Design and Environmental Study For

ARLINGTON AVENUE BRIDGES REPLACEMENT

ARLINGTON AVENUE BRIDGES PROJECT

Design Review Committee Meeting #6 | September 13, 2022

Purpose of Today's DRC Meeting:

ARLINGTON AVENUE BRIDGES PROJECT

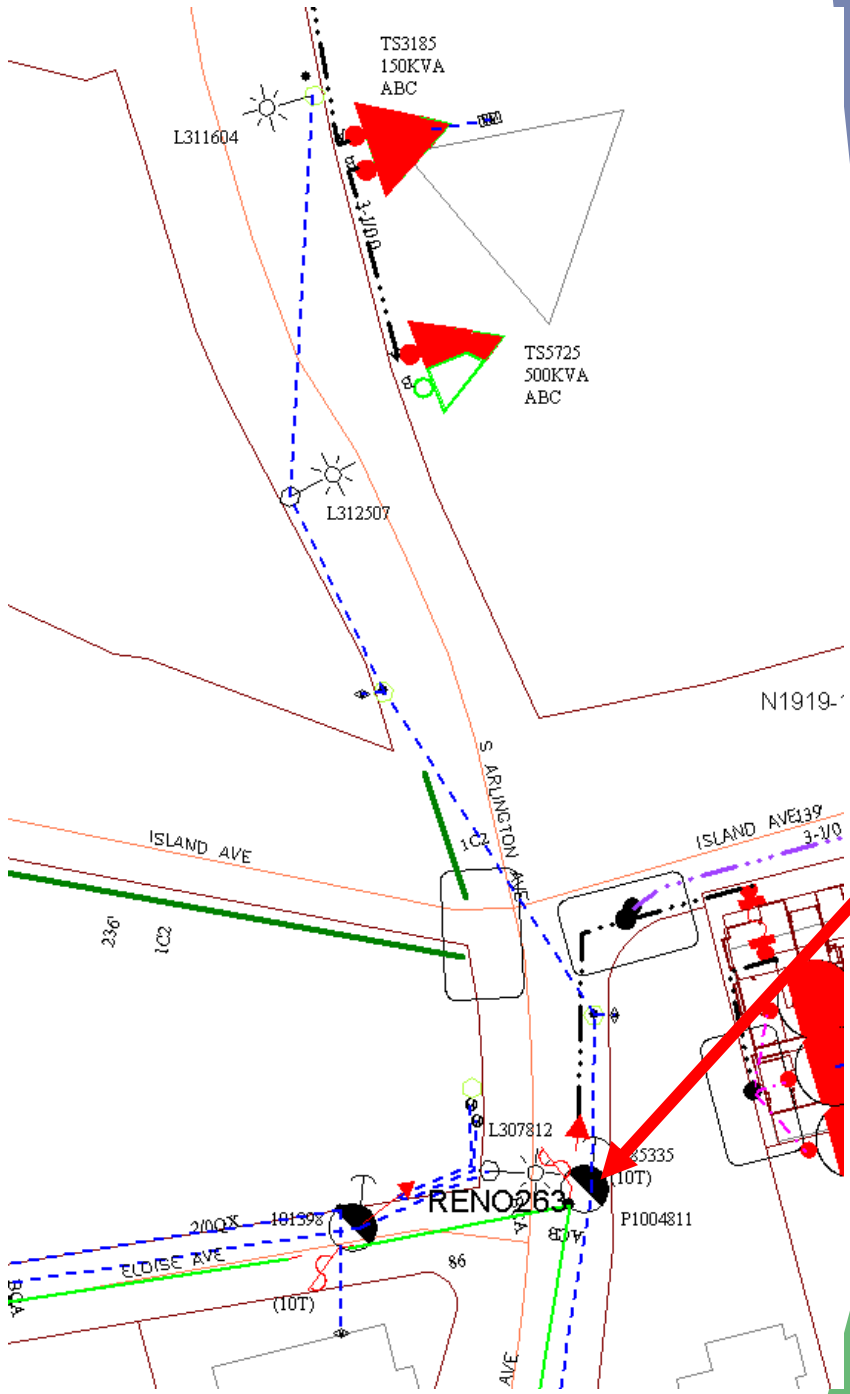
- ✓ Utilities
  - ✓ NV Energy
  - ✓ Charter
  - ✓ Zayo
  - ✓ TMWA
  - ✓ Coordination with New Bridge Structures - # Conduits w/in Sidewalk
- ✓ RRFB Layout and Sidewalk(s) at Island Avenue
- ✓ Bollards
- ✓ Open Questions/Discussion

Utilities

ARLINGTON AVENUE BRIDGES PROJECT

NVE – ELECTRIC

- Underground the existing Overhead
- Pole – P1004811 at end of Elosie Ave.



South Bridge

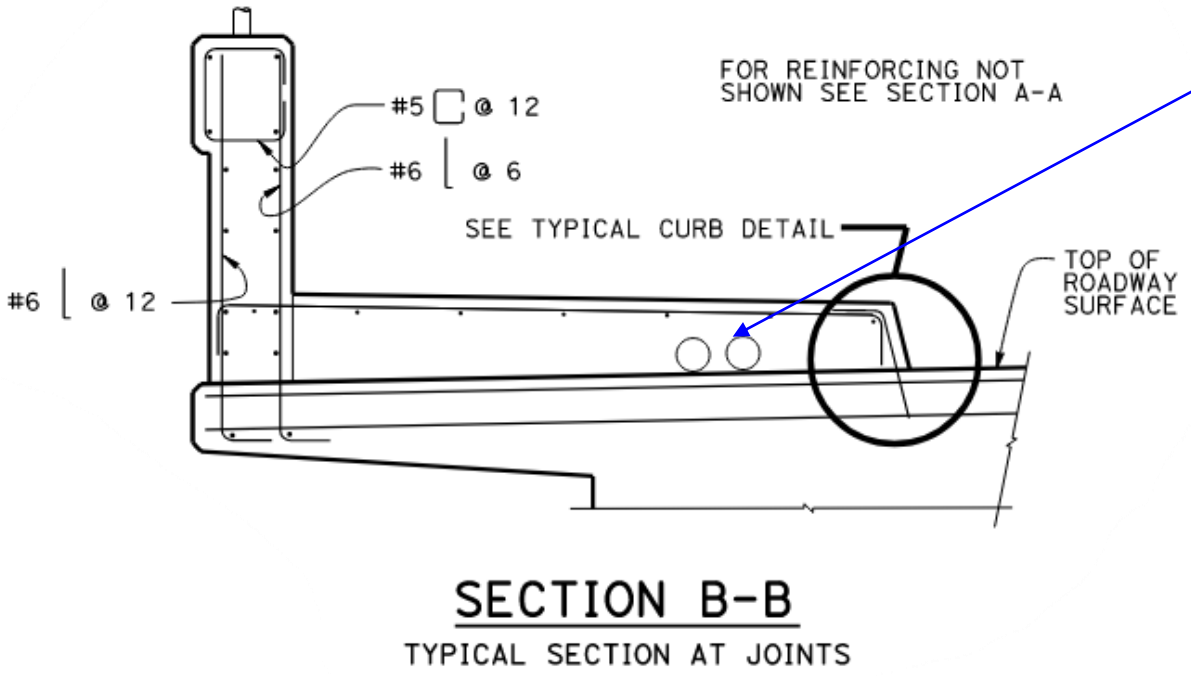
ARLINGTON AVENUE BRIDGES PROJECT

NVE – ELECTRIC

- NV Energy has discontinued the installation of decorative streetlights; only install standard cobra head
- Install meter pedestal; City can serve any type of streetlight from there
- To underground - Customer to open new NVE project and cover cost
- Across Bridges – What can be accommodated? 5 - 4” and 3 – 3” ? (8 total)

Bridge Sidewalk

Potential Utility Routing Detail



SECTION B-B

TYPICAL SECTION AT JOINTS

Up to 7-4” Conduits can be run on each side of the bridge (between curb and barrier face)

14 Total 4” Conduits

5 ? - NV Energy

4 ? - Charter

2 ? - Zayo

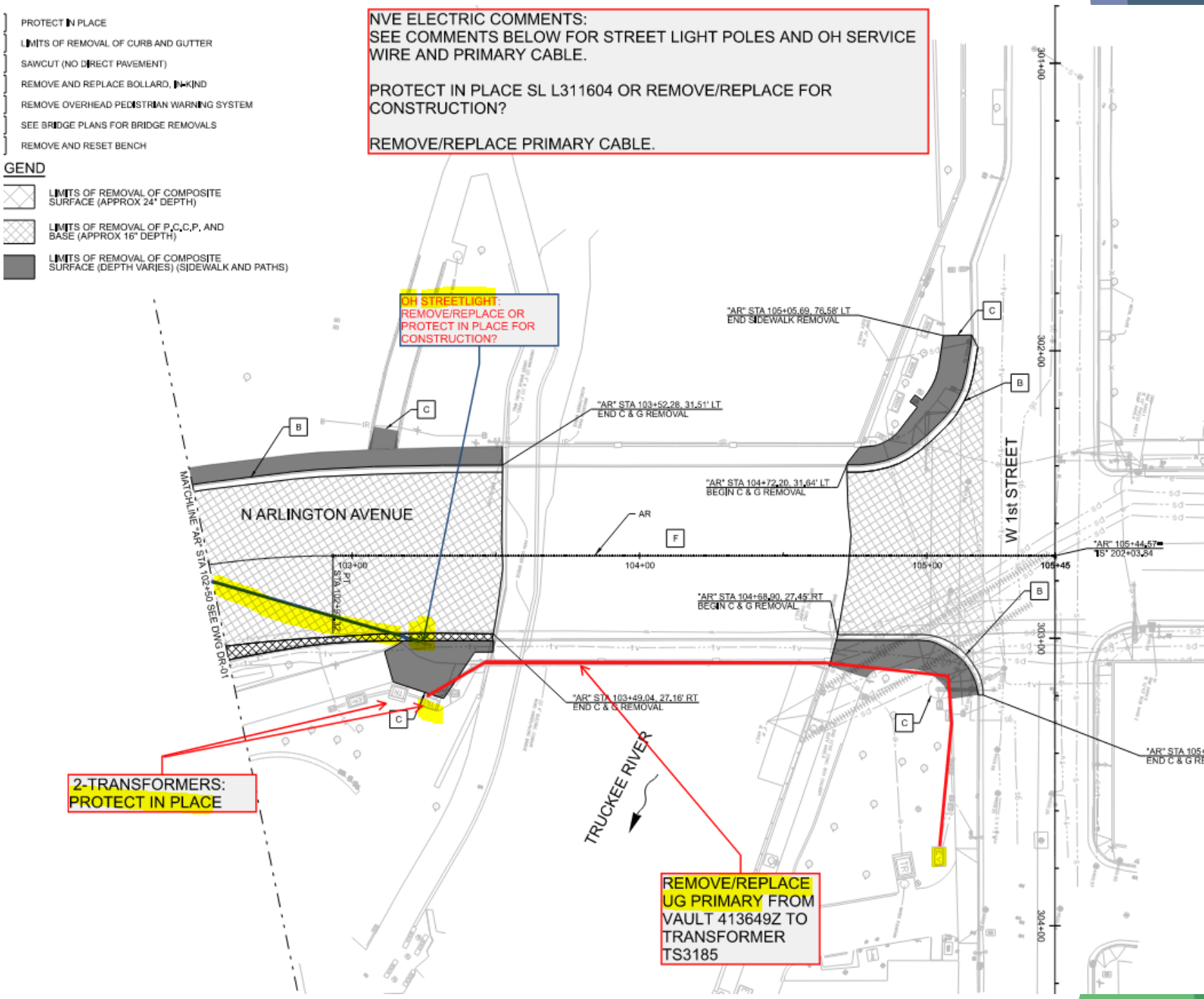
2 ? - City Water (N. Bridge)

1 ? - City IRR (N. Bridge)

North Bridge

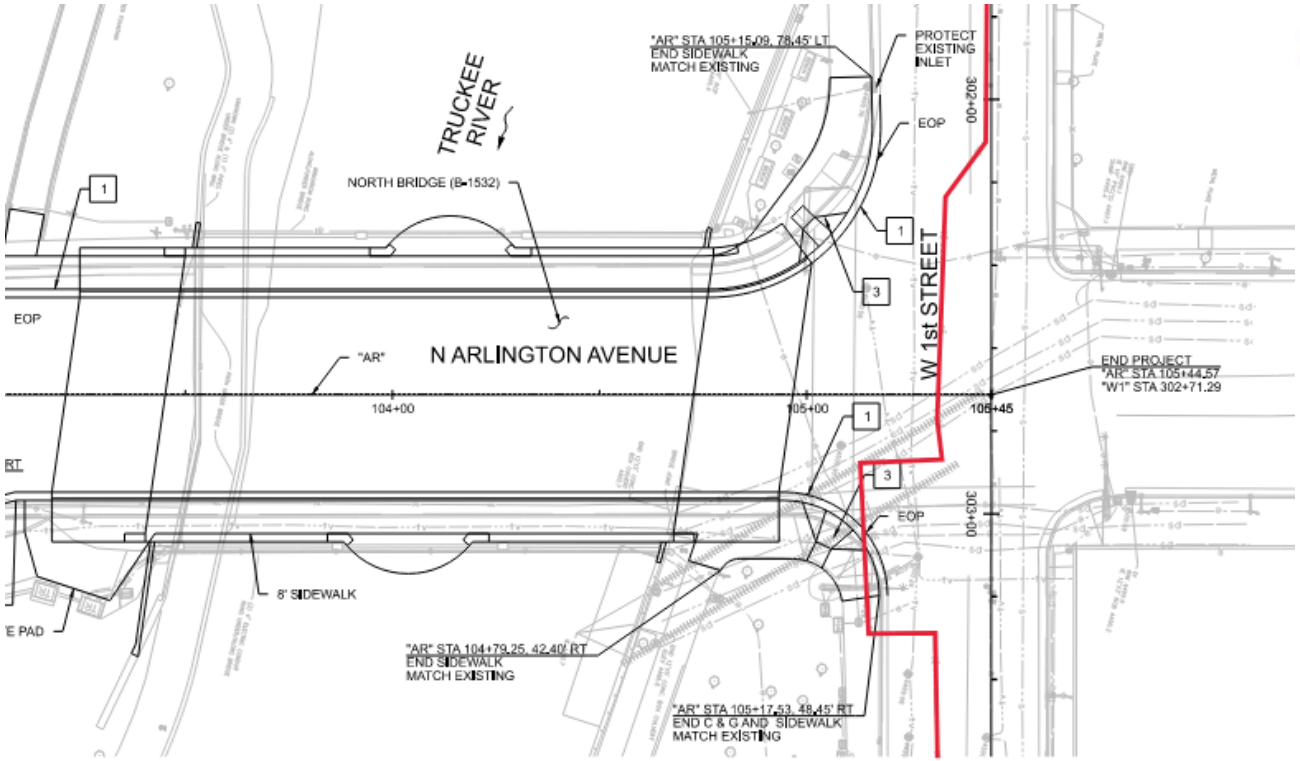
NVE – ELECTRIC

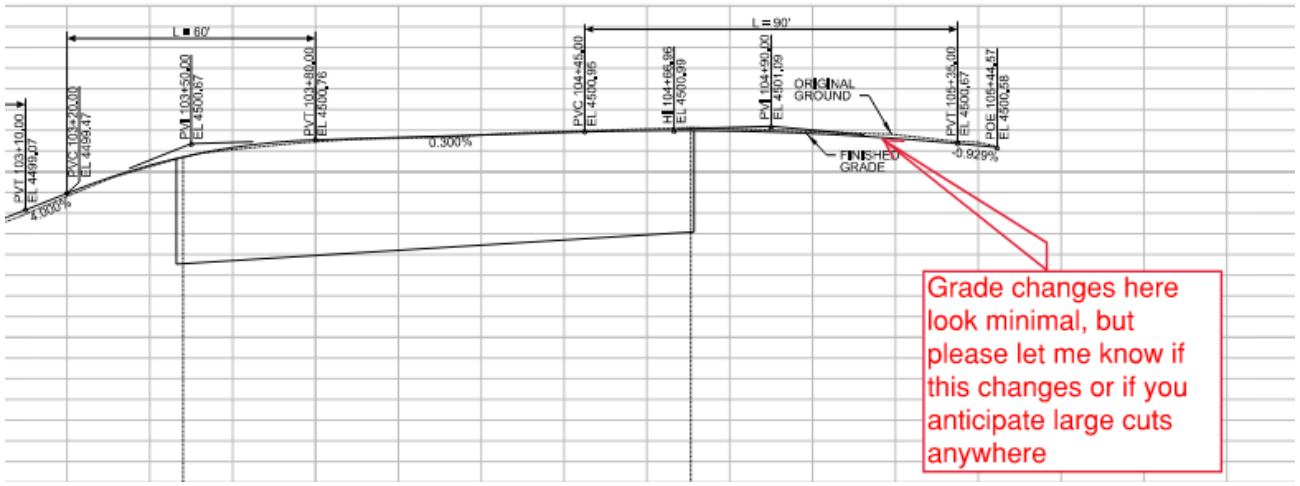
- Underground the OH-E
- Remove/Replace UG Primary from Vault to Transformer Through New Bridge (2-4” Conduits)
- Streetlights and Services in this area directly serve the customer – Apply for Formal Electrical Project: inforeno@nvenergy.com



NVE - GAS

- ✓ Existing along W. 1st St.
- ✓ Excavation for Bridge Abutment
- ✓ Sidewalk Construction





CHARTER

Confirmed:

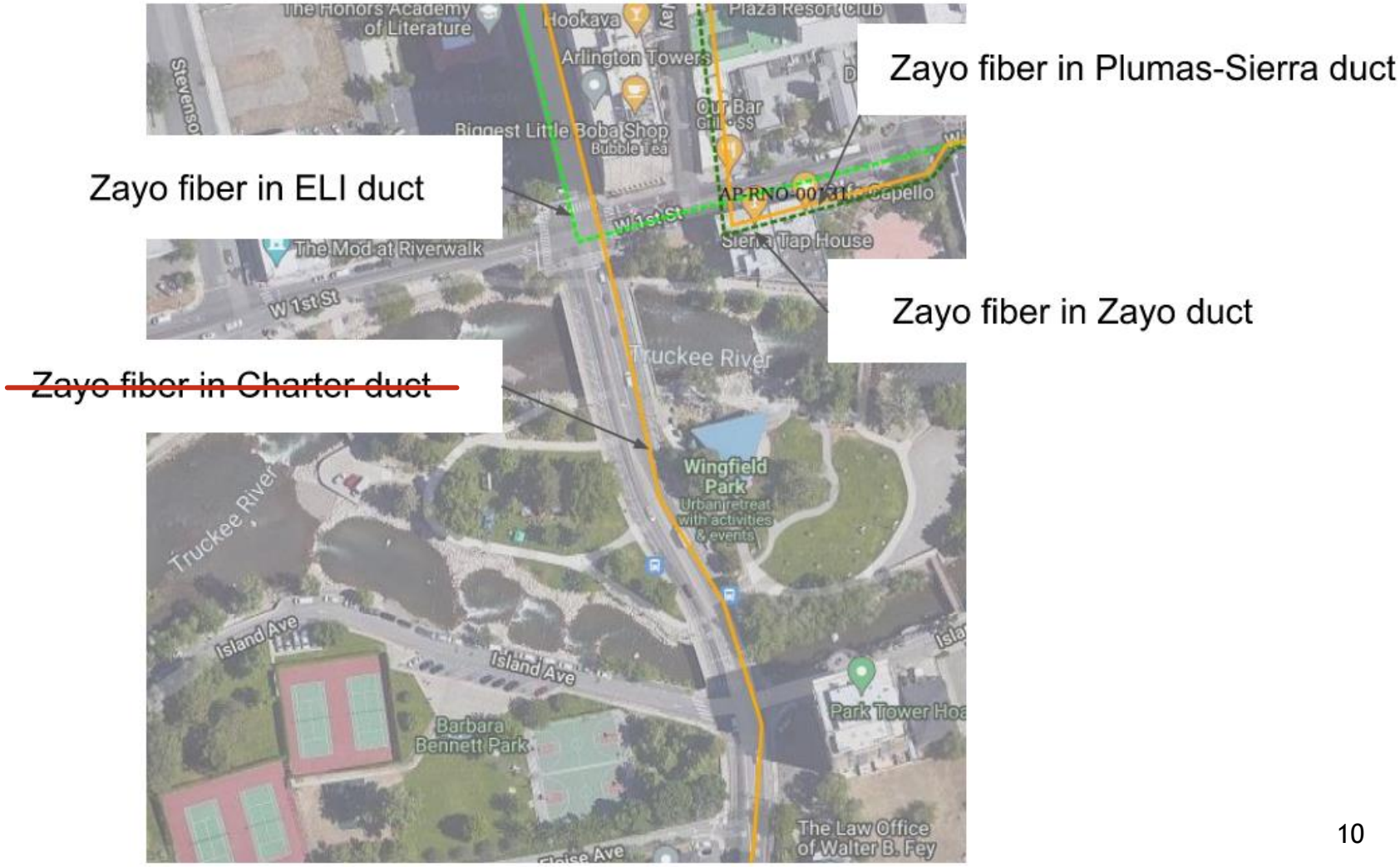
Fiber and Coax - Across South Bridge, north along Arlington Avenue to Amphitheater

ARLINGTON AVENUE BRIDGES PROJECT

ZAYO

* No Zayo Fiber in Charter Duct across South Bridge to Amphitheater

* Zayo would like to have conduit across both bridges and along Arlington between bridges



South End

TMWA

- 8-in C900 Retired in Place within Island Ave intersection
- 8-in Ductile Iron Across Intersection
- West of Intersection– 2 Lines:
  6-in Transite & 8-in C900
- East of Intersection- 1 Line:
  8-in C900
- South of Intersection:
  6-in Cast Iron and 6-in Transite Retired in Place
- Along Arlington:
  6-in Cast Iron retired in place;
  8-in C900 along western side

North End

TMWA

- 8-in Cast Iron within W. 1st Street intersection
- West of Intersection:
  8-in Ductile Iron
  w/ 2-in HDPE lateral
- East of Intersection:
  8-in Transite
- North of Intersection:
  8-in Cast Iron along west side
- Assume Park Irrigation Line from this 2-in HDPE lateral

South Bridge / Floodwall

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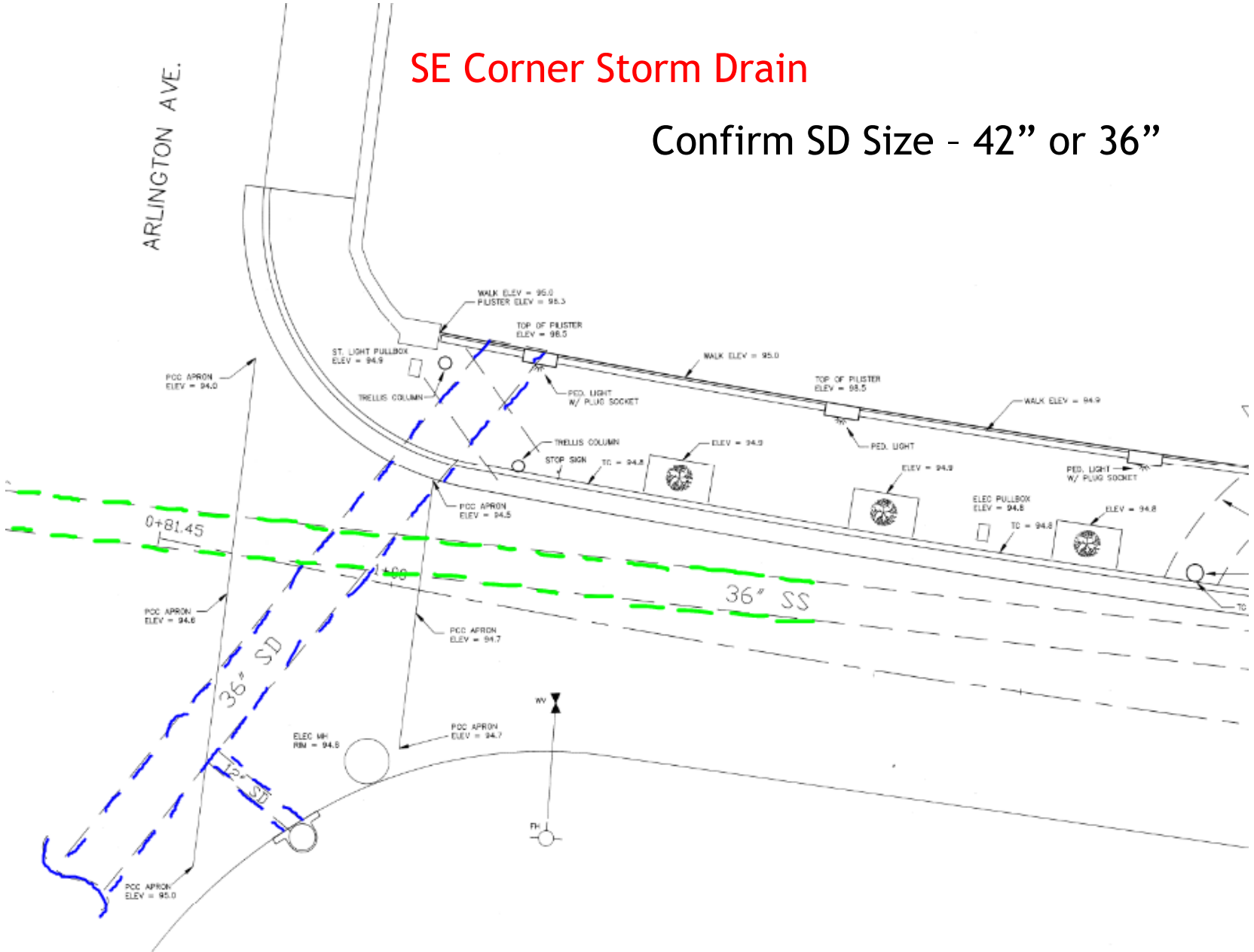
SE Corner Storm Drain

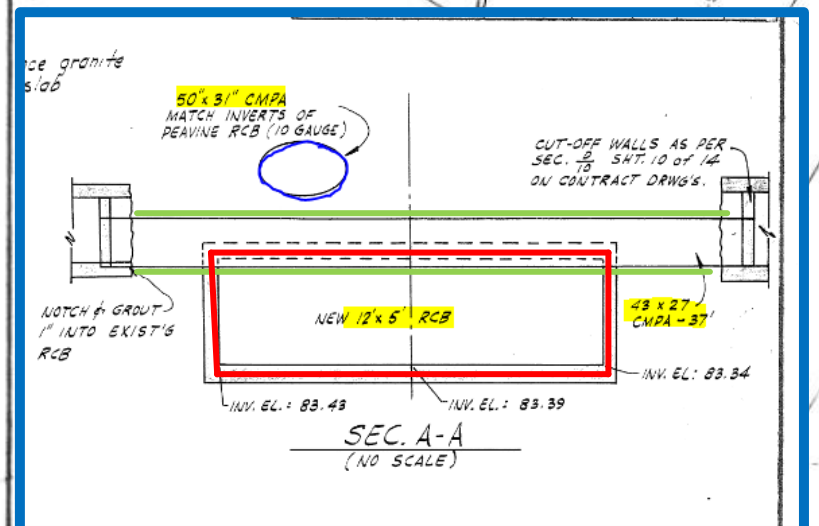
Confirm SD Size – 42” or 36”



North Bridge

Storm Drain

ARLINGTON AVENUE BRIDGES PROJECT



North Bridge

ARLINGTON AVENUE BRIDGES PROJECT

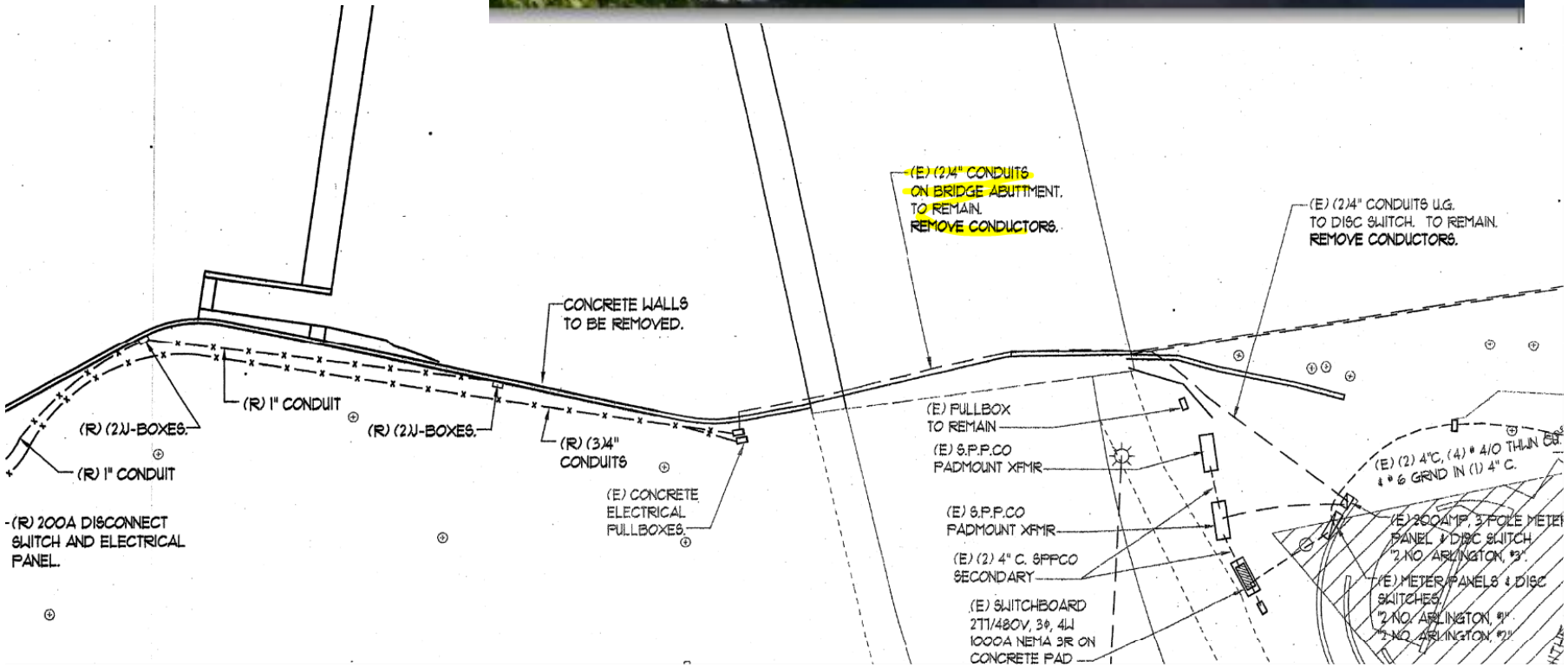
Park Irrigation

- Across West Face of Bridge – 2 Pipes
- Assume 1 for H_2O and 1 electric for sprinkler system?

North Bridge

Conduit Along Path

- 2 – 4” Electrical Conduits
- Conductors removed?

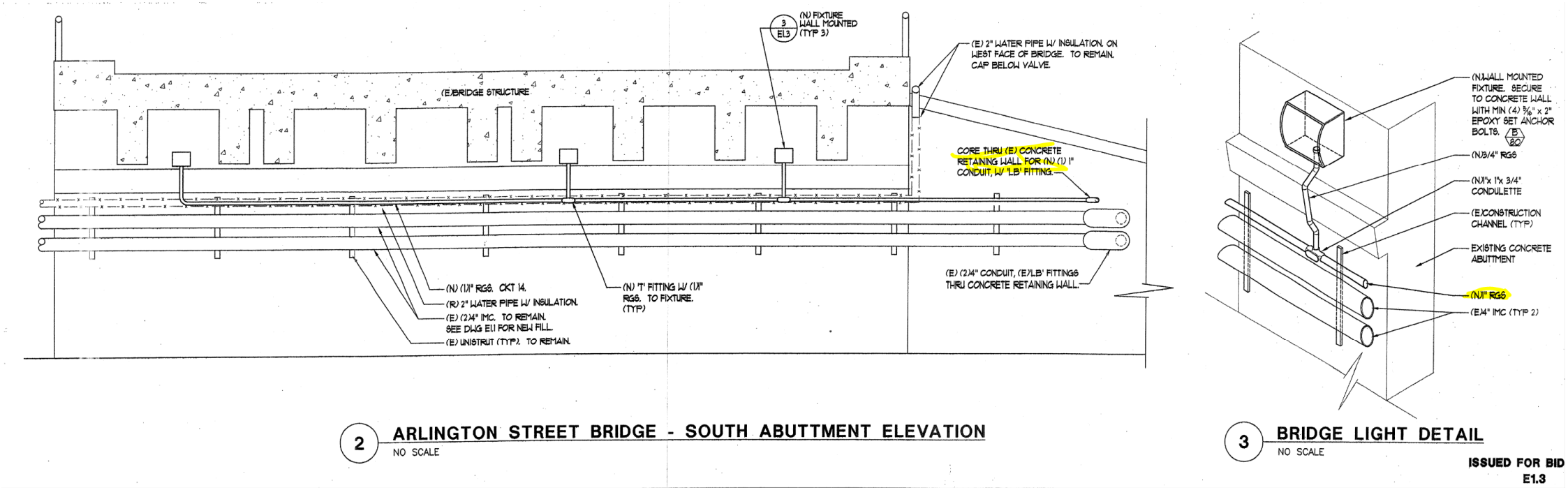


North Bridge

Conduit Along Path

- 1 – 1” Electrical Conduit: Under bridge lighting?

ARLINGTON AVENUE BRIDGES PROJECT



W. 1st Street Intersection Utilities

Traffic Signal Poles

ARLINGTON AVENUE BRIDGES PROJECT

Utilities – Section 408 Permit
Categorical Permission Alteration Description

Categorical Permission Alteration Description –
11. Fiber Optic and Dry Utility Pipes

The categorical permission covers the installation, modification, and replacement of dry utility pipes, such as fiber optic cables, subject to certain terms and conditions. The total area of disturbance must not exceed 5 acres. Utility pipes should be designed to prevent (1) flotation from uplift, (2) scour or erosion, (3) damage from debris on the waterside, particularly during flood flows, (4) leakage, (5) seepage along proposed pipes, (6) corrosion, and (7) damage from vehicular loads.

All new fiber optic, electrical and other dry utility pipes installed by open trench methods must go up and over the levee design water surface elevation (DWSE).

Pipes installed through the levee should be as close to right angles to the levee centerline as practicable.

All pipes and related structures that cross the levee foundation at a depth less than or equal to two times the height of the levee should be analyzed for uplift; pipes crossing the levee surface must be designed to counteract buoyant forces at the DWSE.

Pipe location and orientation must be clearly marked in the field so they can be easily identified for flood fighting crews or maintenance (e.g., electrical pipes).

No plastic pipes (HDPE, PVC, etc.) are allowed in the levee embankment or its foundation unless they are embedded in concrete.

Backfill under and around (to 1 foot over) the proposed pipe must be controlled low-strength material (CLSM). Pipes that pass above the DWSE must have 2 feet of cover (low permeability or CLSM) to prevent damage by vehicles and equipment. Cover material on the levee crown must be placed at a ratio of 10H:1V, in the upstream/downstream direction of the levee. Pipes on the sides of the levee should be covered with a minimum of 1 foot of low permeability material, compacted in 4- to 6-inch lifts or CLSM to protect them from debris during high water (waterside) or to keep them from interfering with or being damaged by operations or maintenance of the levee (landside). Fill must be free of deleterious materials and construction debris and placed in 4- to 6-inch-thick loose lifts and compacted to not less than 95% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D698 (USACE preferred method), or alternately, 90% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D1557. At the sponsor and levee maintaining agency's discretion, pipes on the levee slopes may be left exposed.

Only suitable material must be used as levee fill materials. Fill must be free from: roots and other organic matter, contaminated hazardous or toxic material, trash, debris, and frozen materials. Satisfactory fill material must have a plasticity index between 8 and 25, have a liquid limit less than 45, a minimum fines content of 20%, and 100% passing the 3-inch sieve.

Pipes located within or beneath a levee must have watertight joints that can accommodate movement.

If a chemical or electrochemical reaction is expected, the pipe and pipe couplings must be protected.

The preferred method for abandoning pipes that pass through or over a levee is complete removal. If removal is not feasible, the pipes and other structures may be filled with a cement/bentonite-based grout or flowable fill. The grout needs to be sufficiently fluid so that it can be pumped to completely fill the pipe leaving no voids.

Utilities – Section 408 Permit
Categorical Permission Alteration Description

Note: The following checklist is intended for planning purposes only, and includes information that USACE reviewers look for when considering a Section 408 request for fiber optic and dry utility pipes under the Categorical Permission. To be reviewed under the Categorical Permission, the proposed project must adhere to all requirements of the Categorical Permission, including the full alteration description (see previous page). The plans and narrative project description should reflect this information.

1.	☐ New Installation ☐ Replacement ☐ Modification ☐ Authorize Existing
2.	Maximum total area of disturbance is 5 acres : ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
3.	New dry utility pipes go up and over the DWSE: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
4.	Pipes crossing the levee surface are designed to counteract buoyant forces at the DWSE: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
5.	Plans show that pipe location and orientation will be clearly marked in the field: ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
6.	Plastic pipes within the levee embankment or its foundation are embedded in concrete: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
7.	Pipes passing over the DWSE will have a minimum of 2 feet of cover (low permeability or CLSM): Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
8.	If material must be added to the levee crown, the added material must be sloped at a ratio of 10H:1V horizontal to vertical, in the upstream/downstream direction to prevent a "speed bump" effect and facilitate vehicle access: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
9.	Fill will be compacted to at least 95% of maximum density as determined by ASTM D698, between -2 and +3% of optimum moisture content: ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]

- Continued on next page –

10.	All fill will be free of organics or other inappropriate materials: Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
11.	Satisfactory fill material must have a plasticity index between 8 and 25, have a liquid limit less than 45, a minimum fines content of 20%, and 100% passing the 3-inch sieve: ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
12.	Pipes located within or beneath a levee will have watertight joints that can accommodate movement Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
13.	If a chemical or electrochemical reaction is expected, the pipe and pipe couplings must be protected: Yes ☐ N/A ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
14.	All work above DWSE? Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
15.	Any work >3 feet into the levee embankment? Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
16.	All work below DWSE? Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
17.	Any work within the levee embankment? Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]
18.	Any work ≤50 feet below the channel invert? Yes ☐ No ☐ Reference: [Click to enter document source. Example – plan sheet (p. 4), specs, report.] Comment: [Click to enter rationale, explanation, unique situation, etc.]

Utilities

Any Additional Utility Discussion?

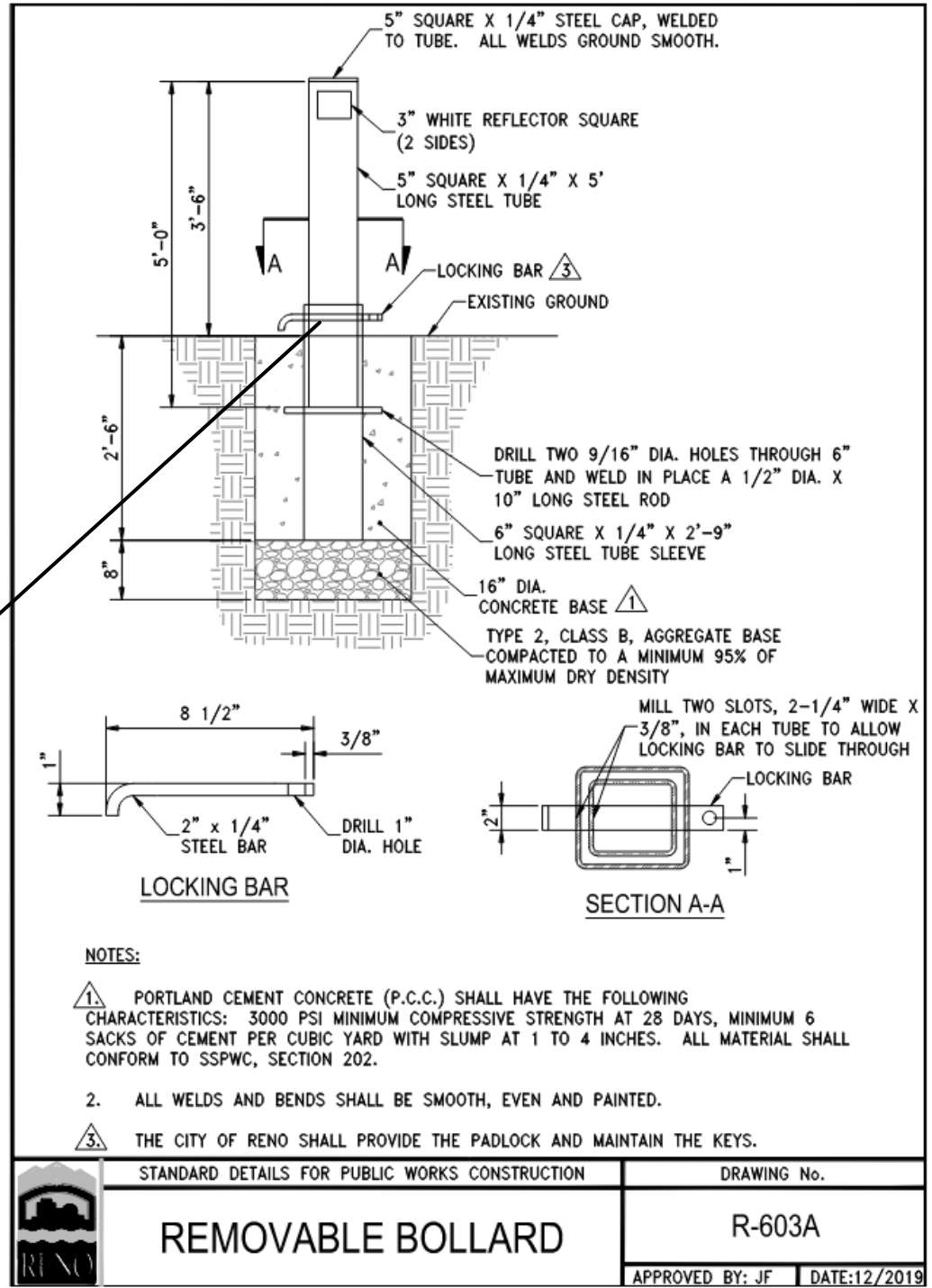
ARLINGTON AVENUE BRIDGES PROJECT

Rectangular Rapid-Flashing Beacon (RRFB)


change to RRFB
hand act. button
x'ing
push button

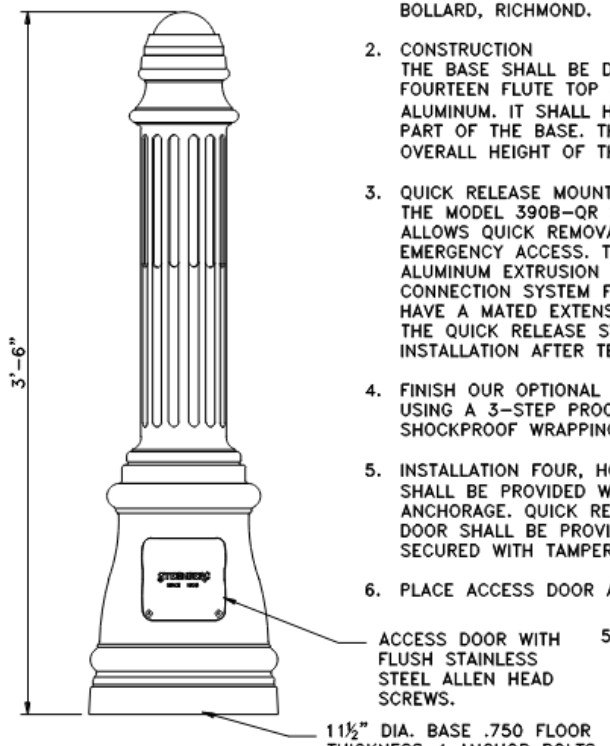
Bollard Detail

Standard Removable Bollard – Won't work with Raised Tube Sleeve above pavement



Virginia Street Bridge Bollard Detail

STERNBERG – RICHMOND
QUICK RELEASE BOLLARD
#390/B/QR/VG
COLOR: VERDE GREEN



NOTES:

1. GENERAL
   THE BOLLARD SHALL BE CAST ALUMINUM, ONE-PIECE CONSTRUCTION. THE 11½" DIAMETER CAST ALUMINUM FLUTED BASE SHALL BE CONSTRUCTED WITH A 5¼" DIAMETER STRAIGHT FLUTED CAST ALUMINUM SHAFT. THE MODEL SHALL BE STERNBERG LIGHTING #390B-QR QUICK RELEASE UNIT BOLLARD, RICHMOND.

2. CONSTRUCTION
   THE BASE SHALL BE DESIGNED WITH A SCULPTURE BELL SHAPED BOTTOM, FOURTEEN FLUTE TOP SECTION AND BE MADE OR HEAVY 356 ALLOY CAST ALUMINUM. IT SHALL HAVE A ¾" THICK FLOOR CAST AS AN INTEGRAL PART OF THE BASE. THE BOLLARD CAP SHALL BE WELDED IN PLACE. THE OVERALL HEIGHT OF THE BOLLARD SHALL BE 42".

3. QUICK RELEASE MOUNT
   THE MODEL 390B-QR SHALL HAVE A QUICK RELEASE OPTION WHICH ALLOWS QUICK REMOVAL OF THE BOLLARD FOR CONVENIENCE OR EMERGENCY ACCESS. THE BURIAL PORTION SHALL BE MADE OF ASTM 6061 ALUMINUM EXTRUSION AND SHALL HAVE A KEYWAY AND FLEXIBLE CONNECTION SYSTEM FOR SECURING TO BOLLARD. THE BOLLARD SHALL HAVE A MATED EXTENSION AND ANTI-ROTATION KEY AND PADLOCK SLOT. THE QUICK RELEASE SYSTEM SHALL ALLOW FOR A FLUSH PAVEMENT INSTALLATION AFTER TEMPORARY BOLLARD REMOVAL.

4. FINISH OUR OPTIONAL ANTIQUE VERDE GREEN FINISH ARE HAND BRUSHED USING A 3-STEP PROCESS. THE TOTAL ASSEMBLY SHALL BE WRAPPED IN SHOCKPROOF WRAPPING OR FULLY ENCLOSED IN CORRUGATED CARTONS.

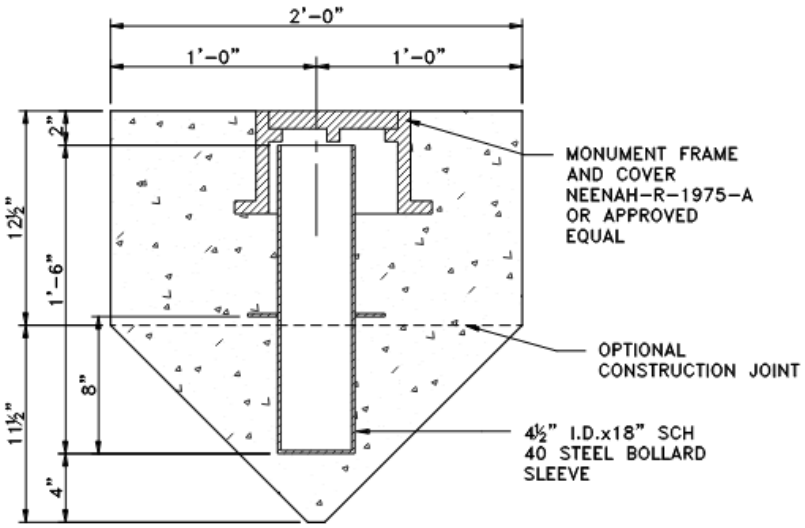
5. INSTALLATION FOUR, HOT DIPPED GALVANIZED "L" TYPE ANCHOR BOLTS SHALL BE PROVIDED WITH THE POST FOR NON-QUICK RELEASE BOLLARD ANCHORAGE. QUICK RELEASE ANCHORAGE REQUIRES NO ANCHOR BOLTS. A DOOR SHALL BE PROVIDED FOR ANCHOR BOLT ACCESS. IT SHALL BE SECURED WITH TAMPER PROOF, STAINLESS STEEL HARDWARE.

6. PLACE ACCESS DOOR AWAY FROM STREET.

STERNBERG LIGHTING
555 LAWRENCE AVE. ROSELLE, IL 60172
(847) 588-3400
FAX (847) 588-3440
EMAIL: INFO@STERNBERGLIGHTING.COM
WWW.STERNBERGLIGHT.COM

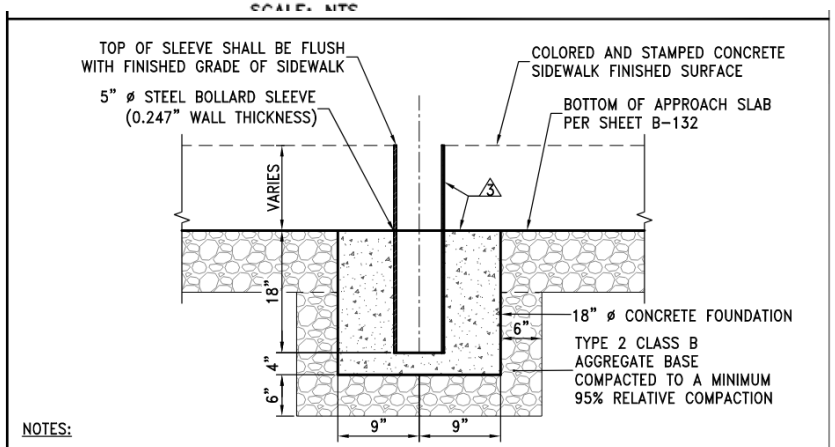
4 / D-02A BOLLARD MODEL 390B-QR

SCALE: NTS



5 / D-02A BOLLARD BASE DETAIL

SCALE: NTS



NOTES:

1. REFER TO DETAIL 5 SHEET D-02 FOR STERNBERG BOLLARD MODEL.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. ALL MATERIALS SHALL CONFORM TO SSPWC.

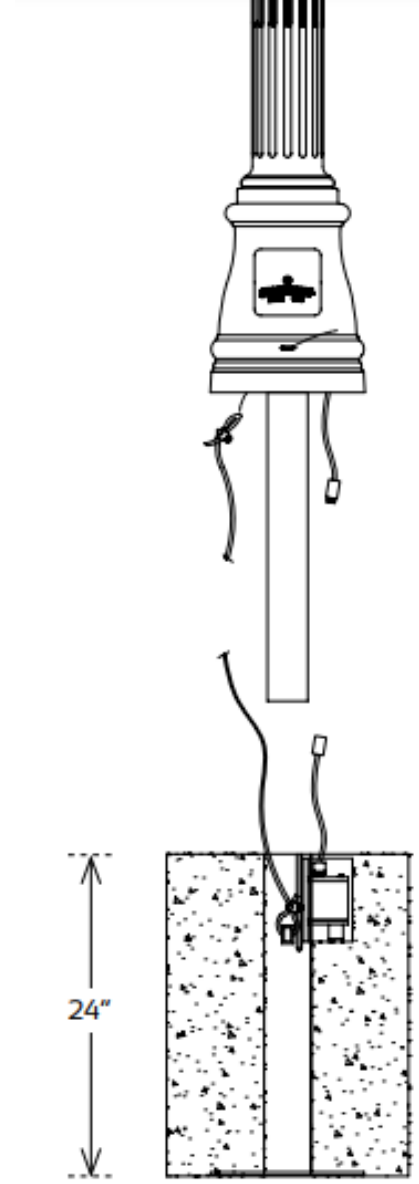
3. PROVIDE FIBERBOARD OR OTHER COMPRESSIBLE MATERIAL ASTM SPECIFICATIONS D 1751, D 1752, OR D 994 AROUND SLEEVE AND BETWEEN CONCRETE FOUNDATION AND BOTTOM OF APPROACH SLAB.

5 / D-03 APPROACH SLAB BOLLARD FOUNDATION

SCALE: N.T.S.

Virginia Street Bridge Bollard Detail

Richmond



QR
Optional Quick
Release Mount

Schedule

ARLINGTON AVENUE BRIDGES PROJECT

Schedule

a. 8/9 - 10/21 - Prepare Overall Project Section 408 Submittal
b. 10/21 - Interim 60% Plans for Section 408 Submittal
c. 10/22-11/25 - CTWCD Section 408 Permit Review
d. 12/13/22 - CTWCD Board Mtg - Approval to Submit Section 408 to USACE
e. 2/10/23 - Complete 60% Design for Internal Review
f. 3/3/23 - Submit 60% Design for Agency Review
g. 9/30/23 - 90% Design
h. 2/28/24 - 100% Design
i. 4/30/24 - PS&E Contract Docs to NDOT
j. 5/20/24 - NDOT Doc Date

Includes Utility Categorical Permission Alterations

Thank You for Participating!

ARLINGTON AVENUE BRIDGES PROJECT

jtortelli@rtcwashoe.com

RENO

NEVADA DOT SAFE AND CONNECTED

U.S. Department of Transportation
Federal Highway Administration

US Army Corps of Engineers

Carson Truckee Water Conservancy District of Nevada

RTC

Building A Better Community
Through Quality Transportation.
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