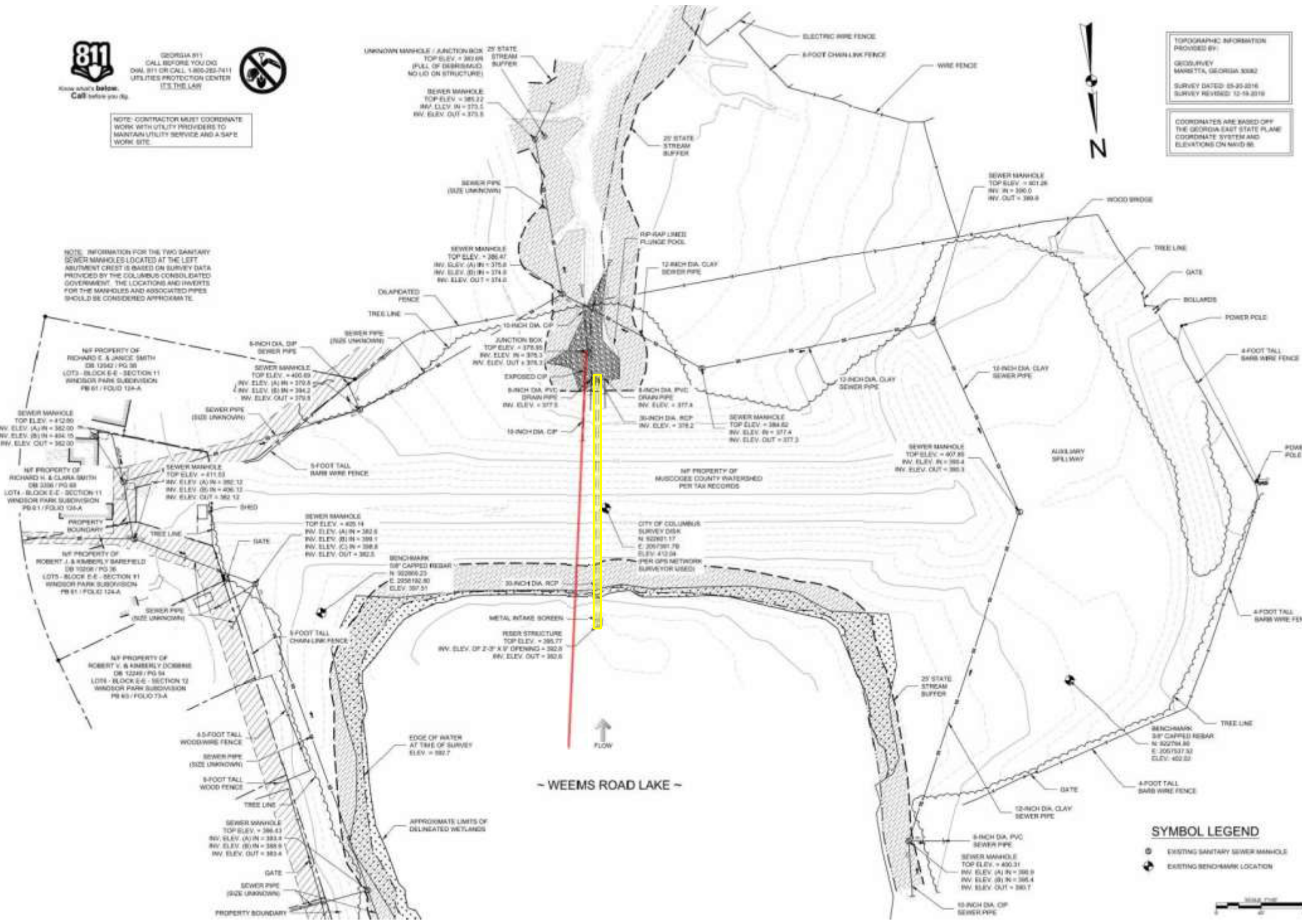
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- ⊕ EXISTING BENCHMARK LOCATION







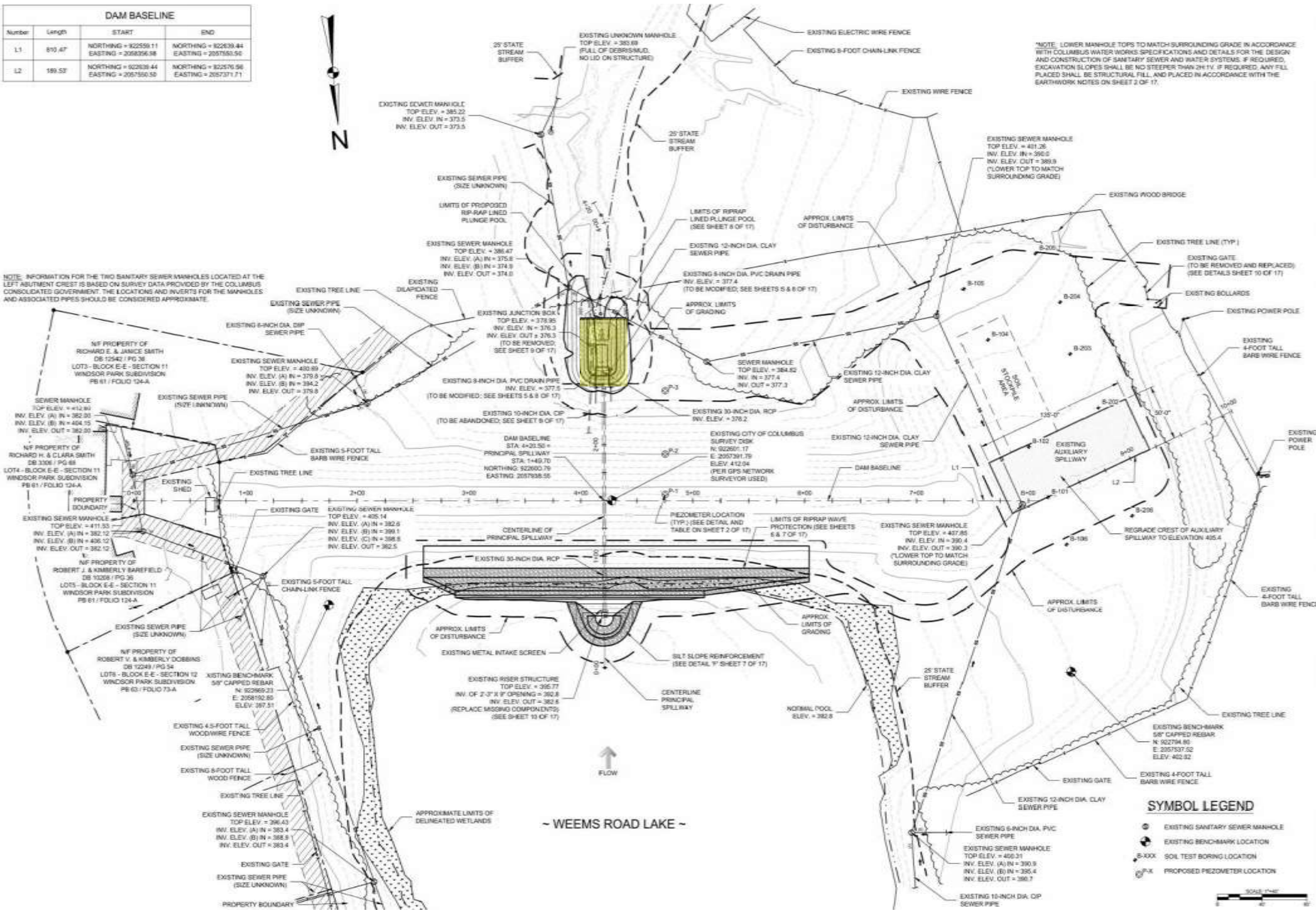
**DAM BASELINE**

| Number | Length  | START  | END  |
|--------|---------|--|--|
| L1     | 810.47' | NORTHING = 922559.11<br>EASTING = 2057036.58 | NORTHING = 922639.44<br>EASTING = 2057151.58 |
| L2     | 189.53' | NORTHING = 922639.44<br>EASTING = 2057500.59 | NORTHING = 922570.96<br>EASTING = 2057371.71 |



NOTE: LOWER MANHOLE TOPS TO MATCH SURROUNDING GRADE IN ACCORDANCE WITH COLUMBUS WATER WORKS SPECIFICATIONS AND DETAILS FOR THE DESIGN AND CONSTRUCTION OF SANITARY SEWER AND WATER SYSTEMS. IF REQUIRED, EXCAVATION SLOPES SHALL BE NO STEEPER THAN 2H:1V. IF REQUIRED, ANY FILL PLACED SHALL BE STRUCTURAL FILL AND PLACED IN ACCORDANCE WITH THE EARTHWORK NOTES ON SHEET 2 OF 17.

NOTE: INFORMATION FOR THE TWO SANITARY SEWER MANHOLES LOCATED AT THE LEFT ABUTMENT CREST IS BASED ON SURVEY DATA PROVIDED BY THE COLUMBUS CONSOLIDATED GOVERNMENT. THE LOCATIONS AND INVERTS FOR THE MANHOLES AND ASSOCIATED PIPES SHOULD BE CONSIDERED APPROXIMATE.



**SYMBOL LEGEND**

- EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING BENCHMARK LOCATION
- ⊙-XXX SOIL TEST BORING LOCATION
- ⊙-X PROPOSED PIEZOMETER LOCATION



~ WEEMS ROAD LAKE ~









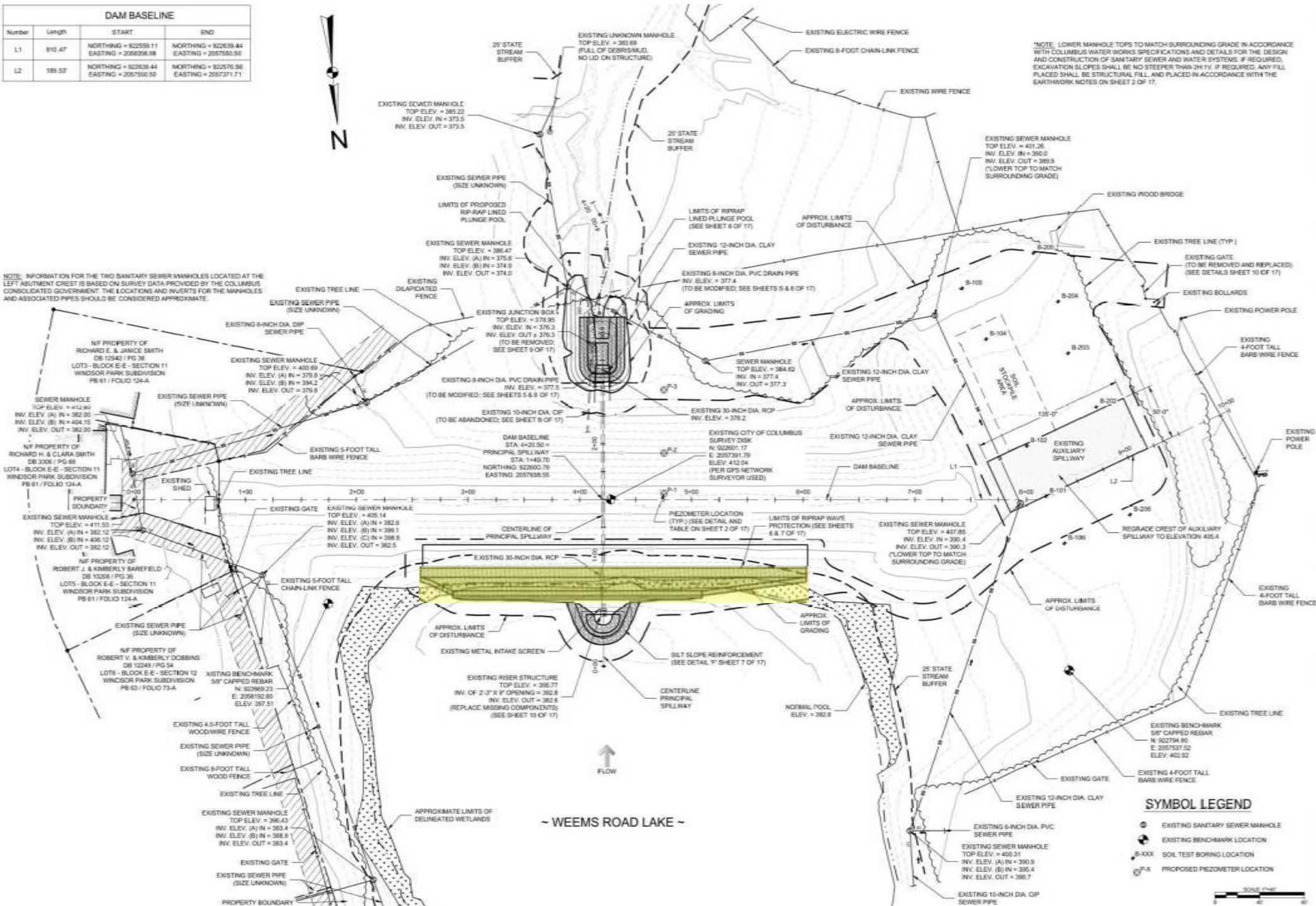
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| Number | Length  | START  | END  |
|--------|---------|--|--|
| L1     | 810.47' | NORTHING = 922559.11<br>EASTING = 2057036.58 | NORTHING = 922639.44<br>EASTING = 2057151.58 |
| L2     | 189.53' | NORTHING = 922629.44<br>EASTING = 2057500.59 | NORTHING = 922570.96<br>EASTING = 2057371.71 |



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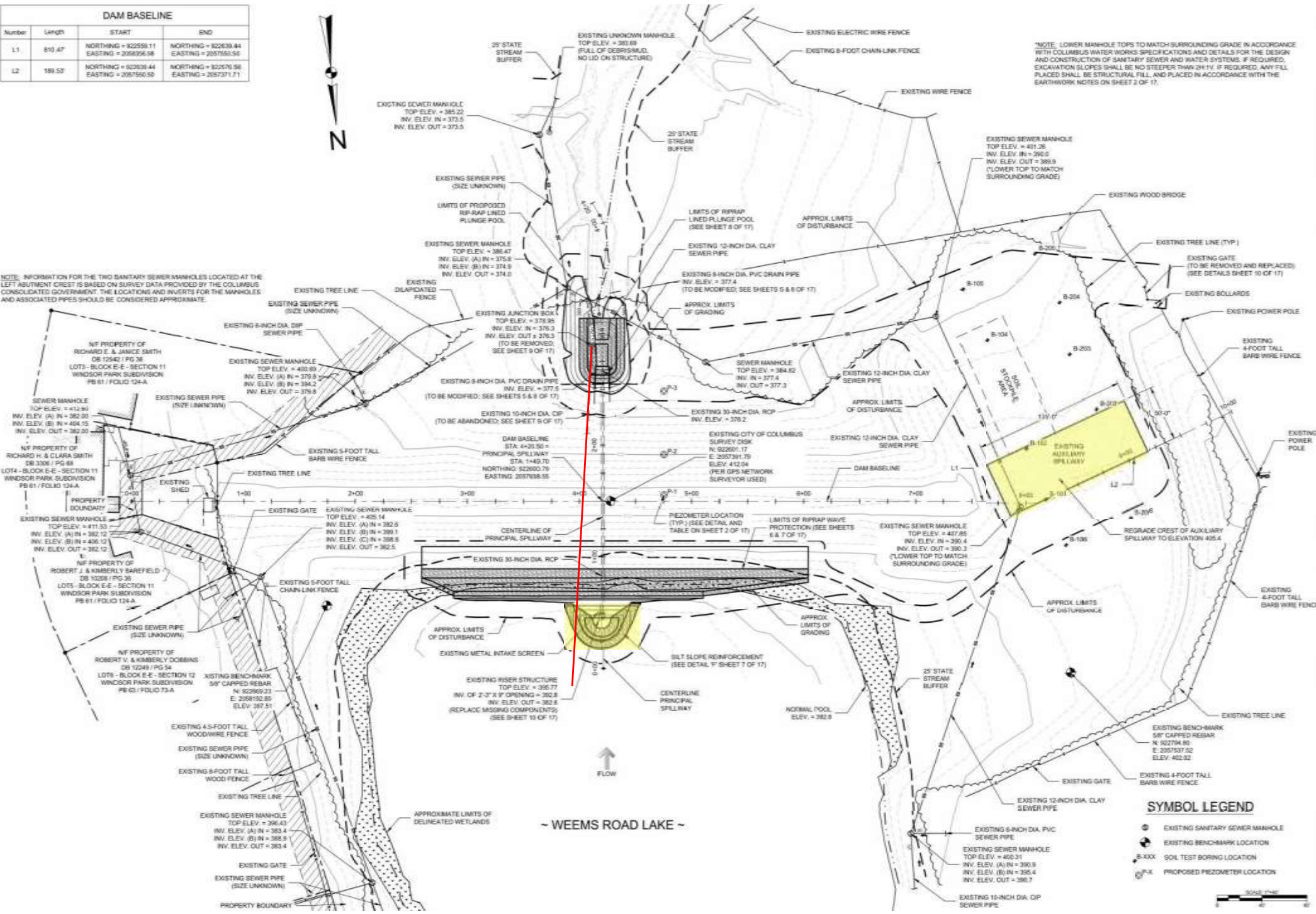


| DAM BASELINE |         |  |  |
|--------------|---------|--|--|
| Number       | Length  | START                                      | END  |
| L1           | 810.47' | NORTHING = 92259.11<br>EASTING = 205736.58 | NORTHING = 92269.44<br>EASTING = 205751.56 |
| L2           | 189.53' | NORTHING = 92269.44<br>EASTING = 205750.59 | NORTHING = 92250.96<br>EASTING = 205731.71 |



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- PROPOSED PIEZOMETER LOCATION



~ WEEMS ROAD LAKE ~



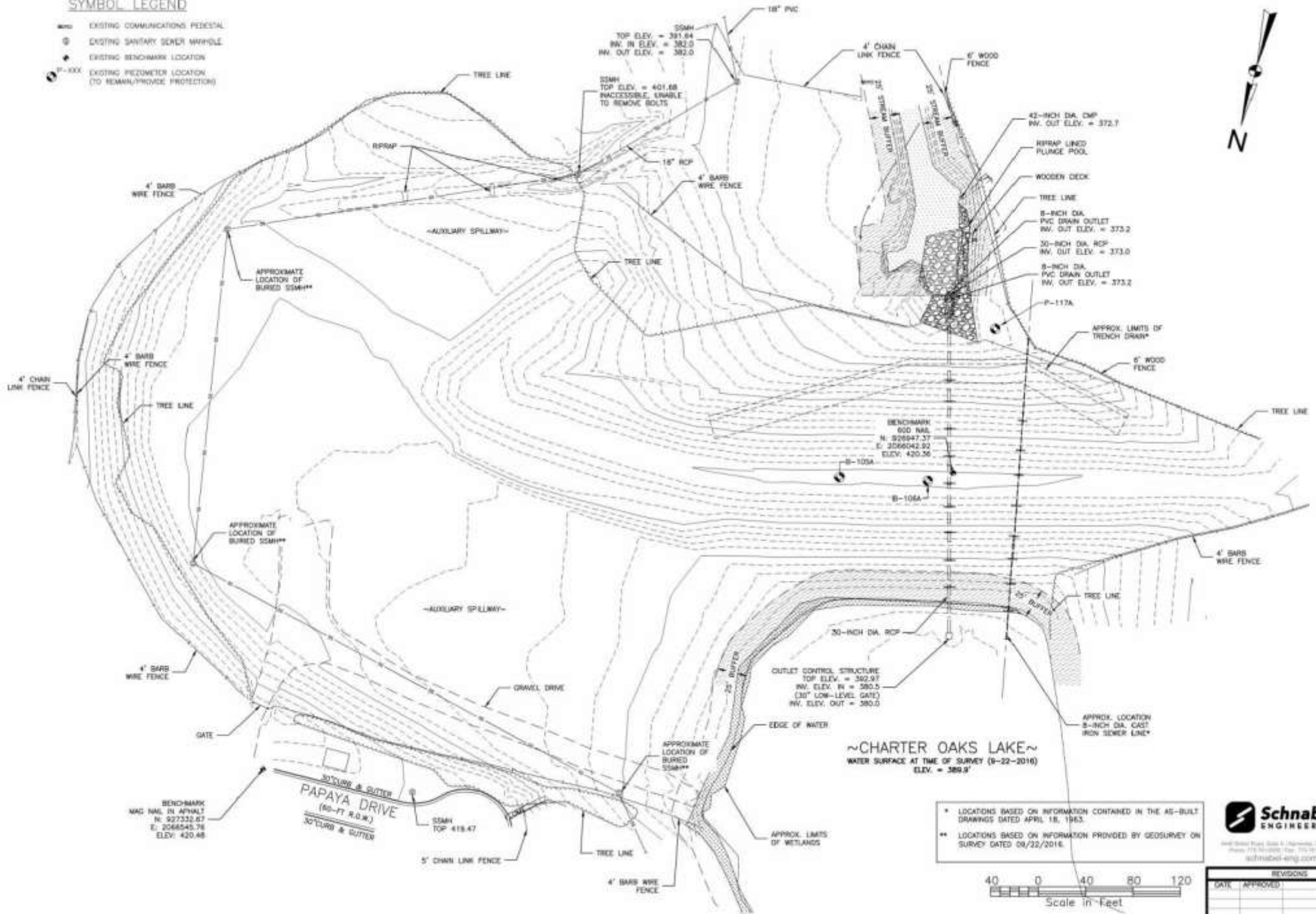




# Bull Creek Dam No. 12

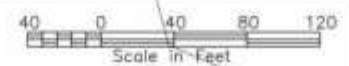
**SYMBOL LEGEND**

- EXISTING COMMUNICATIONS PEDESTAL
- ⊙ EXISTING SANITARY SEWER MANHOLE
- EXISTING BENCHMARK LOCATION
- ⊙-XXX EXISTING PNEUMETER LOCATION (TO REMAIN/PROVIDE PROTECTION)



~CHARTER OAKS LAKE~  
 WATER SURFACE AT TIME OF SURVEY (9-22-2010)  
 ELEV. = 389.9'

\* LOCATIONS BASED ON INFORMATION CONTAINED IN THE AS-BUILT DRAWINGS DATED APRIL 18, 1963.  
 \*\* LOCATIONS BASED ON INFORMATION PROVIDED BY GEOSURVEY ON SURVEY DATED 09/22/2010.



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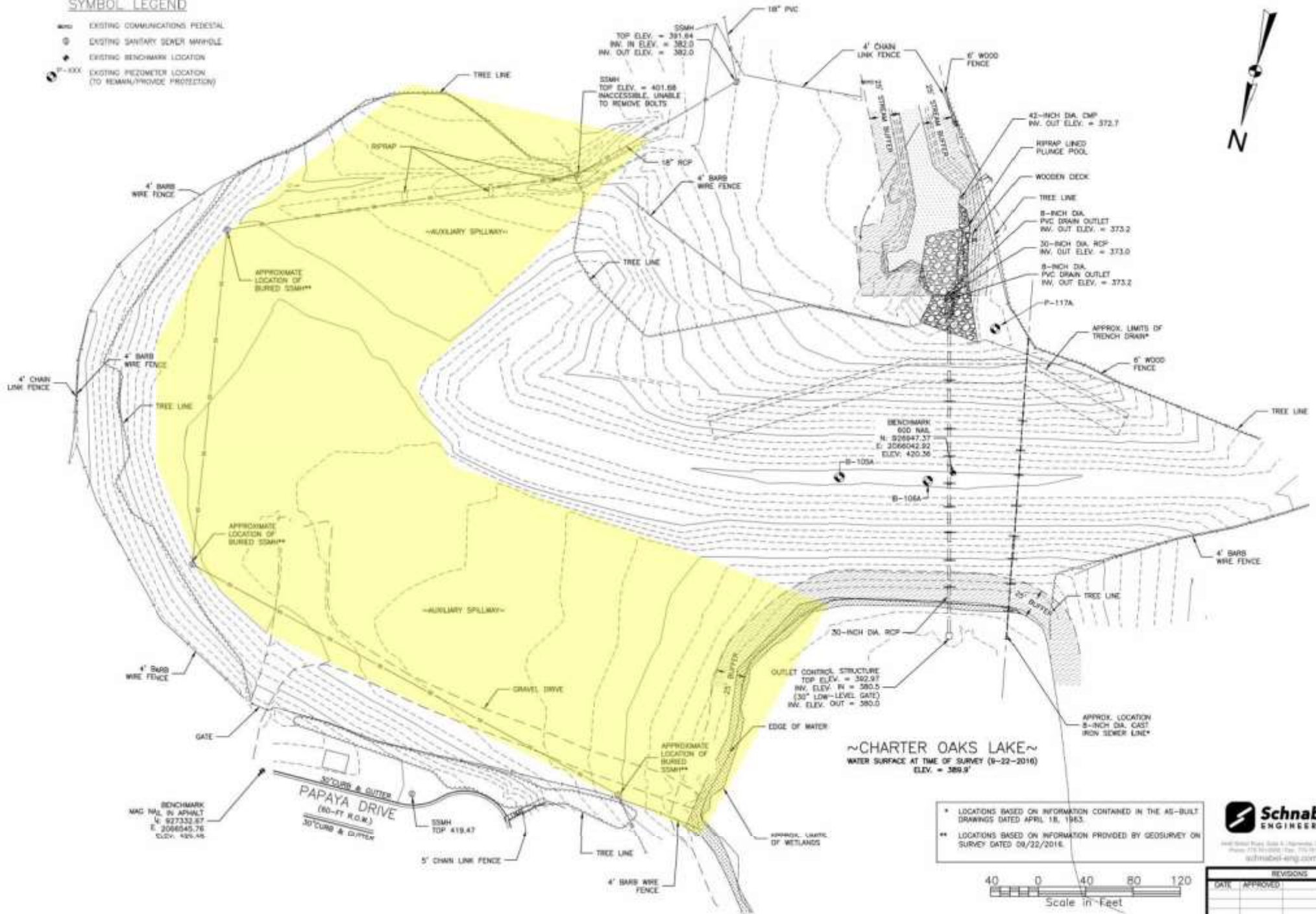
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|-----------|----------|----|
| DATE      | APPROVED | BY |
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|           |          |    |





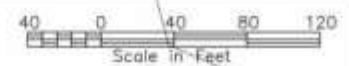
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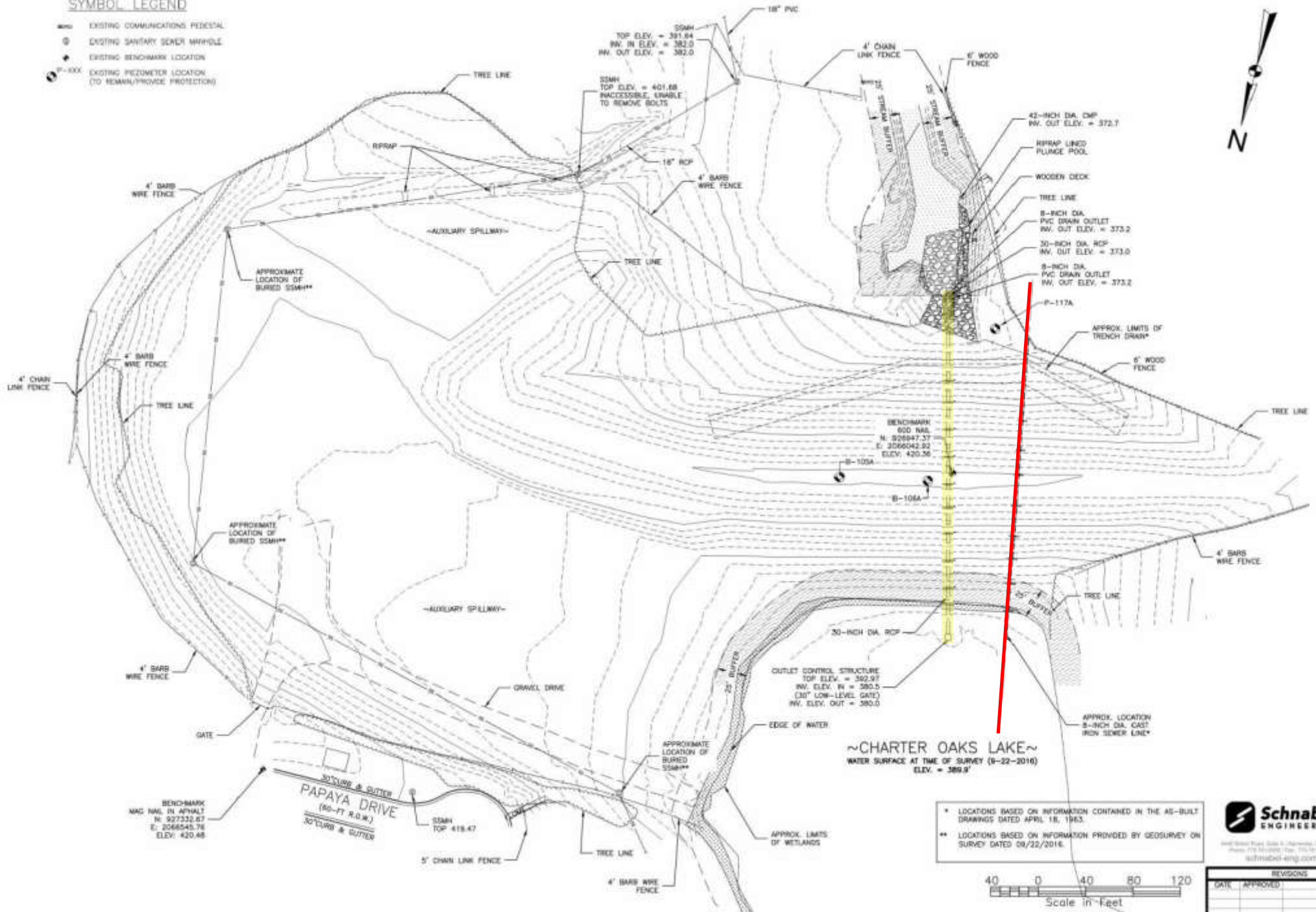
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| REVISIONS |          |    |
|-----------|----------|----|
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|           |          |    |
|           |          |    |



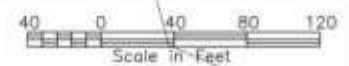
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| REVISIONS |          |    |
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| DATE      | APPROVED | BY |
|           |          |    |
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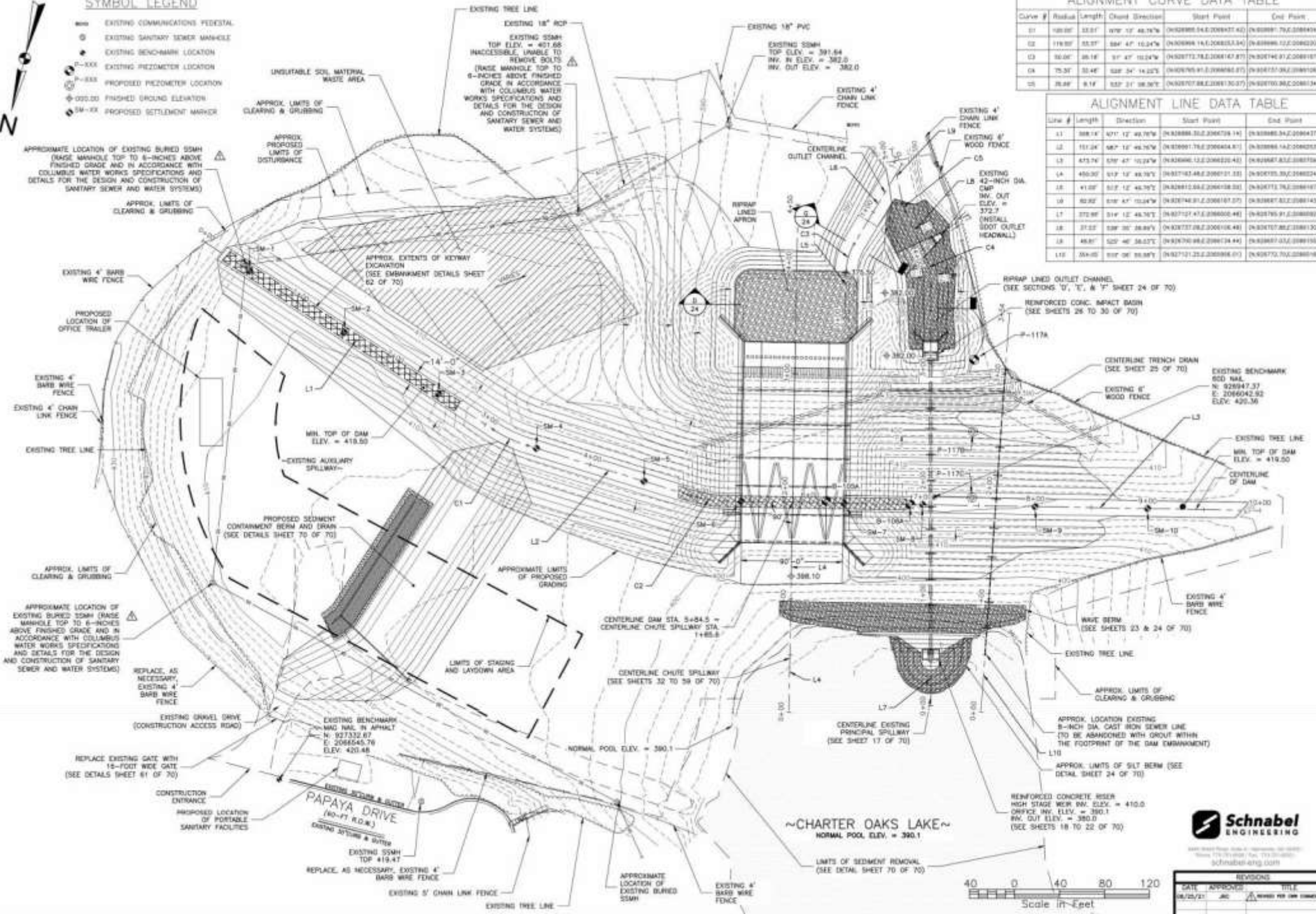


**SYMBOL LEGEND**

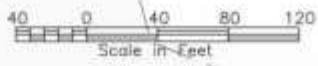
- EXISTING COMMUNICATIONS FEEDBACK
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING BENCHMARK LOCATION
- ⊙ EXISTING PNEZOMETER LOCATION
- ⊙ PROPOSED PNEZOMETER LOCATION
- ⊙ FINISHED GROUND ELEVATION
- ⊙ PROPOSED SETTLEMENT MARKER

| ALIGNMENT CURVE DATA TABLE |         |        |                 |                           |                           |  |
|----------------------------|---------|--------|-----------------|---------------------------|---------------------------|--|
| Curve #                    | Radius  | Length | Chord Direction | Start Point               | End Point                 |  |
| C1                         | 100.00' | 33.01' | 078° 12' 48.16" | (N 928885.14 E 208837.40) | (N 928891.76 E 208849.81) |  |
| C2                         | 179.00' | 53.07' | 58° 47' 10.24"  | (N 928894.14 E 208833.34) | (N 928896.12 E 208820.40) |  |
| C3                         | 50.00'  | 26.16' | 91° 47' 10.24"  | (N 928772.78 E 208814.87) | (N 928744.91 E 208810.07) |  |
| C4                         | 75.00'  | 30.48' | 53° 24' 18.20"  | (N 928765.91 E 208868.87) | (N 928757.92 E 208878.48) |  |
| C5                         | 25.00'  | 8.14'  | 132° 31' 38.00" | (N 928707.82 E 208813.07) | (N 928705.92 E 208813.40) |  |

| ALIGNMENT LINE DATA TABLE |        |                 |                           |                           |  |
|---------------------------|--------|-----------------|---------------------------|---------------------------|--|
| Line #                    | Length | Direction       | Start Point               | End Point                 |  |
| L1                        | 388.14 | 471° 12' 48.16" | (N 928888.32 E 208478.14) | (N 928886.32 E 208447.40) |  |
| L2                        | 181.24 | 58° 12' 48.16"  | (N 928991.76 E 208604.81) | (N 928894.12 E 208623.34) |  |
| L3                        | 473.74 | 57° 47' 10.24"  | (N 928996.12 E 208622.40) | (N 928967.82 E 208678.20) |  |
| L4                        | 450.00 | 91° 12' 48.16"  | (N 928765.92 E 208810.07) | (N 928765.92 E 208824.20) |  |
| L5                        | 41.00' | 91° 12' 48.16"  | (N 928765.92 E 208810.07) | (N 928773.78 E 208810.07) |  |
| L6                        | 82.00' | 91° 47' 10.24"  | (N 928744.91 E 208810.07) | (N 928867.82 E 208814.87) |  |
| L7                        | 372.99 | 51° 12' 48.16"  | (N 928712.47 E 208868.87) | (N 928765.91 E 208868.87) |  |
| L8                        | 37.22  | 53° 24' 18.20"  | (N 928757.92 E 208868.87) | (N 928757.92 E 208878.48) |  |
| L9                        | 48.81  | 52° 48' 38.00"  | (N 928740.94 E 208874.44) | (N 928867.82 E 208878.48) |  |
| L10                       | 58.00  | 91° 30' 38.00"  | (N 928712.22 E 208868.87) | (N 928705.92 E 208868.87) |  |



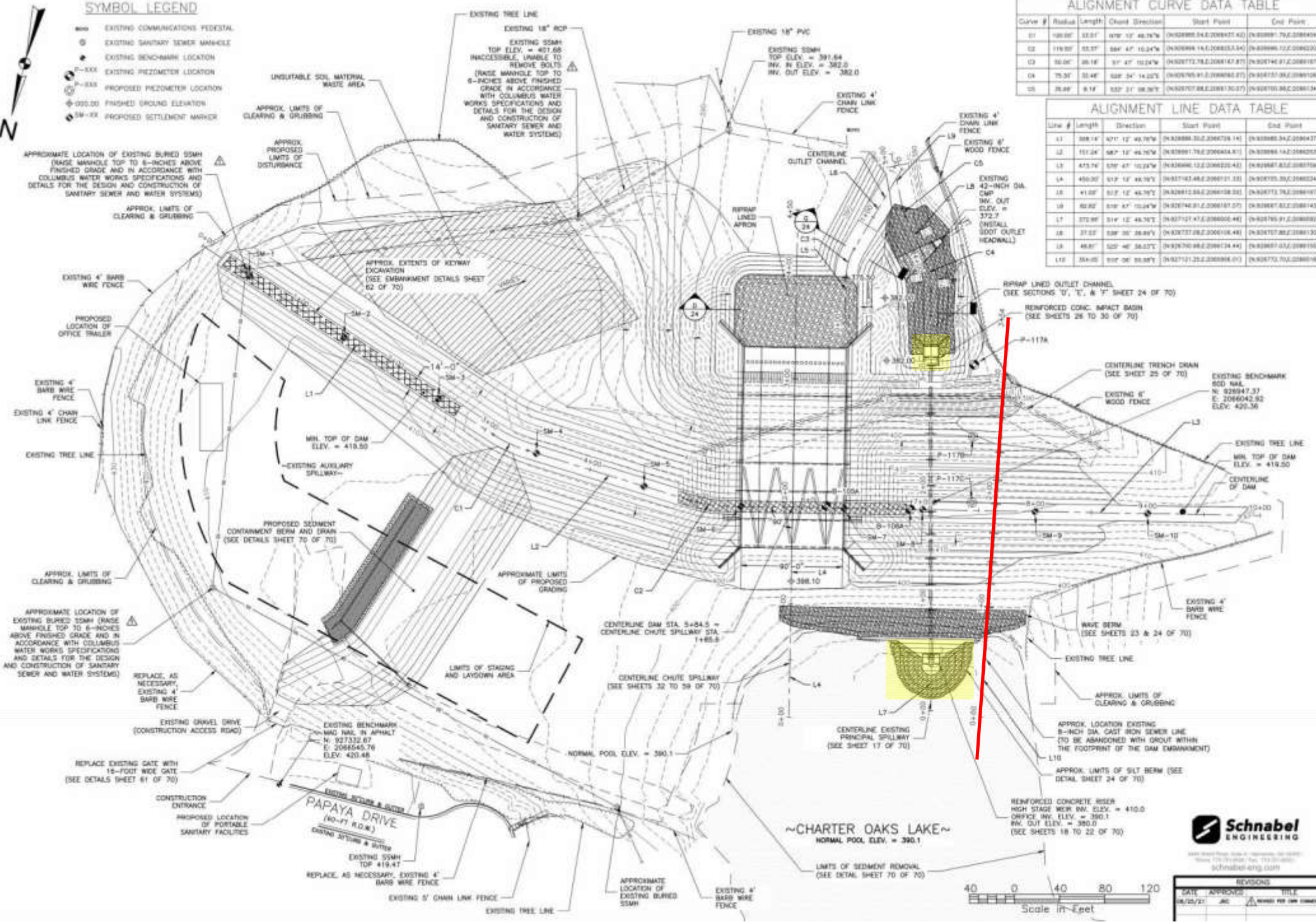
| REVISIONS |          |                         |
|-----------|----------|-------------------------|
| DATE      | APPROVED | TITLE                   |
| 08/25/21  | JAC      | ISSUED FOR CONSTRUCTION |



### SYMBOL LEGEND



- EXISTING COMMUNICATIONS FEEDBACK
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING BENCHMARK LOCATION
- ⊙ EXISTING PNEZOMETER LOCATION
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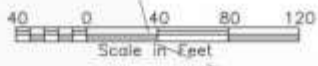


| Curve # | Radius  | Length | Chord Direction | Start Point              | End Point                |
|---------|---------|--------|-----------------|--------------------------|--------------------------|
| C1      | 100.00' | 33.01' | 078° 12' 48.76" | (N432885.14E,208837.40)  | (N430891.79E,208849.81)  |
| C2      | 179.00' | 53.07' | 084° 47' 10.24" | (N430894.14E,208833.34)  | (N430896.12E,208830.40)  |
| C3      | 50.00'  | 26.16' | 91° 47' 10.24"  | (N430772.78E,208814.87)  | (N430744.91E,208810.07)  |
| C4      | 75.00'  | 30.48' | 038° 24' 18.20" | (N430765.91E,208860.87)  | (N430757.06E,208858.48)  |
| C5      | 25.00'  | 8.14'  | 032° 31' 08.00" | (N430707.82E,2088130.07) | (N430700.94E,2088134.40) |

| Line # | Length  | Direction       | Start Point               | End Point                |
|--------|---------|-----------------|---------------------------|--------------------------|
| L1     | 388.14' | 071° 12' 48.76" | (N432888.30E,208479.14)   | (N430886.34E,208847.40)  |
| L2     | 101.24' | 087° 12' 48.76" | (N430991.79E,208604.87)   | (N430894.14E,208830.40)  |
| L3     | 473.74' | 078° 47' 10.24" | (N432886.12E,208822.40)   | (N430897.83E,208870.20)  |
| L4     | 450.00' | 017° 12' 48.76" | (N430783.48E,208871.33)   | (N430785.30E,208824.30)  |
| L5     | 41.00'  | 012° 12' 48.76" | (N4328912.88E,2088138.30) | (N430773.78E,208810.07)  |
| L6     | 80.00'  | 018° 47' 10.24" | (N432744.91E,208810.07)   | (N430867.83E,2088143.10) |
| L7     | 372.90' | 014° 12' 48.76" | (N4307121.47E,208860.48)  | (N430765.91E,208860.87)  |
| L8     | 37.25'  | 038° 24' 18.20" | (N430737.06E,2088106.48)  | (N430757.06E,208810.07)  |
| L9     | 48.81'  | 027° 40' 38.00" | (N430760.94E,208874.44)   | (N430867.83E,2088106.48) |
| L10    | 58.40'  | 017° 00' 38.00" | (N4307121.25E,208866.01)  | (N430750.70E,208868.10)  |



| DATE     | APPROVED | TITLE                   |
|----------|----------|-------------------------|
| 08/25/21 | JAC      | ISSUED FOR CONSTRUCTION |



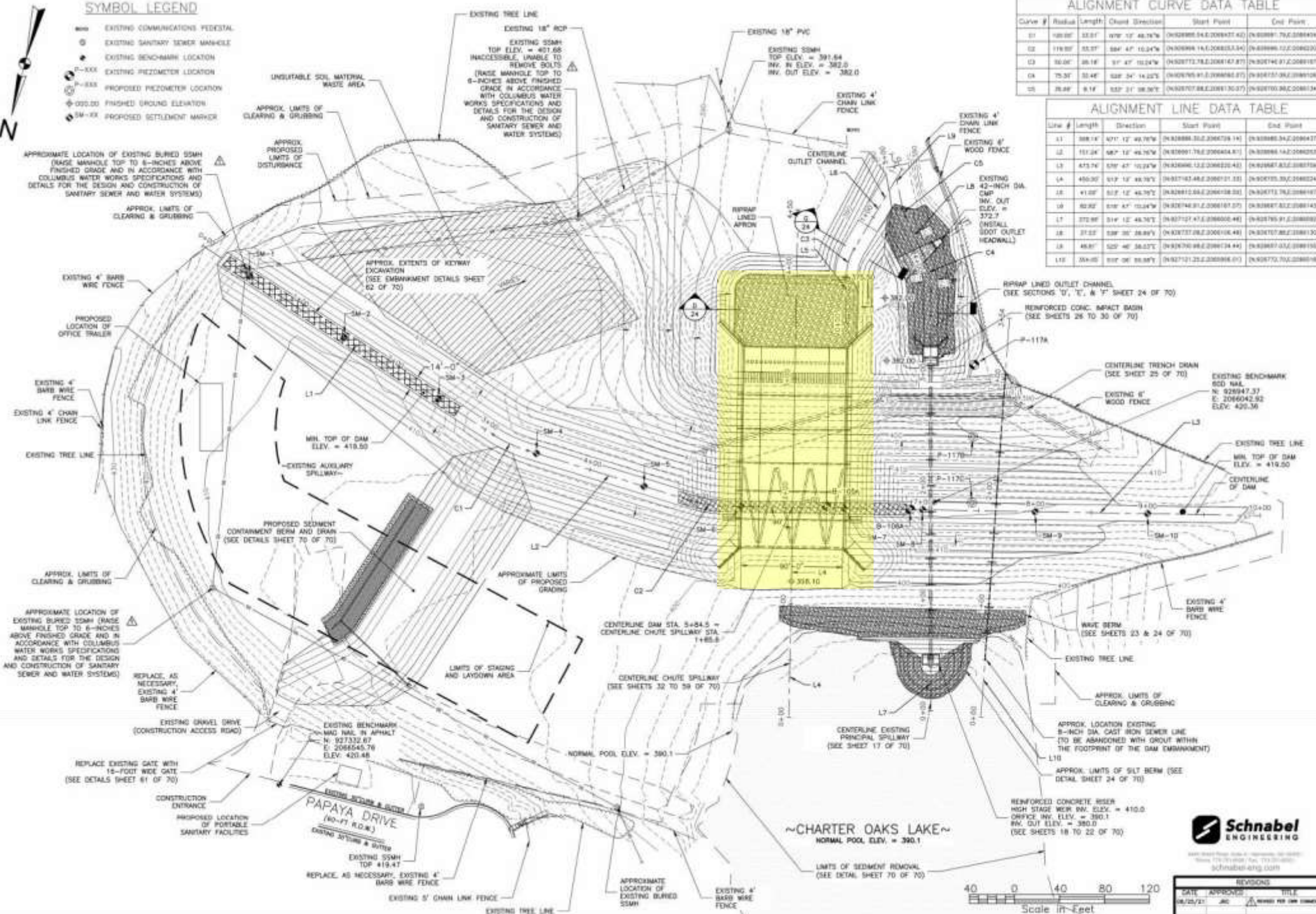






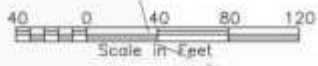
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- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING BENCHMARK LOCATION
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| Curve # | Radius  | Length | Chord Direction | Start Point                | End Point                  |
|---------|---------|--------|-----------------|----------------------------|----------------------------|
| C1      | 100.00' | 33.01' | 078° 12' 48.16" | (N 928985.14 E 2066037.40) | (N 928981.70 E 2066049.81) |
| C2      | 179.00' | 53.07' | 084° 47' 10.24" | (N 928984.14 E 2066033.34) | (N 928986.12 E 2066030.40) |
| C3      | 100.00' | 35.16' | 91° 47' 10.24"  | (N 928972.78 E 2066147.87) | (N 928974.91 E 2066167.07) |
| C4      | 75.00'  | 30.48' | 038° 24' 18.20" | (N 928976.91 E 2066060.87) | (N 928970.92 E 2066108.48) |
| C5      | 100.00' | 8.14'  | 032° 31' 08.00" | (N 928970.92 E 2066108.48) | (N 928970.92 E 2066134.40) |

| Line # | Length  | Direction       | Start Point                | End Point                  |
|--------|---------|-----------------|----------------------------|----------------------------|
| L1     | 388.14' | 071° 12' 48.16" | (N 928986.32 E 2066709.14) | (N 928986.32 E 2066477.40) |
| L2     | 181.24' | 087° 12' 48.16" | (N 928981.70 E 2066034.81) | (N 928984.14 E 2066032.34) |
| L3     | 473.74' | 078° 47' 10.24" | (N 928986.12 E 2066022.40) | (N 928987.83 E 2066079.20) |
| L4     | 450.00' | 012° 12' 48.16" | (N 928983.48 E 2066121.33) | (N 928976.30 E 2066024.30) |
| L5     | 41.00'  | 012° 12' 48.16" | (N 928976.30 E 2066128.30) | (N 928973.78 E 2066167.87) |
| L6     | 80.00'  | 018° 47' 10.24" | (N 928974.91 E 2066167.07) | (N 928987.83 E 2066147.87) |
| L7     | 372.90' | 014° 12' 48.16" | (N 928972.78 E 2066060.48) | (N 928976.91 E 2066060.87) |
| L8     | 37.25'  | 038° 24' 18.20" | (N 928970.92 E 2066108.48) | (N 928970.92 E 2066134.40) |
| L9     | 48.81'  | 022° 48' 38.20" | (N 928970.92 E 2066134.40) | (N 928987.83 E 2066167.87) |
| L10    | 58.00'  | 012° 00' 00.00" | (N 928970.92 E 2066134.40) | (N 928970.92 E 2066167.87) |



| DATE     | APPROVED | TITLE                   |
|----------|----------|-------------------------|
| 08/25/21 | JAC      | ISSUED FOR CONSTRUCTION |

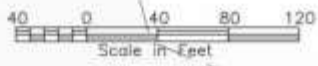
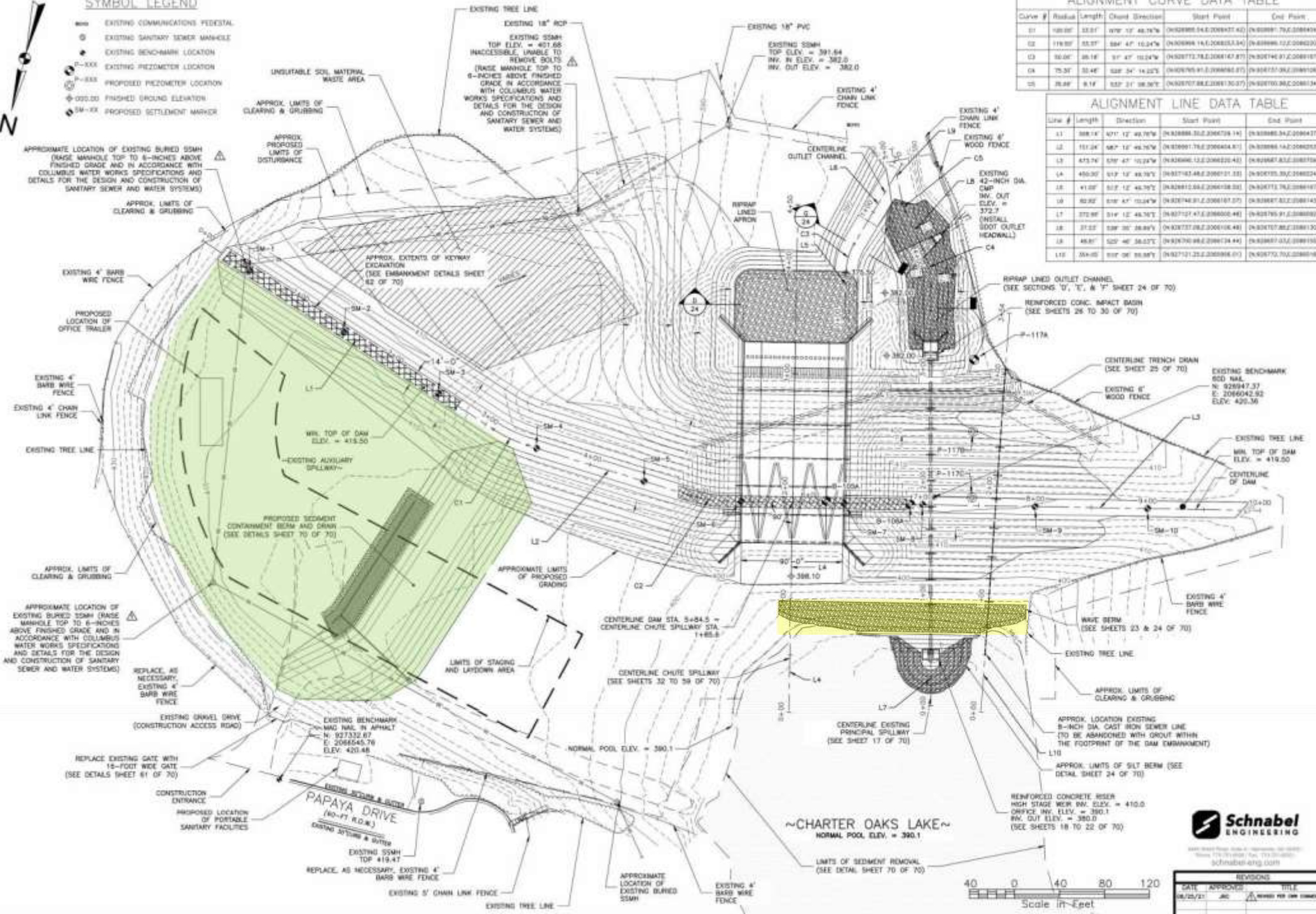


### SYMBOL LEGEND

- EXISTING COMMUNICATIONS FEEDBACK
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING BENCHMARK LOCATION
- ⊙ EXISTING PNEZOMETER LOCATION
- ⊙ PROPOSED PNEZOMETER LOCATION
- ⊙ FINISHED GROUND ELEVATION
- ⊙ PROPOSED SETTLEMENT MARKER

| Curve # | Radius  | Length | Chord Direction | Start Point               | End Point                 |
|---------|---------|--------|-----------------|---------------------------|---------------------------|
| C1      | 100.00' | 33.01' | 078° 12' 48.76" | (N 928985.94 E 208837.40) | (N 928981.76 E 208849.81) |
| C2      | 179.00' | 53.07' | 084° 47' 10.24" | (N 928994.14 E 208833.34) | (N 928996.12 E 208820.40) |
| C3      | 50.00'  | 26.16' | 97° 47' 10.24"  | (N 928972.78 E 208814.87) | (N 928974.97 E 208810.07) |
| C4      | 75.00'  | 30.48' | 038° 24' 18.20" | (N 928976.91 E 208860.87) | (N 928973.92 E 208870.48) |
| C5      | 25.00'  | 8.14'  | 032° 31' 08.00" | (N 928970.82 E 208913.07) | (N 928970.92 E 208913.40) |

| Line # | Length  | Direction       | Start Point               | End Point                 |
|--------|---------|-----------------|---------------------------|---------------------------|
| L1     | 388.14' | 071° 12' 48.76" | (N 928988.32 E 208678.14) | (N 928986.32 E 208647.40) |
| L2     | 187.24' | 087° 12' 48.76" | (N 928991.76 E 208644.87) | (N 928994.12 E 208623.74) |
| L3     | 473.74' | 078° 47' 10.24" | (N 928996.12 E 208622.40) | (N 928987.82 E 208578.20) |
| L4     | 450.00' | 073° 12' 48.76" | (N 928983.48 E 208571.33) | (N 928975.30 E 208524.20) |
| L5     | 41.00'  | 072° 12' 48.76" | (N 928972.82 E 208518.30) | (N 928973.76 E 208517.87) |
| L6     | 80.00'  | 078° 47' 10.24" | (N 928974.97 E 208510.07) | (N 928987.82 E 208443.15) |
| L7     | 372.90' | 074° 12' 48.76" | (N 928972.47 E 208460.48) | (N 928975.91 E 208400.07) |
| L8     | 37.25'  | 038° 24' 18.20" | (N 928977.02 E 208416.48) | (N 928977.82 E 208410.07) |
| L9     | 48.81'  | 027° 40' 38.00" | (N 928976.92 E 208414.44) | (N 928987.03 E 208410.87) |
| L10    | 59.00'  | 037° 00' 38.00" | (N 928973.22 E 208398.01) | (N 928973.76 E 208398.18) |



| DATE     | APPROVED | TITLE                   |
|----------|----------|-------------------------|
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# Bull Creek Dam No. 12 Bull Creek Dam No. 14 Rehabilitation & Repair

J. Tyler Coats, PE / April 12, 2022



Build Better. Together.