GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
CWF 2017-01 CAPACITY UPGRADES AT EAST STREET PUMP STATION FOR CSO REDUCTION
ADDENDUM NO. 2

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A. GENERAL

1. Inclusion of this Addendum must be acknowledged by inserting its number on the appropriate page(s) of the Bid Forms. Failure to acknowledge any and all addenda in the above specified bid may be cause for rejection by the Owner on the grounds that it is non-responsive.

SUBMITTED QUESTIONS and REQUESTS FOR INFORMATION/CLARIFICATION:

1. Question: Section 01 14 16, Paragraph 1.1.J.3 clarifies that existing valves may be inoperable. Confirm the existing plug and gate valves shown on drawing M-304 fully operate.

   Response: It is the Owner's understanding that the referenced valves are operable.

2. Question: Spec section 06 82 13 references molded grating but drawing S-001 in FRP notes calls for pultruded grating. Please advise if there is a preference.

   Response: FRP grating shall be pultruded. Specification Section 06 82 13 has been revised as included in this Addendum.

3. Question: Section 31 63 33-Drilled Minipiles:
   a. The micropiles will be installed from grade. Please clarify if the payment for pile length is from grade, or to cut off elevation.
   b. Section 31 63 33 Part 1.2 G indicates one load test is required. The quantity on the bid form indicates 54. Please confirm if 54 load tests are required. If 54 load tests are required, please confirm how many mobilizations will be needed for the tests.
   c. The combined quantity of piles on the bid form lists 4600 LF of piles. In calculating actual pile lengths (from grade), it appears there is total of approximately 8459 LF of Micropiles. Please clarify if quantity on bid form is correct.

   Response: a. Payment for piles shall be from cut-off elevation.
   b. One load test is required. Bid Form has been revised and is included with this Addendum.
   c. Bid Form has been revised and is included with this Addendum.

4. Question: Plan sheet C-103 refers to asphalt pavement to receive SRI Coating. Please provide a specification for SRI Coating.

Response: Product Information for Solar Reflective Coating has been added to Section 32 00 00 and is included in this Addendum.

5. Question: Drawing D-302 – There are notes to remove railing in the wet well only around the stairs. Drawing A-302 has a note for FRP railings in wet well typ. Please clarify if all the existing railing on the wet well walkway should be removed and replaced or just at the stairs.

   Response: The extent of existing railing is reflected on D-302. Demolish all existing railings in the wet well. Replace with FRP railings as shown on the Contract Drawings, including Stair D.

6. Question: Drawing A-801 – Please correct type (49?) at Door number 104-02 on Door Schedule.

   Response: Replace Operations Building Door 104-02 Door Type 49 with Door Type 3.

7. Question: Drawing A-708 – Detail 8, Please provide Canopy specification.

   Response: New Section 10 34 00, Architectural Sunshades and Canopies is attached to this Addendum.

8. Question: Drawing A-302 – Please clarify the following questions regarding the side mounted railing at the five existing openings:
   a. Is the railing to be FRP or aluminum?
   b. Please provide a detail to show how the side mounted posts attach to the opening where the L4x4x3/4 grating support is located (See S-302).
   c. Please confirm the grating over the openings should be fabricated with banded holes to allow the side mounted railing posts to pass through.

   Response: a. Railing is aluminum.
   b. Modify angle to accommodate railing brackets and post. Refer to Sheet A-709 for railing bracket.
   c. Confirmed.

9. Question: Drawing A-307 shows the generator enclosure/canopy and references the electrical sheets, TYP. Upon review of the electrical drawings there are no details for the generator enclosure/canopy. Please provide details for Generator Enclosure as none are detailed on the drawings or specified under the generator specification.

   Response: Refer to Section 26 32 13, Engine Generators including Paragraph 2.7 for enclosure details. Submission of signed and sealed design of enclosure and conformance to Code has been added to Paragraph 1.4 via this Addendum.

10. Question: Drawing A-708 – Detail 5, Please provide Flood Barrier specification.

    Response: Requirements for Flood Barriers has been added via this Addendum to Section 05 50 13, Miscellaneous Metal Fabrications.

11. Question: Please confirm that all secondary/supplemental framing required for the solar panels are part of the allowance under bid item 2.5.

    Response: Confirmed.

12. Question: Drawing A-203 general note 1.1 for the Inlet Works the existing concrete roof slab we are to assume 33% of the roof area will require patching at a depth of 3/8". Drawing A-001 under Architectural notes #5 and #5A it states that the concrete roof slab will be repaired assuming 25% of roof slab and will require a ½" repair mortar fill. Please confirm the following:
    a. Percentage of repair we are using as these notes are conflicting
    b. The depth and specific type of repair as these notes are conflicting
    c. Is this repair for all existing concrete roof slabs, both the Inlet Works and Operations Building?
    d. Is the crack repair/injection to be done from the top of concrete roof slab or from underneath?

    Response: a. Use repair area and depth of repair noted on A-001 for both Operations Building and Inlet Works roof slabs.
    b. Use repair area and depth of repair noted on A-001 for both Operations Building and Inlet Works roof slabs.
    c. Use repair area and depth of repair noted on A-001 for both Operations Building and Inlet Works roof slabs.
    d. Repair from the top of the slab is generally preferred, however, this would depend on the nature and location of the crack to be repaired. To be reviewed on a case-by-case basis.

13. Question: Specification section 09 61 53 1.1. A. 2 Concrete Hardener (CH) – Are interior floors not on Drawing A-802 Finish Schedule intended to receive CH.

    Response: Yes, unless specifically called out not to receive a finish.

14. Question: Drawing A-802 has a schedule noted as Window and Louvers Schedule, however there are no louvers in the schedule. Please provide information on the louvers.

    Response: Louvers are as indicated in the "Louver Types" area beneath the schedule and as specified in Section 08 90 00.

15. Question: Section 01 51 41 (Temporary Pumping) Please clarify the following;
    a. Would the Owner cover the cost of electrical power consumption for bypass pumping?
    b. If electric pumps are used, would they need to be installed above 100-year flood elevation?

    Response: Cost of electrical power consumption for temporary pumping will be paid for by the Owner. Temporary equipment, including pumps, do not need to be located above the 100-year flood elevation. However, the Contractor is responsible to secure all temporary equipment and ensure continued operation if the site needs to be prepared for a flood (as outlined in the Flood Contingency Plan).

16. Question: Drawing D-202, Hazardous Material Note 3, is the roof covering to be included in the PCB assumption?

    Response: Yes. Contractor shall assume all roofing materials are TSCA regulated PCB waste >50 ppm.

17. Question: Specification 09 26 13 Gypsum Veneer Plastering, please provide schedule showing locations to receive.

    Response: Refer to Sheet A-317, Section 2. The product specified in Section 09 26 13 is to be provided where Stucco Finish is indicated.

18. Question: Drawing A-001, Note 4 – Please clarify which painting system is to be used in Section 09 91 00 for the cementitious skim coat and painting.

    Response: Refer to Painting Schedule in Section 09 91 00. Note that a surfacer has been added to System D via this Addendum.

19. Question: Please clarify which painting system in 09 91 00 is to be used for the chemical resistant coating in the wet well.

    Response: Refer to Painting Schedule in Section 09 91 00. Provide System B as noted.

20. Question: Drawing I-107 – There are ball valves shown on the atmosphere intake for the Grit blowers. The mechanical drawings don't show any intake piping or valves. Please clarify if piping and valves are required for the atmosphere intake.

    Response: No valves or piping beyond what is supplied with the equipment skid are required for the grit blower intake. Clarified via this Addendum.

21. Question: Drawing I-105 / 107 – Shows the discharge piping to each grit collector without any common header. Drawing M-207 shows a common header with valves

off the blowers. Please clarify if the piping and valves is as shown on the Instrumentation or the Mechanical Drawings.

Response: The mechanical drawings reflect the correct layout. Sheet I-107 revised and included with this Addendum.

22. Question: Drawing I-105 – Shows the 3" PA going directly into each grit collector. Drawing M-210 shows three separate lines with valves going into each grit collector. Please clarify if the piping and valves is as shown on the Instrumentation or the Mechanical Drawings.

    Response: The mechanical drawings reflect the correct layout. Reference Sheet M-210.

23. Question: Section 01 14 16-part 1.4 D.6 indicates we are to relocate Operations Building Controls and communication equipment from upper level to Ground Floor to maintain automated control of inlet works and Operations Building Equipment and remote monitoring capability. On drawing I-101 note 1 indicates that the existing Frontier Fiber Trunk Cable DEMARC Box, switch, and setup located in the 1st level basement of the Operations Building shall be relocated to the New Control Room in the Operations Building. Main Fiber Trunk cable shall be re-terminated at the relocated Frontier setup in the Control Room. Please confirm the following:
    a. Is the work outlined in note 1 the work of the Contractor, AESS, PCSS, or Frontier?
    b. Is the work outlined in note 1 all of the work required/expected for the that outlined in 01 14 16-part 1.4 D.6?
    c. Do power/signals from sources at the two buildings have to be relocated with the equipment in Note 1 on I-101?
    d. Can a one-line be provided for this work?

    Response:
    a. Relocation of the service shall be coordinated with Frontier.
    b. Work described in Section 01 14 16 relates to relocation of the Processer that controls equipment operation. This is required if existing equipment is remaining operational when demolition of the existing Control Room occurs. Note 1 on Sheet I-101 refers to communications equipment. These are two separate coordination items.
    c. Note 1 on Sheet I-101 refers to communications equipment.
    d. Need for temporary control is dependent on construction schedule and sequence of work.

24. Question: Please confirm if the 24" Pump suction flared fitting in the Wet Well as shown on M-305 is part of the flow conditioning system and needs to be provided by the pump supplier.

Response: The flared fitting is a standard fitting and is not required to be provided by the pump supplier.

25. Question: The drawing list on G-2 indicates there is a drawing M-401 which is not in the plan set we received, please provide.

    Response: Provided in Addendum No. 1.

26. Question: Section 01 14 16-part 1.4 D.4 indicates we are to install combination air release/vacuum valves at West Side Force Main Harbor Crossing. Upon review of the specifications/drawings there are no details for this work. Please provide drawings for the proposed work noted.

    Response: Provided in Addendum No. 1.

27. Question: Section 01 14 16-part 1.4 D.3 indicates contractor is to investigate outlet pipe at existing catch basin to confirm discharge location. Please confirm where this work is denoted on the drawings.

    Response: Refer to Sheet C-102, Grid C-2 for location.

28. Question: Please provide specification for combination air release/vacuum valves as none are specified in section 40 05 53.

    Response: Specification Section provided in this Addendum.

29. Question: Section 46 21 16, Subsection 1.1.A.2 states that the existing bar screens shall be salvaged and turned over to the OWNER. CONTRACTOR shall coordinate with the equipment manufacturer for modifications to the existing screens as needed should this equipment be utilized for temporary screening as described in Section 01 14 16, Coordination with Owner's Operations. Once existing screens are removed from service, they shall be factory cleaned and refurbished by the manufacturer and delivered to the OWNER (one screen to East Shore WPAF and one screen to Boulevard Pump Station)
    a. Please provide the definition/specifications for the terms "factory cleaned" and "refurbished" so the manufacturer has a defined scope of work.
    b. Per Duperon and their conversations with GNHWPCA/Arcadis, one of the East Street FlexRake screens will be removed and used for the temporary bypass service in a new 5.5' wide x 16' 3.75" deep bypass channel and every other bar rack must be removed to convert from ¾" to 1.5" openings, and flow guides must be provided to accommodate the 5.5' wide bypass channel, as the screen width is 4'. The bypass channel depth is apparently the same as the influent channels. Please confirm these items as they are not defined in the documents.
    c. The other East Street FlexRake screen is to be moved to the Boulevard pump station bypass influent channel after it is cleaned and refurbed. Based on

Duperon' s records, Boulevard channels are 16' 3.75" deep versus 13' 7.75" in East Street, so this screen would have to be lengthened and the ¾" openings will be retained. Please confirm as they are not defined in the documents.

d. Please confirm screen that is used for the temporary screen at East Street PS has to be cleaned and refurbed both before use as the temporary screen and after use.
e. Please confirm if the temporary screen is to remain in place after use or transported to the East Shore WPAF.

Response:

a. Manufacturer's standard / recommended services will satisfy the requirement of the Contract Documents.
b. Confirmed.
c. Confirmed.
d. Factory cleaning and refurbishment of the screen to be used on a temporary basis in the new Inlet Works Isolation chamber is not required prior to use provided that the modifications needed can be accomplished on site.
e. Transfer to East Shore WPAF subsequent to cleaning and refurbishment by Manufacturer.

30. Question: Please confirm if flushing water is required for all submerged hanger bearings on the four (4) submerged grit screw conveyors as detailed in section 46 23 13.

Response: No flushing water required; periodic grease lubrication is needed.

31. Question: Please confirm if drains lines are required for the screenings screw conveyor, belt conveyor, and main pumps as none are shown on the mechanical/plumbing drawings.

Response: Drain lines shall be provided for screenings screw conveyor and belt conveyor and routed to the nearest channel for discharge. Size to match the equipment drain size provided. Main pumps do not require drain lines.

32. Question: Please confirm if the Grit Blower intakes are pulling in air from the room or an intake line needs to run through the roof/wall.

Response: Intake air for the grit blowers is through the room.

33. Question: Are drain lines required for the two (2) 12" Surge Relief Valves on drawing M-306 section 1.

Response: No, the valves are oriented such that the dry side of the valve will not retain water.

34. Question: Drawing M-701 details the work for the in-line check valve at the concrete junction chamber CSO-021. In all of the notes it does not indicate that there is an existing check valve to be removed however C-102 indicates remove and replace. Please confirm if there is an existing inline check valve that needs to be demolished and if so, please provide information of what is existing.

    Response: The existing check valve is a Tideflex Series TF-1 valve, mounted to the chamber wall. A drawing showing the installation has been attached to this Addendum for reference. Detail on Drawing M-701 has been modified to note that the existing check valve shall be demolished subsequent to installation of the new valve.

35. Question: Please confirm if there is insulation required for the PA – SS piping systems at the Inlet Works.

    Response: No insulation required on the stainless steel process air piping.

36. Question: One of the existing East Street FlexRake® screens will be modified for use in a new temporary bypass channel that will measure 5.5’ wide x 16’ 3.75” deep. Duperon will remove every other bar to convert the bar openings from ¾” to 1.5”. Flow guides will be provided to accommodate the 5.5’ wide bypass channel, as the existing screen width is 4’.

    Response: Noted.

37. Question: The other existing East Street FlexRake screen will be modified to be used in a channel in the Boulevard pump station. This screen will be lengthened to accommodate the Boulevard channels, which we understand are 16’ 3.75” deep versus the East Street channels, which are 13’ 7.75” deep. Screens in both East Street and Boulevard are 4’ wide. The ¾” openings will be retained.

    Response: Noted.

38. Question: Section 26 29 23, 1.4.D.1.a - Spare parts list is not applicable to small integral VFDs controlling screening equipment. One spare VFD will be supplied instead. Please confirm this is acceptable.

    Response: Confirmed.

39. Question: Drawings I-103 and I-104 - There is a note saying to look at E Drawings for wiring between VCP and LCS. These details could not be found in the E-drawings provided. Please provide this information.

    Response: Refer to Sheet E-105. LCS is noted as CS.

40. Question: Section 40 78 00, 2.13.B - Please clarify if this list of spare parts applies to vendor-supplied control panels. There is a spare parts list in the Screening equipment spec section that is more appropriate for those panels.

    Response: Spare parts shall be per the screening equipment specification.

41. Question: Section 46 21 16, 1.1 C 2 - Section 05 05 33 Anchor Systems is not listed in this package. Can it please be provided.

    Response: To be provided by Bidding Contractor.

42. Question: Section 46 21 16, 1.1 C 2 - Section 09 91 00 Painting is not listed in this package. Can it please be provided.

    Response: To be provided by Bidding Contractor.

43. Question: Section 46 21 16, 2.1 B - Channel invert on drawings equals EL -2.95. Please confirm the correct elevation.

    Response: For Correct Elevations - Refer to Drawings

44. Question: Section 46 21 16, 2.1 B - Operating floor level on drawings equals EL 10.7. Please confirm the correct elevation.

    Response: For Correct Elevations - Refer to Drawings

45. Question: Section 46 21 16, 2.3.I.4.e - Motors are inverter rated only and may only be nameplated at 1.00 service factor.

    Response: Acknowledged.

46. Question: Section 46 21 73, 2.1 A 3 –One of the approved listed washer compactor manufacturer designs do not require a spool piece for a grinder or integral auger brushes. Screenings should fall into the hopper in its original form to be processed. Please confirm this is acceptable.

    Response: Accommodation for future grinder installation is required.

47. Question: Section 46 21 73 Sub 2.4.G.1 –The screening section states that anchorage is by contractor. The washer compactor section states that anchorage is to be provided by the manufacturer. Please confirm/clarify.

    Response: Contractor shall furnish as sized by the Manufacturer.

48. Question: Section 46 21 73, 2.5 C - Gas shielding to the exterior only will be provided.

    Response: Noted.

49. Question: Section 46 21 73, 2.5.F.1 –The washer compactor calls to be welds passivated. There is no requirement for the screen to be welds passivated. Please confirm/clarify how the site wants this complete. Please keep in mind that welds passivation for the bar screen will come with significant cost increase.

    Response: Screen welds do not require passivation.

50. Question: Section 46 21 73, 3.4 C 1 - Design criteria indicate a volume of 30 cubic feet for washer compactor max capacity. 50 cubic feet would require a different model washer compactor than what is being offered based on flows and design criteria. Please confirm.

    Response: Performance test requirements have been revised.

51. Question: Section 46 21 73 3.4 C 1 - Duperon washer compactor is designed to run between 3-10 gpm. The 4" drain listed in subsection 2.3.A.3 will not handle 400 gpm with gravity flow. Please confirm the amount of flow expected during the performance test.

    Response: Performance test requirements have been revised.

52. Question: Referencing Specification section 43 26 33, “Sluice Gate and Appurtenances”, in lieu of the Cast Ni-Resist gates as specified in this section, would you accept fabricated stainless steel slide gates as specified in section 43 26 23 “Stainless Steel Slide Gates” for the following gate tag numbers:
    SL-48x72-403
    SL-48x72-401
    SL-48x72-402
    SL-66x66-001
    SL-54x48-004

    Response: Sluice gates shall be provided as specified.

53. Question: Addendum 1 – Q & A 4 and Drawing C-2 – Confirm that we can utilize the existing access easement that extends through the ground floor of the parking garage. Additionally, confirm that we can remove and re-install the fence separating this easement from the pump station site.

    Response: Use of the existing easement shall be coordinated with the adjacent property owner subsequent to project award.

54. Question: Addenda 1 included the Prebid agenda. Item 2, includes a description of work stating "the Work in the Inlet Works shall include concrete repair and protective coating." Please clarify the limits of protective coating in the Inlet Works building.

    Response: All channels shall receive protective coating. Refer to sheets A-222, 223, and 802.

55. Question: Specification Section 31 63 33 Drilled Minipiles, 1.2C, says that conflict between new and abandoned pipe pile should be anticipated. If this should be anticipated, we request a pay item be established to cover this cost. Abandoned Minipile, units LF should address well. Drilling obstructions, unit HR would also work. If not how would we be compensated?

    Response: A Unit Price has been added for Abandoned Micropiles.

56. Question: Will the test pile installation be measure for payment under items 02300-1 Pile Installation LF? If so, what cut off grade can we measure from? (existing grade?) Will the test pile installation be measure for payment under items 02300-2 Pile Load Test EA?

    Response: The test can be performed on production pile or on a sacrificial "test" pile. Note that Section 31 63 33 Paragraph 3.3 specifies the load test be performed on a pile installed through the existing pile cap at the Inlets Works building. Contractor shall consider their preferred approach and include all costs to perform the testing as a lump sum to perform the load test. If they are proposing to test a production pile, then the cost to install the pile would be included in the production pile footage.

57. Question: Bid Form & Section 01 22 13 Measurement and Payment. This bid form and measurement for payment format does not match the specifications Specification Section 31 63 33 Drilled Minipiles 4.2E.

    Response: Noted and updated accordingly.

58. Question: Item 3.9 Pile Installation (through existing foundations) is 1700 LF. This item seems to be for the 36 minipile at the Inlet Works.

    Cutoff Elevation = 6.53
    Minimum Tip is -72
    Minimum Length is 78.53 FT x 36 Minipile = 2827LF

    This is much higher than the 1700 LF bid item. If I evaluate the takeoff all 85 of the permanent minipile in the same manner I come up with 6589 LF

    This is much higher than the total of Item 3.8+2.9 = 4600 LF.

Response: Bid Form has been updated and is included with this Addendum.

59. Question: Item 3.8 Pile Installation(not through existing foundations) is 2900 LF

Similar issue – See question above.

Response: Bid Form has been updated and is included with this Addendum.

60. Question: Item 3.10 Pile Load Testing is 54 EA. Specification Section 31 63 33 Drilled Minipiles, 1.2G, requires 1 test, that is typical. Please describe where the 54 tests are required or amend the bid form.

Response: Bid Form has been updated and is included with this Addendum.

The following changes are hereby made part of and must be attached to the Project Manual and Contract Drawings:

C. CHANGES TO GENERAL INSTRUCTIONS

1. Replace Section 00 41 13, Bid Form with the version included as an Attachment to this Addendum.

D. CHANGES TO TECHNICAL SPECIFICATIONS

1. Section 01 22 13, Measurement and Payment. Add new Paragraph 1.3.G.10. as follows:
"10. Abandoned Micropiles:

a. Description:

i. This item shall be compensation for micropiles which must be abandoned prior to completion due to conflicts with existing piles or drilling obstructions and shall be inclusive of all labor, equipment, and incidentals.
ii. Perform work as directed by and in accordance with all requirements of Section 31 63 33, Drilled Minipiles.

b. Payment:
i. Payment for this item shall be at the Contract unit price bid per linear foot of pile."

2. Section 05 50 13, Miscellaneous Metal Fabrications. Add new Paragraph 2.2.L. as follows:
"L. Flood Barrier Panels.
1. Design Criteria:

a. Design watertight planks to perform under hydrostatic loads (and hydrodynamic or other loads as specified) to control short-term load pressures indicated. All water pressure loads and operating loads are transferred to the building structure.
   i. Design of flood planks shall withstand hydrostatic pressure up to EL 16.0.

b. Flood barrier(s) shall be designed with a minimum 2:1 factor of safety based on material yield strength, and shall provide an effective seal against the design flood level.

c. Frame shall have mounting holes for epoxy anchors for block walls, and studs for embedment in concrete.

2. Materials:
   a. Panel: Carbon steel mechanical tubing or Aluminum Alloy (6061).
   b. Frame and Sill: Stainless Steel Type 304.
   c. Finish: Panel—high solids mastic epoxy painted. Wall frame: high solids mastic epoxy painted or aluminum with mill finish.
   d. Seal: Chloroprene solid rubber sheet with closed cell foam outer gasketing or compressible rubber type EPDM. Gasket to be field replaceable.
   e. Mounting anchors: Stainless Steel Type 304. Provide Multi-Panel Systems with removable mullions between panels for openings too wide to be accommodated by single panel.
3. Storage:
   a. Provide four 12” projection steel wall arms and two shelves to store planks and accessories.
   b. Provide 7 x 19 vinyl coated stainless steel cable, 1/4-inch wire diameter, looped ends with 2-1/2 inch stainless steel spring snap hooks and 3/8-inch by 4 stainless steel eye bolts anchored to wall.
4. Product and Manufacturer: Provide one of the following:
   a. Model FB33-FM and Fastlogs by Presray
   b. Model FP-530FM by PS Doors
   c. Model FP-M by Walz & Krenzer, Inc.
   d. Or equal.”

3. Revise Section 06 82 13, Fiberglass Reinforced Plastic Grating as follows:

2.1, A, a. Load Table – replace “300” psf with “250” psf.

Delete Paragraph 2.1.B. in its entirety and replace with the following:

“B. Pultruded FRP Grating: Provide products conforming to the following:
1. Grating shall be pultruded construction with I-bar configuration of bearing bars and tie bars providing single-directional strength.
2. Depth: 1.5-inch minimum
3. Bearing Bars: Fiberglass I-bar minimum of one-inch spaced at 1.2-inch on centers.

4. Cross-Bars: Swage-locked to bearing bars at maximum spacing of four inches on centers."

Delete Paragraph 2.2.A. in its entirety and replace with the following:

"A. Pultruded FRP Grating:
1. Products and Manufacturers: Provide one of the following:
a. Safe-T-Span Pultruded Grating, by Fibergrate Composite Structures, Inc.
b. Duradek Pultruded Fiberglass Grating, by Strongwell Corporation.
c. Or equal"

Delete Paragraph 2.2, B, in its entirety and replace with the following:

"B. Stair Treads: Provide one of the following:
1. Products and Manufacturers: Provide one of the following:
a. Safe-T-Span Pultruded Treads, by Fibergrate Composite Structures, Inc.
b. Duradek Pultruded Treads, by Strongwell Corporation.
c. Or equal."

4. Section 09 91 00, Add the following to the Schedule for Table 09 91 00-D Cast-In-Place Concrete. "Prep substrate with Surfacer -Series 218 Mortar Clad (TCI)-Carboguard 501/510 (TCC). Epoxy Modified Cement 100%".

5. Add new Section 10 34 00, Architectural Sunshades and Canopies.

6. Add new Paragraph 1.4.B.e.6) to Section 26 32 13, Engine Generators as follows:

"6) Submit calculations, signed and sealed by a Professional Engineer registered in Connecticut, demonstrating that the custom enclosure design complies with the requirements of the Building Code."

7. Section 31 63 33 Drilled Minipiles. Delete Paragraph 4.2.E. and replace as follows:

"E. All work shall be performed for the Unit Prices specified in Section 01 22 13, Measurement and Payment."

8. Add new Paragraph 2.1.S. to Section 32 00 00, Form 818 Site Work as follows:

"S. SOLAR REFLECTIVE COATING. Solar Reflective Coating shall be provided on asphalt paved areas as indicated on the Contract Drawings. Coating shall have a Solar Reflective Index of at least 29 and calculated consistent with ASTM E 408 or ASTM C 1371 and ASTM E 903, ASTM E 1918 or ASTM C 1549. Coating shall be a polymer modified cement mixed with aggregates, fibers, and solar reflective pigments as manufactured by: Endurablend, DecoCoat or equal."

9. Add new Section 40 05 86, Air Valves for Water and Wastewater Service as included with this Addendum.

10. Section 43 21 13, Centrifugal End Suction Pumps Dry Pit, replace Paragraph 2.3.A.1.a. as follows, "Material to be a minimum of ASTM A48 Class 30".

11. Section 46 21 16, Paragraph 2.1 B. Revise table lines as follows:

    "Screen Channel Invert: Refer to Contract Drawings
    Operating Floor Elevation: Refer to Contract Drawings"

12. Replace Section 46 71 23, Screenings Washing and Compacting Equipment; Paragraph 3.3.C.1. with the following:
    "Introduce over a 40 minute time interval 30 cubic feet of wet, non-compacted screenings previously obtained from the station influent. Demonstrate that all screenings are processed through the unit without malfunction. The entire system shall be shown to operate without any leakage, and the final discharged product shall be sufficiently compacted and dry to be handled easily."

E. CHANGES TO CONTRACT DRAWINGS

1. Sheet M-701, Add Note 0. to Sequence of Installation for CSO Check Valve as follows, "0. The existing check valve within the structure shall be demolished subsequent to installation of the new valve."
2. Sheet A-203. Revise General Note 1.1 as follows: "FOR ROOF REPAIR QUANTITIES REFERENCE SHEET A-001."
3. Revise Sheet A-801 as follows. Replace Operations Building Door 104-02 Door Type 49 with Door Type 3.
4. Replace Sheet I-107 with attached version.

ATTACHMENTS:

A. 00 41 13, Bid Form (8 Pages)
B. Specification Section 10 34 00, Architectural Sunshades and Canopies (4 Pages)
C. Specification Section 40 05 86, Air Valves for Water and Wastewater Service (6 Pages)
D. Sheet I-107 (1 Page)
E. Record Drawing of Existing CSO Check Valve (1 Page)
F. Record Drawings of Force Main Harbor Crossing Chamber (6 Pages)

END OF ADDENDUM NO. 2

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GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY

CWF 2017-01 CAPACITY UPGRADES AT EAST STREET PUMP STATION FOR CSO REDUCTION

BID FORM

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: **Greater New Haven Water Pollution Control Authority**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Form;

B. Required Bid security;

C. Evidence of authority to do business in Connecticut;

D. Contractor's license number as evidence of Bidder's State Contractor's License;

E. Statement of Non-Collusion;

F. Required Bidder Qualification Statement with supporting data;

G. CT DAS Pre-Qualification Certification and Updated Pre-Qualification Bid Statement;

H. Signed DBE Subcontractor Participation on Clean Water Fund Projects Memo (2019-003); and

I. American Iron and Steel Provisions – Bidder Certification

J. Resumes of Project Manager and Superintendent to be used in completion of the Work.

K. List of all subcontractors to be used for the Work, with contract values greater than $100,000.

EJCDC® C-410, Bid Form for Construction Contract.
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ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:

1. Lump Sum Price (Single Lump Sum)

Item No. 1	General Construction	Total Price Dollar Figure	$
		Total Price Written Words	

B. All specified contingency allowance(s) are included in the price(s) set forth below.

Item No. 2.1	Contingency Allowance - Additional Testing, Handling, Packaging, Transportation and Disposal of Hazardous and Special Waste Material	$ 50,000.00
Item No. 2.2	Contingency Allowance - Cathodic Protection System for Force Main Piping	$ 100,000.00
Item No. 2.3	Contingency Allowance - Undocumented Site Conditions	$ 75,000.00
Item No. 2.4	Contingency Allowance - New Electrical Service	$ 10,000.00
Item No. 2.5	Contingency Allowance - Photovoltaic System	$ 450,000.00
Item No. 2	**Total for all Lump Sum Contingency Allowances**	**$ 685,000.00**

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3.02 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount Total Price Dollar Figure Total Price Written Words
3.1	Concrete Surface Repair (Type 1, without rebar repair)	sf	100	$_____/sf	$
3.2	Concrete Surface Repair (Type 1, with rebar repair)	sf	100	$_____/sf	$
3.3	Non-structural crack repair (Type 2)	lf	300	$_____/lf	$
3.4	Exposed Aggregate Repair (Type 3)	sf	75	$_____/sf	$
3.5	Paint Removal from Masonry	sf	100	$_____/sf	$
3.6	Removal and replacement of Masonry	sf	150	$_____/sf	$
3.7	Rock Excavation	cy	15	$_____/cy	$
3.8	Pile Installation (not through existing foundations)	lf	5100	$_____/lf	$
3.9	Pile Installation (through existing foundations)	lf	1600	$_____/lf	$
3.10	Pile Load Testing	ea	1	$_____/ea	$
3.11	Abandoned Micropiles	Lf	400	$_____/lf	$
Total of All Unit Price Bid Items					$

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B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and

2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.03 *Total Base Bid Price (Lump Sum, Contingency Allowances and Unit Prices)*

Total Bid Price (Total of all Lump Sum and Unit Price Bids)	Total Price Dollar Figure	$
	Total Price Written Words	

ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda: **[Add rows as needed. Bidder is to complete table.]**

Addendum Number	Addendum Date

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ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

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11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

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BIDDER hereby submits this Bid as set forth above:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: _____

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SECTION 10 34 00

ARCHITECTURAL SUNSHADES AND CANOPIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope: Work in this section includes furnishing and installing roll-formed aluminum overhead hanger rod style canopies as shown on the Drawings.

1.2 QUALITY ASSURANCE

A. Quality Control shall be in accordance with the requirements of Section 01 45 00, Quality Control.

B. Qualifications:
   1. Designer: Professional Civil or Structural Engineer registered in the same state as the Project.
   2. Erector: Approved by the manufacturer.

C. Warranty:
   1. Warranties shall be in accordance with the requirements of Section 01 78 36, Product Warranty.
   2. Furnish manufacturer’s extended guarantee or warranty, with OWNER named as beneficiary, in writing. Warranty shall provide for correction, or at the option of OWNER, removal and replacement of Work specified in this Section found defective during a minimum period of 5 years after date of Substantial Completion. Finish will not chalk, crack, check, blister, peel, flake, chip or lose adhesion for 5 years.

1.3 SUBMITTALS

A. Submittal shall be in accordance with the requirements of Section 01 33 00, Submittal Procedures.

B. Shop Drawings:
   1. Drawings stamped by manufacturer’s Designer:
      a. Drawings shall be specifically prepared for this Project.
      b. Show structural component locations and positions, dimensions, and details of construction and assembly.
   2. Structural Calculations stamped by manufacturer’s Designer:
      a. Complete analysis and design of structural components and connections in accordance with the design requirements indicated.
   3. Samples: Minimum 2-inch by 3-inch metal components requiring color selection.

C. Product Data:
   1. Manufacturer’s literature and technical data.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Product Storage, Handling and Delivery shall be in accordance with the requirements of Section 01 66 10, Product Storage, Handling and Delivery.

B. Protect components and accessories from corrosion, deformation and other damage during delivery, storage and handling.

C. Store on wood blocking or pallets, flat and off ground, to keep clean and to prevent damage or permanent distortion. Support bundles so there is no danger of tipping, sliding, rolling, shifting, or material damage. Cover with tarpaulins or other suitable weathertight ventilated covering.

PART 2 - PRODUCTS

2.1 PRODUCT AND MANUFACTURER

A. Products manufactured or supplied by the following, and meeting these Specifications, may be used on this Project:
   1. Super Lumideck by Mapes Architectural Canopies.
   2. Extrudeck by MASA Architectural Canopies.
   3. Overhead Support Canopy (Round Rod) by Mitchell Metals.
   4. Or equal.

2.2 SERVICE CONDITIONS AND DESIGN CRITERIA

A. Dead Load:
   1. The weight of all permanent loads and materials of roof construction.

B. Live Load:
   1. 0 psf.

C. Snow Load:
   1. See Section 01 61 00, General Product Requirements for snow load.

D. Wind Load:
   1. See Section 01 61 00, General Product Requirements for wind load.
   2. Importance Factor: 1.15

E. Seismic:
   1. See Section 01 61 00, General Product Requirements for seismic factors.

2.3 COMPONENTS

A. Materials:
   1. Decking at sunshades shall consist of louvered blades (0.110-inch extruded aluminum).
   2. Decking at canopies shall consist of 2-1/2 inches interlocking, role formed 0.032-inch decking.

3. Intermediate framing members shall be extruded aluminum, alloy 6063-T6, in profile and thickness as required by manufacturer.
4. Hanger rods to be powder coated finish to match the canopy.
5. Fascia shall be standard 8-inch extruded, minimum 0.125 aluminum, flat face (Mapes style 'J').

B. Finishes:
1. Finish: Two-Coat Kynar Finish.
2. Color: Selected by OWNER.

2.4 FABRICATION

A. All sunshades and canopies shall be factory preassembled to the greatest extent possible.

B. All connections shall be mechanically assembled utilizing 3/16-inch fasteners with a minimum shear stress of 350 pounds. Pre-welded or factory-welded connections are not acceptable.

C. Concealed drainage at canopies: Water shall drain from covered surfaces into intermediate trough and be directed to downspouts.

PART 3 - EXECUTION

3.1 INSPECTION

A. Confirm that surrounding area is ready for the canopy installation.

B. Installer shall field confirm dimensions and elevations to be as shown on shop drawings provided by the manufacturer and the Drawings.

C. Erection shall be performed by an approved installer and scheduled after all concrete, masonry and roofing in the area is completed.

3.2 INSTALLATION

A. Installation shall be in strict accordance with manufacturer's approved shop drawings and written instructions. Particular attention should be given to protecting the finish during handling and erection.

3.3 REPAIR AND CLEANING

A. Immediately following erection, remove unused material, screws, fasteners, and other debris from completed installation. Use caution in removing metal cuttings from surface of prefinished metal panels.

B. Replace damaged, dented, buckled, or discolored metal panels at no cost to OWNER.

+ + END OF SECTION ++

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SECTION 40 05 86

AIR VALVES FOR WATER AND WASTEWATER SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish, install, and test Air Valves for water and wastewater service complete with appurtenances.
   2. This Section does not include valves used for:
      a. Plumbing.
      b. Heating, ventilating, air conditioning, steam, or condensate systems.
      c. Instrumentation.
      d. Sprinkler systems.
      e. Chemical feed systems
      f. Sewage sludge, process sludge, and grit
   3. This Section does not include:
      a. Valves specified in other Sections
      b. Valves furnished with equipment
      c. Non-metallic valves.

B. Coordination:
   1. Review installation procedures for this and other Specification sections and coordinate Work that must be installed with or before Work under this Section.
   2. If this is a multiple-prime contract project, provide timely advance notification of schedule of work to other contractors who may need to install items at same time or before Work included in this Section.

C. Related Sections:
   1. Section 09 91 00, Painting
   2. Section 40 05 53, Process Valves, Four-inch Diameter and Larger

1.2 REFERENCES

A. Standards referenced in this Section are:
   1. ANSI/AWWA C512, Air Release, Air Vacuum and Combination Air Valves for Waterworks Service
   2. ANSI/AWWA C550, Protective Interior Coatings for Valves and Hydrants.
   3. ANSI/NSF 61 Drinking Water Components – Health Effects

1.3 DEFINITIONS

A. The following definitions apply to this Section.

1. Air Release Valve: A hydromechanical device designed to automatically release to atmosphere small pockets of air as they accumulate in a pipeline when pipeline system is full and operating under pressure.
2. Air/Vacuum Valve: Direct-acting, float-operated, hydromechanical device designed to automatically release or admit large volumes of air during filling or draining of a pipeline or piping system. Valve will open to relieve negative pressures and will not reopen to vent air when system is full and under pressure.
3. Air Valve: Valve of one of the following types: Air Release Valve, Air/Vacuum Valve, or Combination Air Valve.
4. Combination Air Valve: Device having features of an Air Release Valve and Air/Vacuum Valve.
5. Maximum and Minimum Working Pressure: Pressure range at which valve is designed to function.
6. Orifice: Opening in valve mechanism through which air is expelled from or admitted into pipeline or piping system.
7. Valve Design Pressure: Maximum pressure to which a valve may be subjected without exceeding allowable stress of its components.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer shall be able to provide documentation of at least five installations of substantially similar equipment to that specified, in satisfactory operation for at least five years.

B. Component Supply and Compatibility:
   1. Valves of the same type, including specified accessories, shall be products of or furnished by a single air valve manufacturer.

1.5 SUBMITTALS

A. Action Submittals.
   1. Product Data: Submit the following for each type and size of valve specified:
      a. Product data sheet.
      b. Complete catalog information, including dimensions, weight, performance data, Orifice size, specifications, and identification of materials of each part.

B. Informational Submittals:
   1. Certifications:
      a. Submit a certificate signed by manufacturer of each product stating that product conforms to applicable referenced standards and specified requirements.
   2. Test Reports:
      a. Provide results of successful factory tests prior to shipping products to the Site.
   3. Manufacturer's Reports:
      a. Submit written report of results of each visit to Site by a manufacturer's serviceman, including purpose and time of visit, tasks performed, and results obtained.

C. Closeout Submittals.
   1. Operation and Maintenance Data:
      a. Submit complete operation and maintenance manual for all Air Valves in the Contract, including maintenance data and schedules in sufficient detail for disassembly and assembly of valve, and identifying parts that can be replaced.
      b. Furnish operation and maintenance manuals per Section 01 78 23, Operations and Maintenance Data.
   2. Spare Parts:
      a. Provide spare parts and list of recommended spare parts as specified in this Section:

1.6 DELIVERY, STORAGE, AND HANDING

A. Packing, Shipping, Handling, and Unloading:
   1. Prepare valves for shipping per Section 6.2 of ANSI/AWWA C512.
   2. Conform to Section 01 65 00, Product Delivery Requirements.

B. Acceptance at Site:
   1. Inspect all boxes, crates, and packages upon delivery to Site and notify ENGINEER in writing of loss or damage to products. Promptly remedy loss and damage to new condition per manufacturer's instructions.

C. Storage and Protection:
   1. Keep all products off ground using pallets, platforms, or other supports. Protect products from corrosion and deterioration.
   2. Conform to Section 01 66 00, Product Storage and Handling Requirements.

1.7 MAINTENANCE

A. Extra Materials
   1. Provide list of manufacturer's recommended spare parts, based on the quantity of each size and type of valve provided, including current pricing and delivery time. Provide recommendations for the number of spare valves based on the same criteria, including pricing and delivery time.

PART 2 - PRODUCTS

2.1 GENERAL

A. Extent:
   1. Provide valves included in this Section as shown on the Drawings.

B. Requirements:
   1. Valve Design Pressure: Unless otherwise specified, Valve Design Pressure shall be equal to or exceed design pressure of pipe or equipment on which the valve is installed.
   2. Valve Type, Service, Inlet Size, Accessories, and Required Features:

a. Valves shall be vacuum breaker style with attached air release
b. Valve shall be provided with 8” connection.
c. Valves shall be provided with protective screen to mitigate debris entering the vacuum breaking valve

3. Materials: Air Valves shall have cast iron body, with Type 316 stainless steel trim. The float and linkage shall be Type 316 stainless steel. Any other materials not explicitly specified shall be suitable for long-term use in raw wastewater.
4. Ends:
   a. Flanged
   b. Comply with valve connection requirements in Section 4.3 of ANSI/AWWA C512.
5. Operating Pressure Range: Valves shall be suitable for up to 150 psi working pressure.
6. Air Valves in water service shall comply with ANSI/AWWA C512 unless otherwise shown or specified.

C. Markings:
   1. Mark valves per Section 6.1 of ANSI/AWWA C512.

D. Manufacturers and Model Numbers:
   1. Val-matic, Model 1810VBS-48A;
   2. GA Industries Figure 993;
   3. Or equal.

2.2 ACCESSORIES

A. Isolating Valves:
   1. Provide Type 316 stainless steel isolating ball valve between vacuum breaker and air release valves.

2.3 FACTORY PAINTING

A. Interior Surfaces
   1. Extent: Paint ferrous surfaces except stainless steel surfaces.
   2. Paint: Paint shall be as normally provided by Air Valve manufacturer for the specified application, except for potable water service valves which shall be coated with paint complying with ANSI/AWWA C550 and ANSI/NSF-61.

B. Exterior Surfaces
   1. Exterior surfaces of cast-iron, ductile iron, and steel other than stainless steel, except machined surfaces of valves and appurtenances, shall be finish painted.
   2. Surface preparation, painting, and field touch-up painting shall be per Section 09 91 00, Painting.
   3. Furnish valve with only a prime coat if so indicated.

2.4 SOURCE QUALITY CONTROL

A. Test and inspect Air Valves per Section 5 of ANSI/AWWA C512. Do not ship valves that are not successfully tested.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions under which Work is to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected.

B. Examine valves and remove packing and foreign materials from interior of valve. Report defects to ENGINEER

3.2 INSTALLATION

A. Install valves and appurtenances as shown on the Drawings and per Air Valve manufacturer's recommendations, approved Shop Drawings, and applicable codes and standards.

B. Install valves plumb and vertical.

C. Install with an isolating valve. Remove isolating valve's operating handle or lever and deliver to OWNER.

D. Adjust throttling devices, if provided, for smooth, non-slam and waterhammer-free operation.

+ + END OF SECTION + +

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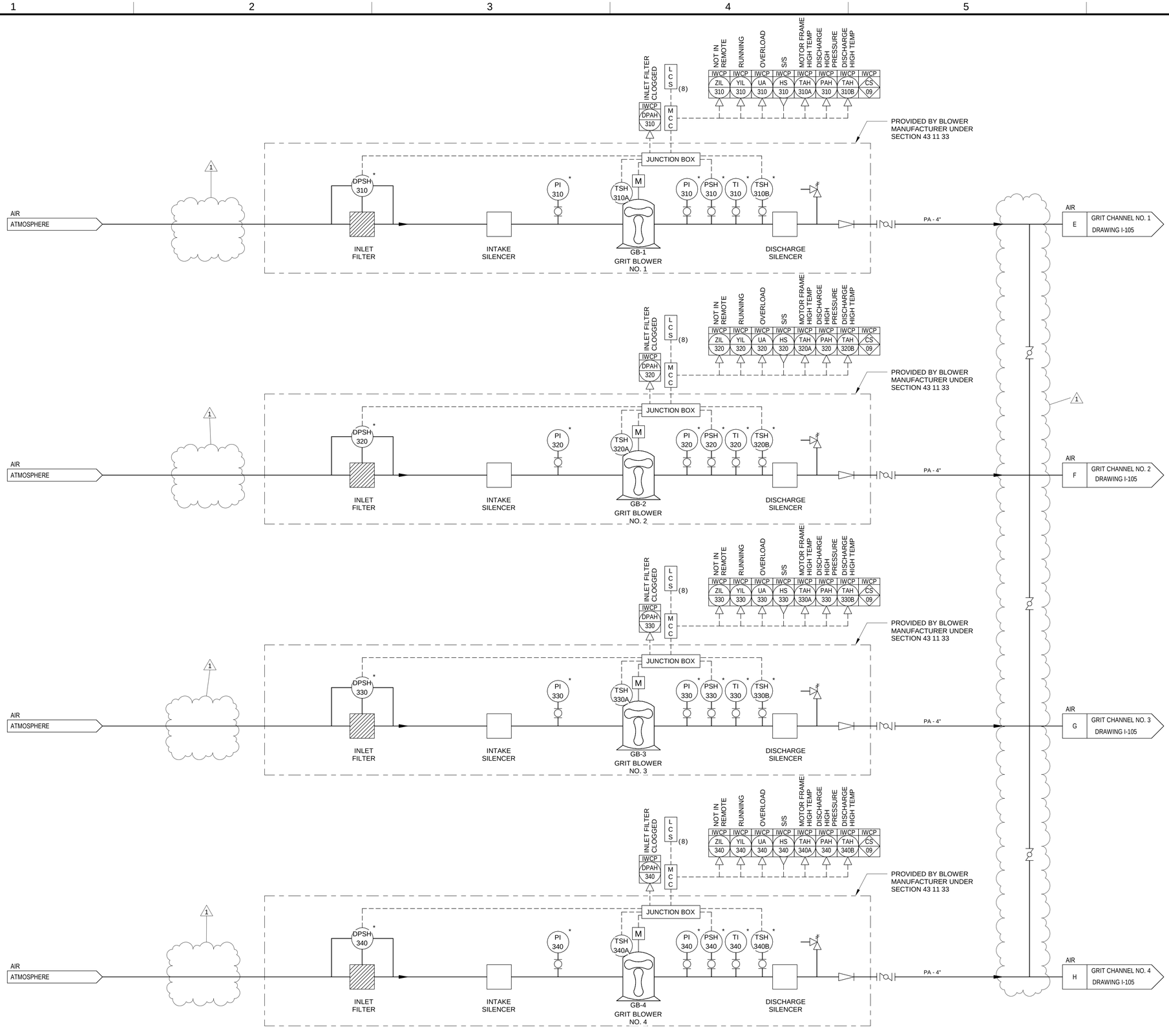


ARCADIS

ARCADIS U.S., INC.
213 COURT ST., SUITE 700
MIDDLETOWN, CT 06457

CONSULTANTS:

SEALS:

GREATER NEW HAVEN WPCA

GNHWPCA
Protecting the Environment

CAPACITY UPGRADES AT EAST STREET PUMP STATION FOR CSO REDUCTION

REVISIONS

NO.	DATE	ISSUED FOR	BY
1	11/2024	ADDENDUM 2	

COPYRIGHT: ARCADIS U.S., INC. 2022

PROJECT STATUS: BID SET

ARCADIS PROJECT NO.: 30003039

DATE: AUGUST 2024

DESIGNED BY: A.SELVARAJ

DRAWN BY: M. SAQUIB

CHECKED BY: E. KOWALSKI

SHEET TITLE:

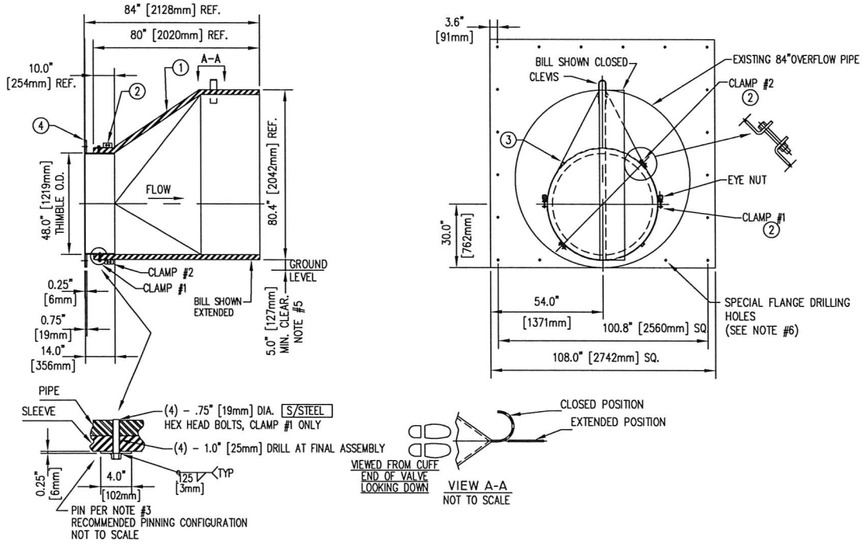
INSTRUMENTATION

GRIT BLOWERS P&ID

SCALE: 12" = 1'-0"

BAR IS ONE INCH ON UNREDUCED DRAWING

DRAWING NO.: I-107

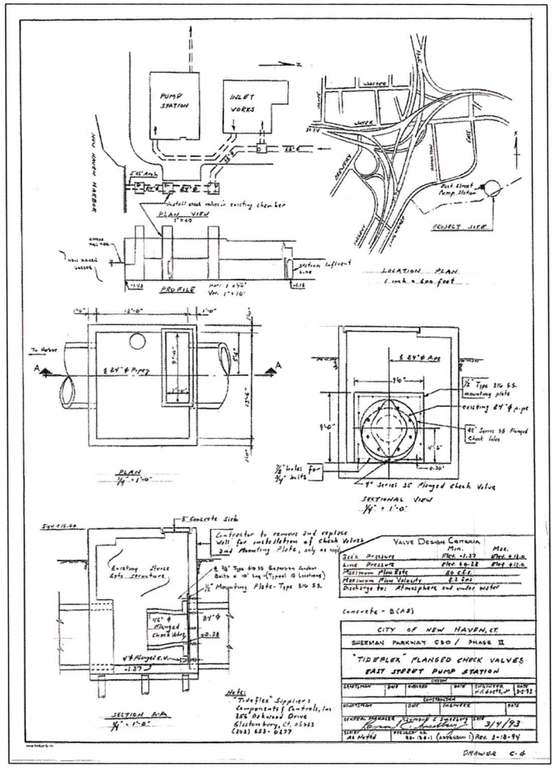


ITEM	QTY.	DESCRIPTION
1	1	CHECK VALVE SLEEVE
2	2	MOUNTING CLAMP
3	1	THIMBLE PLATE
4	1	GASKET

NOTICE TO CONTRACTOR:

1. Maximum back pressure = 13.37 feet
   Line Pressure = 13.37 feet
2. Tideflex is to be mounted with the outlet in vertical position.
3. As recommended by manufacturer, bolt or pin Tideflex to pipe as shown, 4 places 90° apart.
4. Tideflex to fit on a 48" O.D. thimble plate.
5. Because of sand, rock and debris accumulation by backflow of water the bottom clearance recommended by the manufacturer should be provided (5.0").
6. Thimble plate dimensions are 108" x 108". Contractor shall determine the adequate plate thickness, number of holes, diameter of the holes and spacing. Contractor may consider using the studs that support the plate being removed if they are found to be adequate for the proposed application. The plate configuration shall be provided on a shop drawing approved by the manufacturer's engineers.

48" TF-1 TIDEFLEX W/ THIMBLE PLATE



1993 TIDEFLEX FLANGED CHECK VALVE INSTALLATION
NOT TO SCALE – FOR REFERENCE ONLY

STANDARD SPECIFICATION
SERIES TF-1 SLIP-ON FLAT BOTTOM CHECK VALVES

PART 1 GENERAL
1.01 SUBMITTALS
A. Submit product literature that includes information on the performance and operation of the valve, materials of construction, dimensions and weights, elastomer characteristics, flow data, headloss data, and pressure ratings.
B. Provide shop drawings that clearly identify the valve dimensions.
1.02 QUALITY ASSURANCE
A. Supplier shall have at least fifteen (15) years experience in the manufacture of "duckbill" style elastomeric valves, and shall provide references and a list of installations upon request.
PART 2 PRODUCTS
2.01 "DUCKBILL" ELASTOMERIC CHECK VALVES
A. Check Valves are to be all rubber of the flow operated check type with a slip-on connection. The Check Valve is designed to slip over the specified thimble plate and attached by means of vendor furnished stainless steel clamps. The port area shall contour down to a duckbill, which shall allow passage of flow in one direction while preventing reverse flow. The valve shall be one piece rubber construction with nylon reinforcement. The duckbill shall be offset so that the bottom line of the valve is flat, keeping the invert of the pipe parallel with the invert of the valve. The top of the valve shall rise to form the duckbill shape and formed into a curve of 180°.
B. Manufacturer must have available flow test data from an accredited hydraulics laboratory to confirm pressure drop data. Company name, plant location, valve size and serial number shall be bonded to the check valve. Valves shall be manufactured in the USA.
2.02 FUNCTION
A. When line pressure inside the valve exceeds the backpressure outside the valve by a certain amount, the line pressure forces the bills of the valve open, allowing flow to pass. When backpressure exceeds the line pressure by at the same amount, the bills of the valve are forced closed. The flat bottom allows the valve to be installed where minimal bottom clearance exists.
2.03 MANUFACTURER
A. All valves shall be of the Series TF-1 as manufactured by Tideflex Technologies Inc. of Pittsburgh, PA 15205 or approved equal.
PART 3 EXECUTION
3.01 INSTALLATION
A. Valve shall be installed in accordance with manufacturer's written Installation and Operation Manual and approved submittals.
3.02 MANUFACTURER'S CUSTOMER SERVICE
A. Manufacturer's authorized representative shall be available for customer service during installation and start-up, and to train personnel in the operation, maintenance and troubleshooting of the valve.
B. Manufacturer shall also make customer service available directly from the factory in addition to authorized representatives for assistance during installation and start-up, and to train personnel in the operation, maintenance and troubleshooting of the valve.

NOTICE TO CONTRACTOR:

1. All construction shall be in accordance with the GNHWPCA Standard Specifications.
2. The proposed project will be paid as a lump sum price; price shall include all materials, tools, equipment and labor incidental thereto to complete the project.
3. The contractor shall verify all existing invert elevations before the beginning of construction activities.
4. The Contractor shall remove and dispose of the existing Tideflex flanged check valves (42" & 4"), and mounting plate (108" x 108").
5. Replace with new 48" TF-1 Tideflex check valve with 108" x 108" thimble plate.
6. The existing chamber invert elevation is −1.37'. The proposed 48" TF-1 Tideflex check valve invert elevation shall be not higher than elevation −0.95'.
7. Contractor shall remove and dispose of all sand and debris accumulated on the existing overflow pipe between chamber NEA03M0082 and chamber NEA03M0083.
8. If required, contractor shall sawcut existing concrete chamber cover (NEA03M0083) even with interior walls and remove and discard concrete.
9. Contractor shall design and install a new precast concrete chamber cover to replace the cover removed. New top elevation of precast concrete chamber shall be at least 2 feet above existing ground elevation on the north end of the chamber. New precast cover shall include a standard GNHWPCA manhole frame and cover set on top for maintenance personnel access to the chamber. Manhole access location shall match the existing manhole location. Manhole frame shall be secured in place to prevent it from sliding. The new precast concrete chamber cover will not be subject to traffic loads and it should be built and locked in place to prevent the cover from sliding. The cover may be composed of two separate precast sections to allow easy removal for future needs/projects. Contractor shall submit shop drawings to the Engineer for final approval by the Authority.
10. The site shall be cleaned on a continuous basis during performance of the work and shall be neatly cleaned up upon completion according to the Engineer's directions, so that the project site shall be left in a neat and orderly condition. Any salvaged material shall become the property of the contractor and removed from the site.

REV. NO.	DATE	DRWN	CHKD	REMARKS

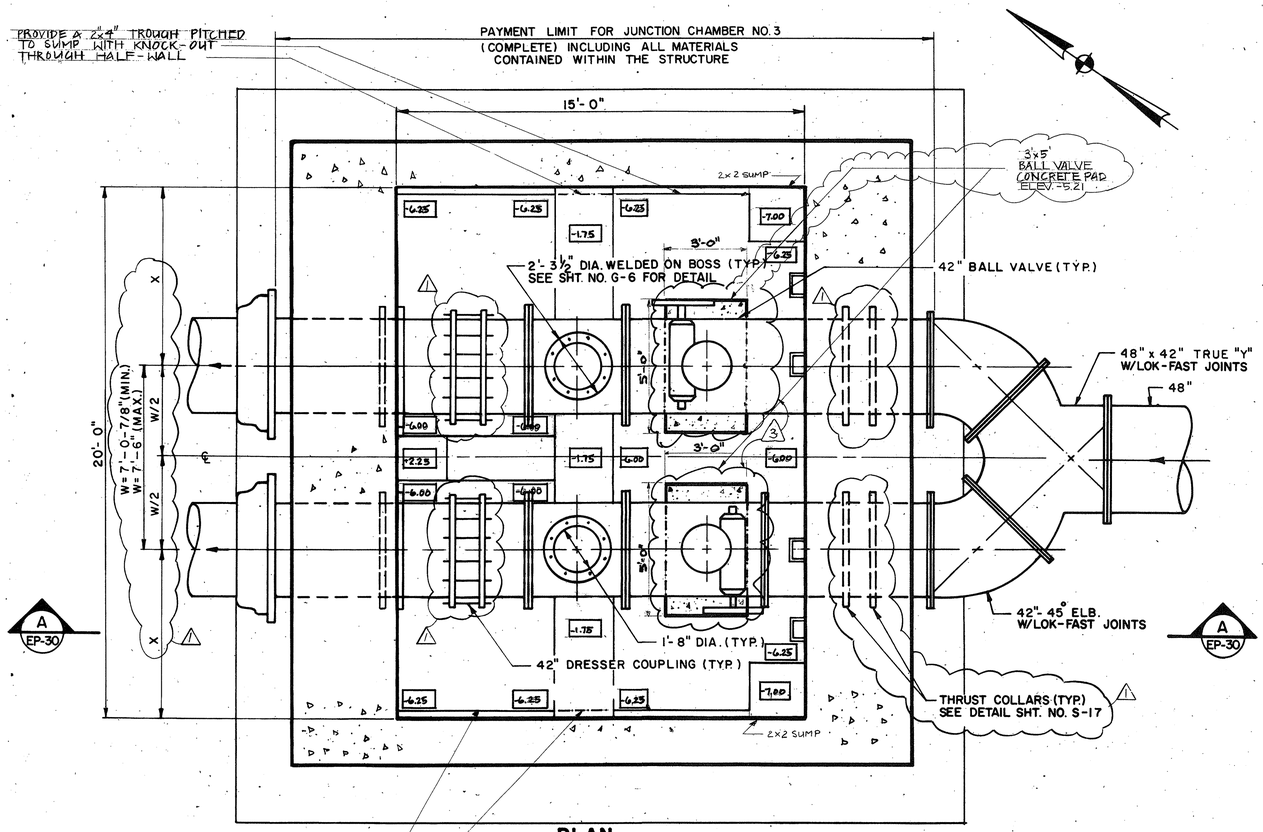
DESIGNED BY: RC
DRAWN BY: RC
SHEET CHK'D BY: LDN
CROSS CHK'D BY: TVS
APPROVED BY: TVS
DATE: 02/25/2013

GNHWPCA Protecting the Environment
Greater New Haven Water Pollution Control Authority
260 East Street
New Haven, CT 06511
(203) 466-5280 p (203) 772-1564 f
www.gnhwpca.com

GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
TRUMBULL STREET AREA SEWER SEPARATION PROJECT
PHASE 1A
NEW HAVEN, CT

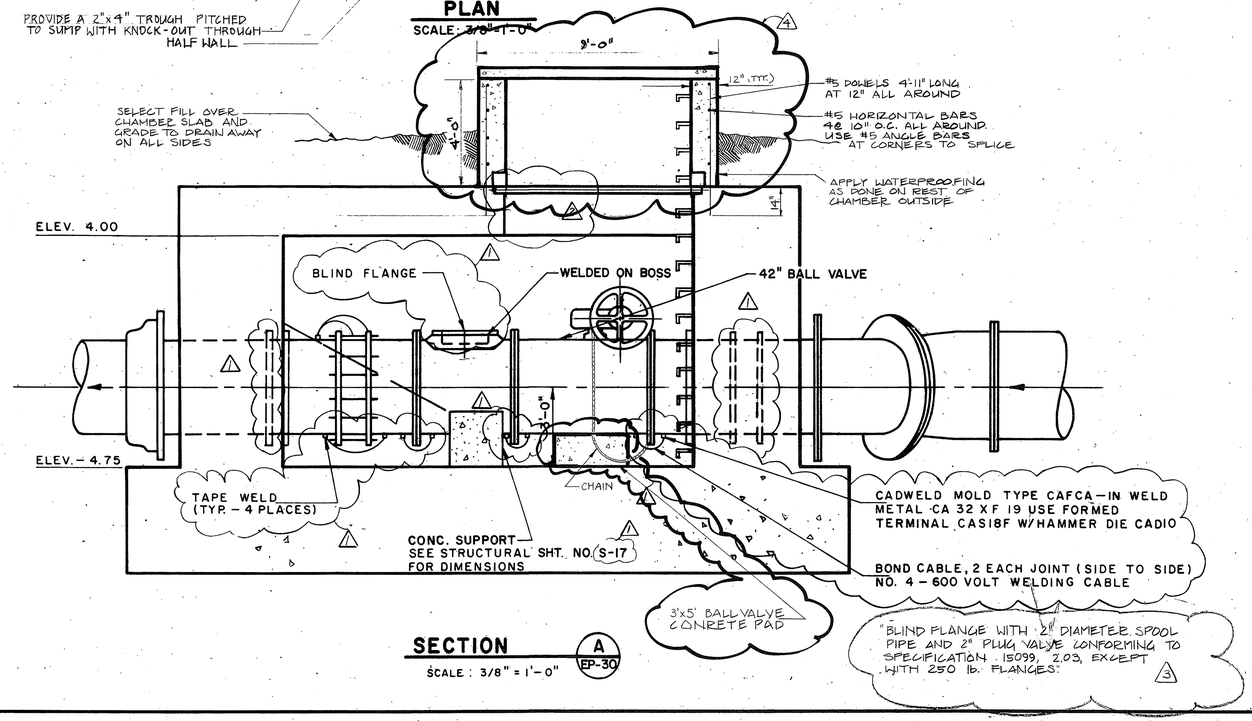
CHANGE ORDER NO. XXX
OF-025 TIDEFLEX CHECK VALVE REPLACEMENT
SITE PLAN

PROJECT NO. CWF 2009-03
FILE NAME:
SHEET NO. 1 OF 1
SCALE: N/A



PLAN

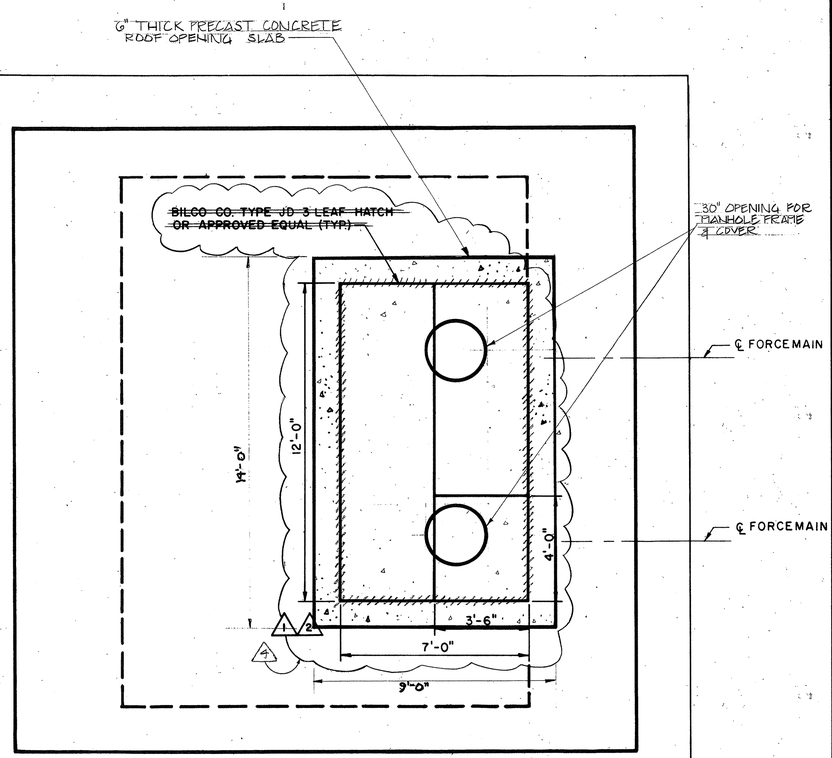
SCALE: 3/8" = 1'-0"



SECTION

A EP-30

SCALE: 3/8" = 1'-0"



ROOF PLAN

SCALE: 3/8" = 1'-0"

NOTE:
CONTRACTOR SHALL NOT MAKE FINAL CONNECTIONS ON RIVER SIDE OF JUNCTION CHAMBERS UNTIL A MINIMUM OF 6 MONTHS HAS ELAPSED AFTER THE RIVER CROSSING HAS BEEN COMPLETELY INSTALLED.

" 5" RIGID STEEL CONDUIT TO BE PLACED FROM SIX INCHES INSIDE THE CHAMBER TO FIVE FEET OUTSIDE THE CHAMBER. FOR CONDUIT REQUIREMENTS, SEE SPECIFICATION 16102. FOR WALL SEAL DETAILS, SEE SHEET E-19. REFER TO DRAWING E-20 FOR MANHOLE TERMINAL BOX DETAIL." 3

STATE OF CONNECTICUT — ALAN P. ABRAHAMSON — No. 11875 — REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	MADE BY	CHECKED BY	DESCRIPTION
4	5-21-84	S.A.B.	H.M.P.	REVISION NO. 3
3	9-18-83	R.D.S.		ADDENDUM NO. 4
2	4/8/83	R.M.B.	A.P.A.	ADDENDUM NO. 4
1	3/30/83	R.A.W.	A.P.A.	ADDENDUM NO. 2

DESIGNED BY: RMB
DRAWN BY: F.J.G.
CHECKED BY: R.A.W.
SCALE 3/8" = 1'-0"
CONTRACT NO. 1
CEM NO. 3940
APPROVED FOR CEM
Allen P. Abrahamson
REG. PROF. ENG.
FEB. 1, 1983
DATE

STATE OF CONNECTICUT — ALAN P. ABRAHAMSON — No. 10880 — REGISTERED PROFESSIONAL ENGINEER

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD - EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

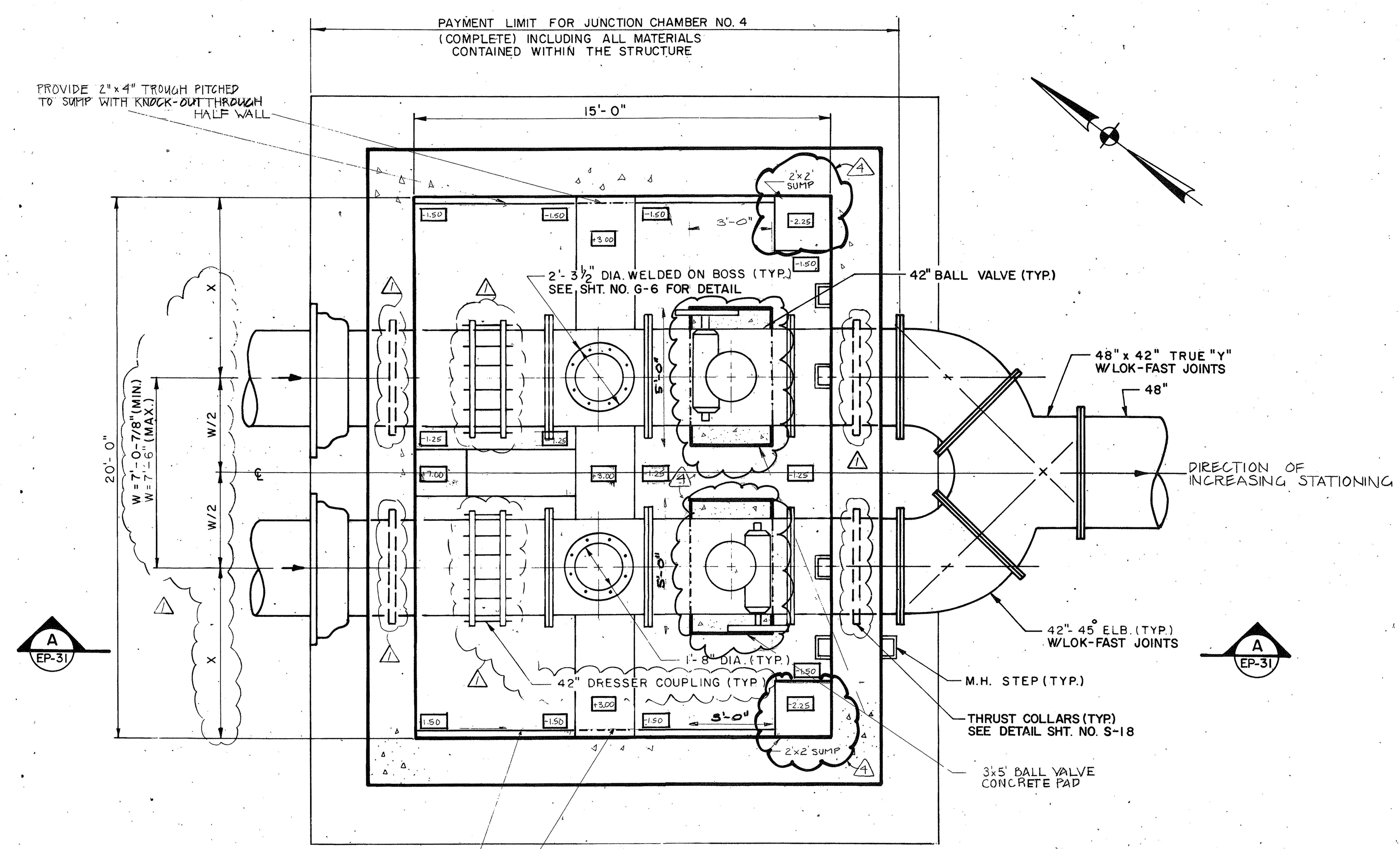
FORCE MAIN

JUNCTION CHAMBER NO. 3
EQUIPMENT AND PIPING
PLANS AND SECTION

MAGUIRE
Engineers · Planners
CE MAGUIRE, INC. New Britain, Connecticut

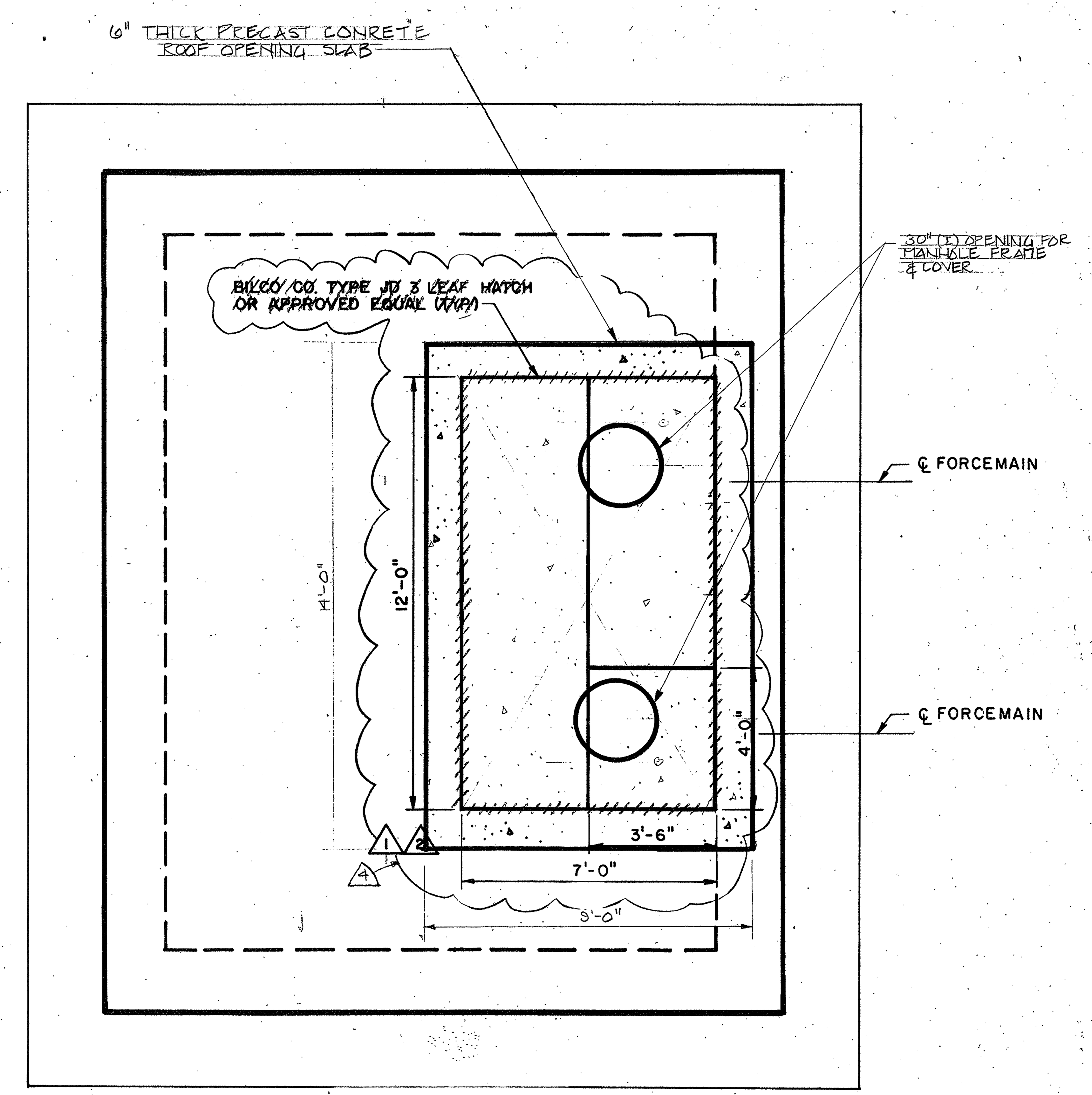
EP 30

JOSEPH MERRITT & CO.



PLAN

SCALE: 3/8" = 1'-0"

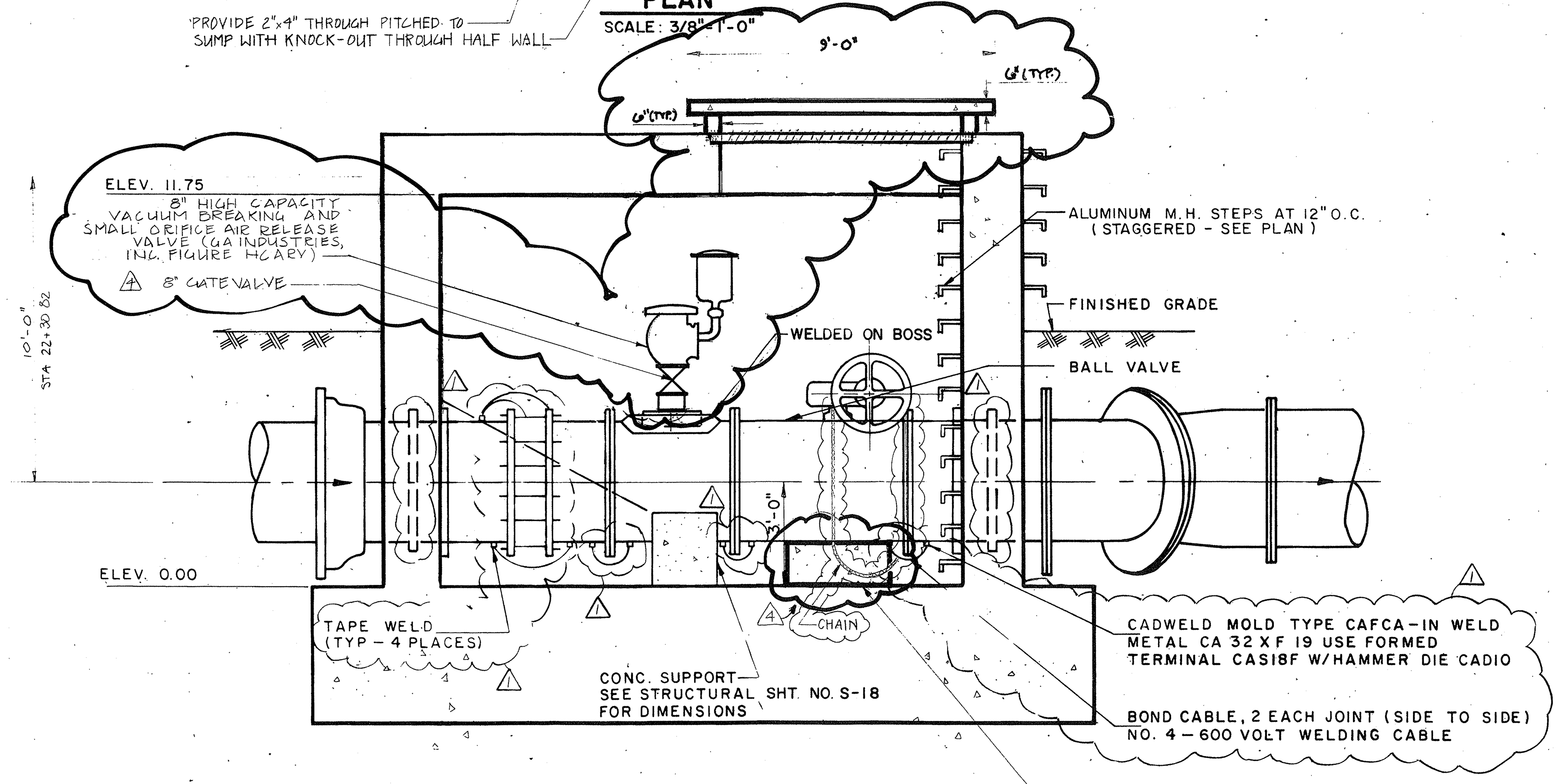


ROOF PLAN

SCALE: 3/8" = 1'-0"

NOTE:
CONTRACTOR SHALL NOT MAKE FINAL CONNECTIONS ON RIVER SIDE OF JUNCTION CHAMBERS UNTIL A MINIMUM OF 6 MONTHS HAS ELAPSED AFTER THE RIVER CROSSING HAS BEEN COMPLETELY INSTALLED.

3 — 3" RIGID STEEL CONDUIT TO BE PLACED FROM SIX INCHES INSIDE THE CHAMBER TO FIVE FEET OUTSIDE THE CHAMBER. FOR CONDUIT REQUIREMENTS, SEE SPECIFICATION 16102. FOR WALL SEAL DETAILS, SEE SHEET E-14. REFER TO DRAWING E-20 FOR MANHOLE TERMINAL BOX DETAILS.



SECTION A EP-31

SCALE: 3/8" = 1'-0"

REV NO	DATE	MADE BY	CHECKED BY	DESCRIPTION
4	3·21·84	S.A.B	H.M.P.	REVISION NO. 3
3	4·18·84	R.D.S.		ADDENDUM NO. 4
2	4/8/83	R.M.B.	A.P.A.	ADDENDUM NO. 4
1	3/30/83	R.A.W.	A.P.A.	ADDENDUM NO. 2

DESIGNED BY: RMB
DRAWN BY: F.G.J.
CHECKED BY: R.A.W.
SCALE: 3/8" = 1'-0"
CONTRACT NO. 1
CEM NO. 3940
APPROVED FOR CEM
Alan P. Askanian — REG PROF ENG
FEB. 1, 1983 — DATE

STATE OF CONNECTICUT — ALAN P. ASKANIAN — No. 10920 — REGISTERED PROFESSIONAL ENGINEER

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD-EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

FORCE MAIN

JUNCTION CHAMBER NO.4
EQUIPMENT AND PIPING
PLANS AND SECTION

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EP 31

N 170,600 E 557,200 N 170,600 E 557,600 N 169,800 E 556,800

NOTE: I-95 BRIDGE PIER INFORMATION BASED UPON PLANS ENTITLED "CONNECTICUT STATE HIGHWAY DEPARTMENT, TOWN OF NEW HAVEN. GREENWICH-KILLINGLY EXPWY. OVER QUINNIPIAC RIVER" PROJECT NO. 317-02 AND NO. 317-04.

NOTE: ALL EXCESS MATERIAL EXCAVATED FROM SUBAQUEOUS TRENCH SHALL BE DISPOSED OF AT THE CENTRAL LONG ISLAND SOUND DISPOSAL AREA. THIS SITE IS 2 NAUTICAL MILES LONG BY 1 NAUTICAL MILE WIDE WITH THE MAJOR AXIS RUNNING TRUE EAST-WEST AND CENTER AT 41°-08.95'N LATITUDE AND 72°-52.85' W LONGITUDE. FROM THE CENTER, SOUTHWEST LEDGE LIGHT BEARS TRUE 345° AT 10,750 YARDS AND TOWNSHEND LEDGE LIGHTED GONG BUOY NUMBER "10-A" BEARS TRUE 13° AT 7,400 YARDS. THIS SITE IS APPROXIMATELY 5.6 NAUTICAL MILES OFF SOUTH END POINT, EAST HAVEN.
PAYMENT FOR THIS DISPOSAL SHALL BE INCLUDED IN THE BID ITEMS "FORCE MAIN-TRENCH EXCAVATION - EARTH AND REFILL (SUBAQUEOUS)" AND "FORCE MAIN - TRENCH EXCAVATION - ROCK AND EARTH BACKFILL (SUBAQUEOUS)".

NOTES:
1. Contractor shall not work within limits of water during the oyster spawning months of June 15 through Sept. 30.
2. Contractor responsible for total adherance to all conditions as set forth in U.S. Army Corps Costal Area Management, D.E.P., D.O.T. permits and any other "Agencies" mandating conditions or requiring permits.
3. Contractor responsible for complete protection of U.I. Co. towers, bridge piers fenders and shall bear full responsibility for any damage done to such.
4. Channel bottoms shall be restored to original depths and conditions.
5. All dredged material will be disposed of at off-shore site, as set forth in the U.S. Army Corps. of Engineers permit unless permitted to be re-used in the work.

Pierhead & Bulkhead Line
Dirt drive
N/F Suzio
CONTRACT LIMIT LINE
STATION EQUATION STA. 45+25 BACK = STA. 45+69 AHEAD
48"x42"x42" RESTRAINED MECHANICAL JOINTS TRUE WYE
42"-45° RESTRAINED MECHANICAL JOINTS BEND
8" Storm
Gate
Limits of Coffer Dam
RELAY 18" PIPE MAINTAIN CULVERT END
U.I. Tower Base (GH6)
Tidal Flats
Mill River Channel Line
MILL RIVER
QUINNIPIAC RIVER
Quinnipiac River channel line
State of Connecticut Oyster Beds
U.I. Co. Oyster Beds
CONTRACT LIMIT LINE
SEE SHEET NO. EP-35
MATCH LINE
SEE SHEET NO. EP-37
BL-67
BH-96
BH-98
BH-100
BH-102
BH-104
BW-11
BW-12
BW-13
℄ 2-42" D.I.B.J. FORCE MAIN
50'
Fender
CONNECTICUT TURNPIKE
I-95
JUNCTION CHAMBER NO. 3
SEE SHEET NO. EP-30 AND S-17
Pier 10 on Piles
Pier 11 on Piles
Pier 12 on Piles
Pier 13 on Piles
CONTRACT LIMIT LINE
CONTRACT LIMIT LINE (UNDER I-95 ONLY)
N/F Blakeslee, Arpaia, Chapman

PLAN

PROFILE

STATION EQUATION STA. 45+25 BACK = STA. 45+69 AHEAD
JUNCTION CHAMBER NO. 3
SEE SHEET NO. EP-35
MATCH LINE
48" D.I.B.J. FORCE MAIN
Approximate Existing Ground Along Centerline
Tidal Flats
Westerly Limit of Mill River Channel - Quinnipiac River Channel
SEE SHEET NO. EP-37
2-42" D.I.B.J. FORCE MAIN
45°RESTRAINED MECHANICAL JOINTS BEND
48"X42"X42" RESTRAINED MECHANICAL JOINTS TRUE WYE
AS BUILT INVERT
EXCAVATION LIMIT
CRUSHED STONE BEDDING
LIMITS OF BEDDING
APPROXIMATE LIMITS PILES - FOR DETAILS, SEE STRUCTURAL (S) SHEETS
PUSH-ON JOINT PIPE

NOTE:
Subaqueous pipe shall be ductile iron Class 64, double concrete lining, "FLEX-LOK" bottess ball joint pipe as manufactured by American Cast Iron Pipe Company or equal. No substitution of joint or material type will be permitted.

AS BUILT REVISIONS

RECORD DRAWINGS

1	3/30/83	RAW	APA	ADDENDUM NO. 2
REVISION		MADE BY	CHECKED BY	DESCRIPTION

DESIGNED BY: RMB
DRAWN BY: EW - W.W.D.
CHECKED BY: apa
CONTRACT NO. 1
SCALE HOR. 1"= 40' VER 1"= 4'
C.E.M NO. 3940
DATE

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD - EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

FORCE MAIN

EAST STREET P.S. TO EAST SHORE S.T.P.
STA. 45+00 TO STA. 56+00

MAGUIRE Engineers • Planners
CE MAGUIRE, INC. New Britain, Connecticut

EP 36

2	4-18-83	R.D.S.		ADDENDUM NO. 4
1	3/30/83	RAW	APA	ADDENDUM NO. 2
REVISION		MADE BY	CHECKED BY	DESCRIPTION

DESIGNED BY: RAB
DRAWN BY: EW - M.H.D.
CHECKED BY: APA
CONTRACT NO. 1
SCALE HOR 1" = 40' VER 1" = 4'
CEM NO. 3940

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD - EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

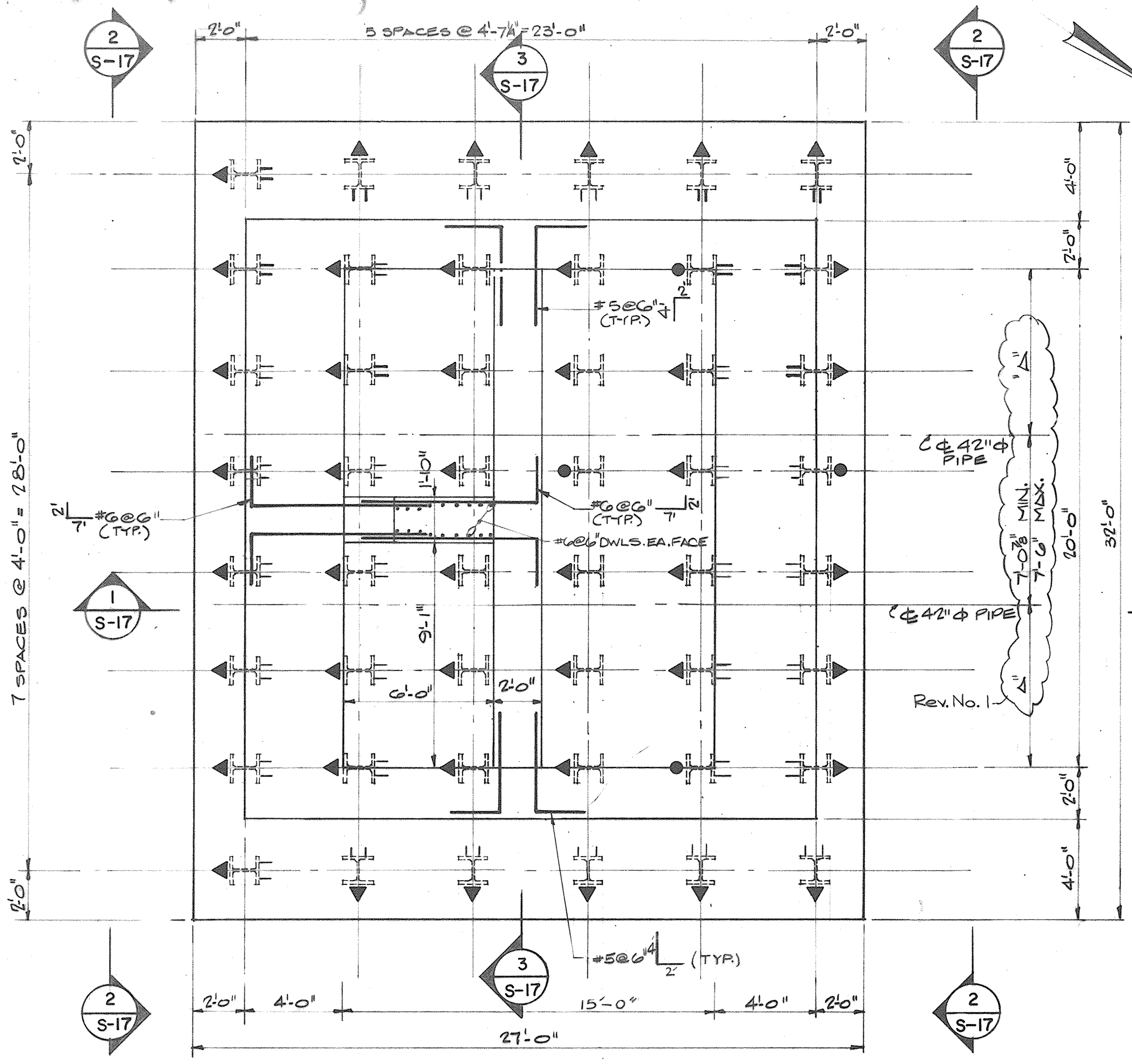
FORCE MAIN

EAST STREET P.S. TO EAST SHORE S.T.P.
STA. 56 + 00 TO STA. 67 + 00

FEB. 1, 1983
DATE

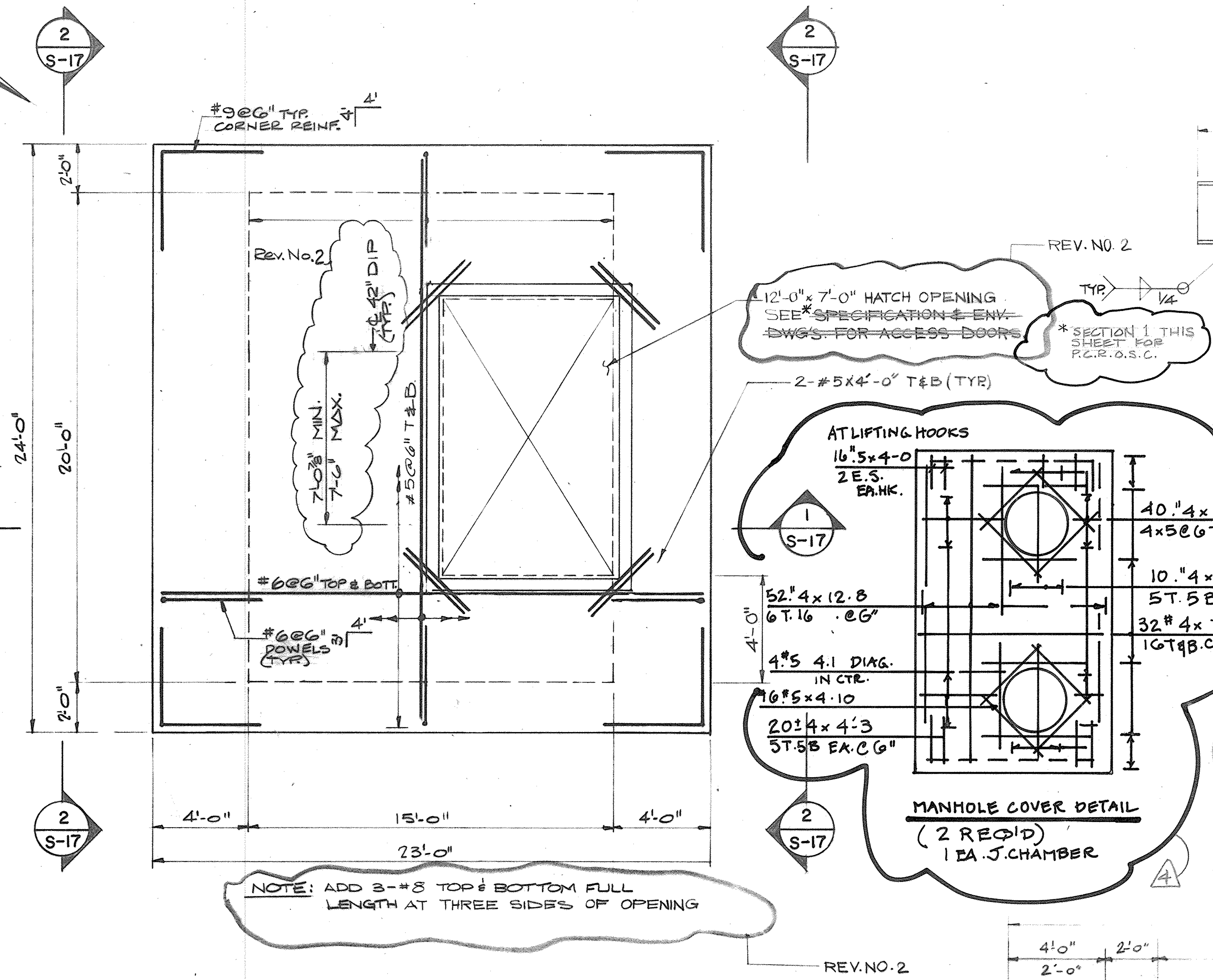
MAGUIRE Engineers • Planners
CE MAGUIRE, INC. New Britain, Connecticut

EP 37



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

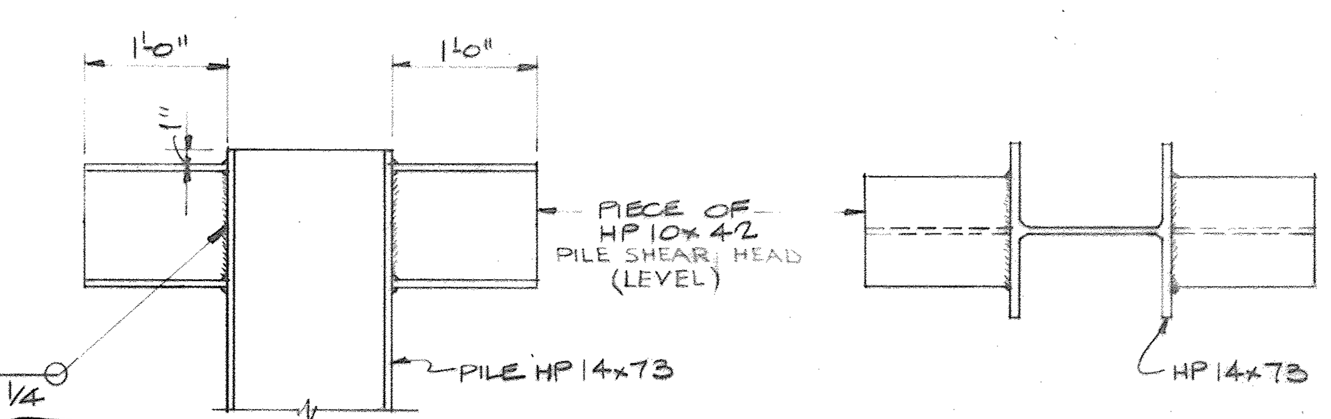


ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

NOTE: ADD 3-#8 TOP & BOTTOM FULL LENGTH AT THREE SIDES OF OPENING

MANHOLE COVER DETAIL
(2 REQ'D)
1 EA. J. CHAMBER



ELEVATION

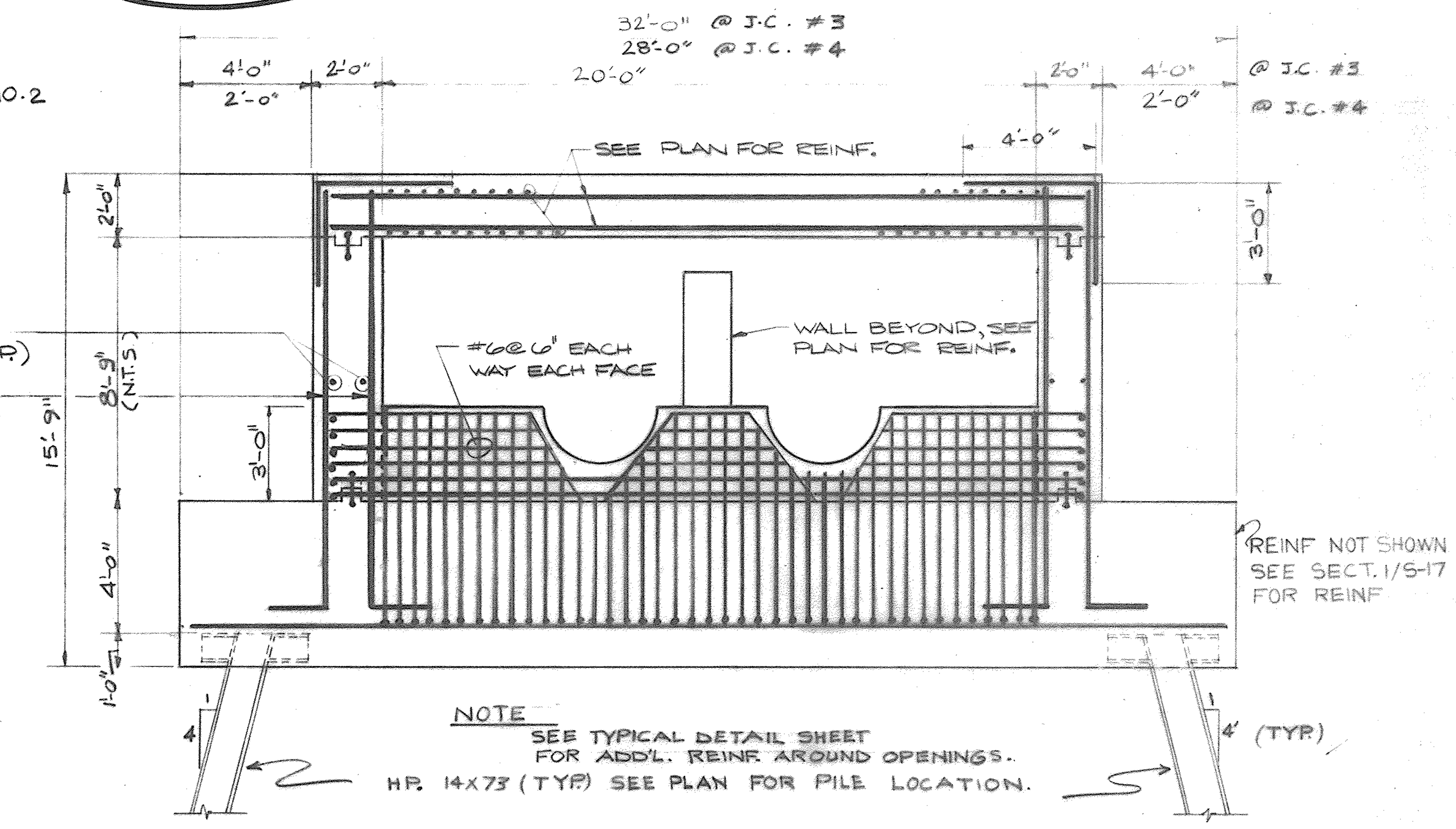
PLAN

PILE SHEAR HEAD DETAILS

NOTES

1. DRIVE 4 VERTICAL TEST PILES AND PERFORM MINIMUM OF 2 PILE LOAD TEST.
2. PILES TO BE DRIVEN TO 130 TON CAPACITY.
3. ALL PILES TO BE HP 14x73.
4. DENOTES VERTICAL TEST PILES
5. DENOTES PILES BATTERED 1:4 IN THE DIRECTION OF THE ARROW.
6. DENOTES PILE SHEAR HEAD. COST OF PILE SHEAR HEAD SHALL BE INCLUDED IN THE CONTRACT ITEM FOR "STEEL H PILES".

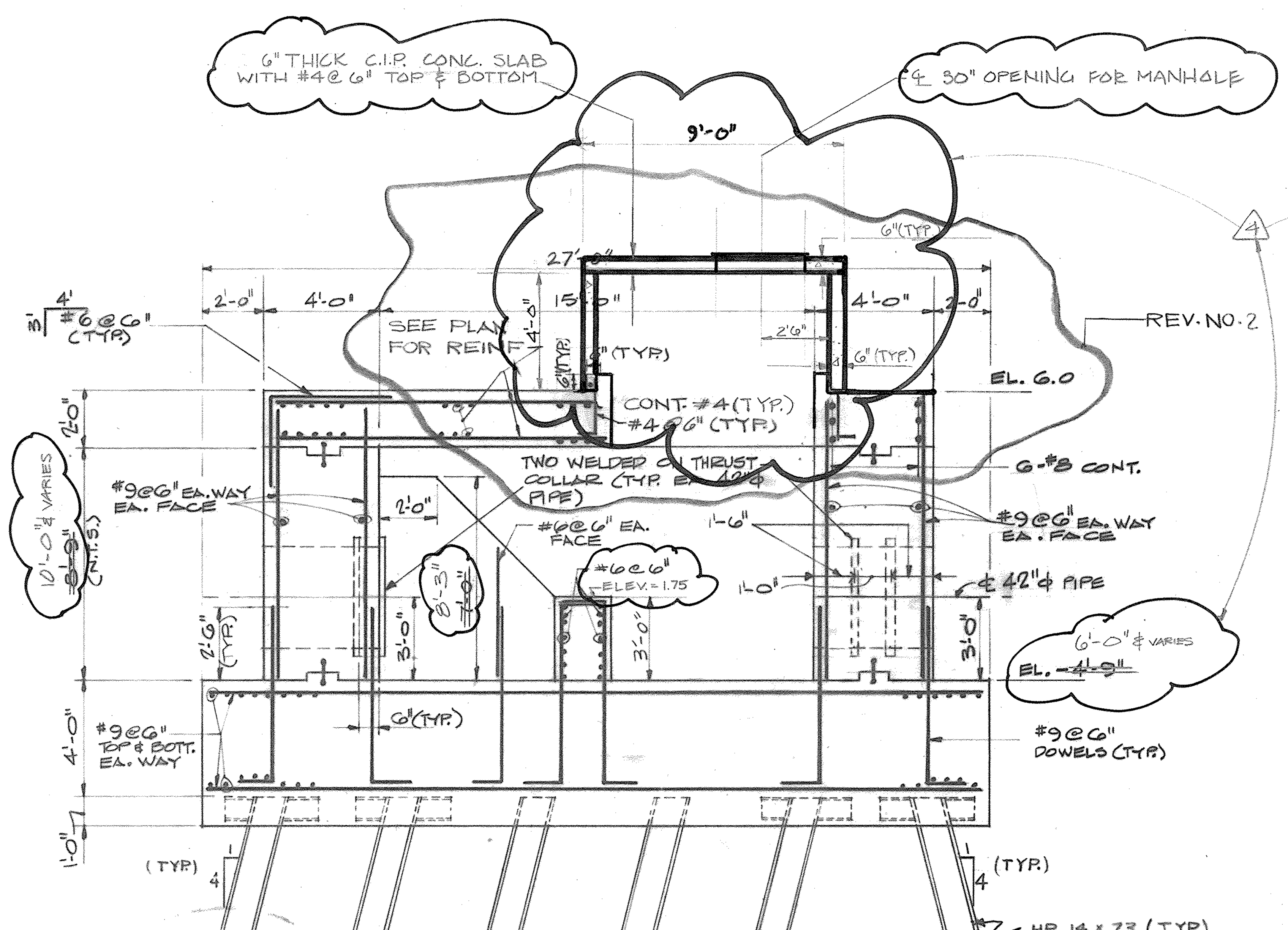
5" RIGID STEEL CONDUIT TO BE PLACED FROM SIX INCHES INSIDE THE CHAMBER TO FIVE FEET OUTSIDE THE CHAMBER. FOR CONDUIT REQUIREMENTS, SEE SPECIFICATION 16102. FOR WALL SEAL DETAILS, SEE SHEET E-14. REFER TO DRAWING E-20 FOR MANHOLE TERMINAL BOX DETAILS. (3)



NOTE
SEE TYPICAL DETAIL SHEET FOR ADD'L. REINF. AROUND OPENINGS.
HP 14x73 (TYP.) SEE PLAN FOR PILE LOCATION.

SECTION (3/S-17)

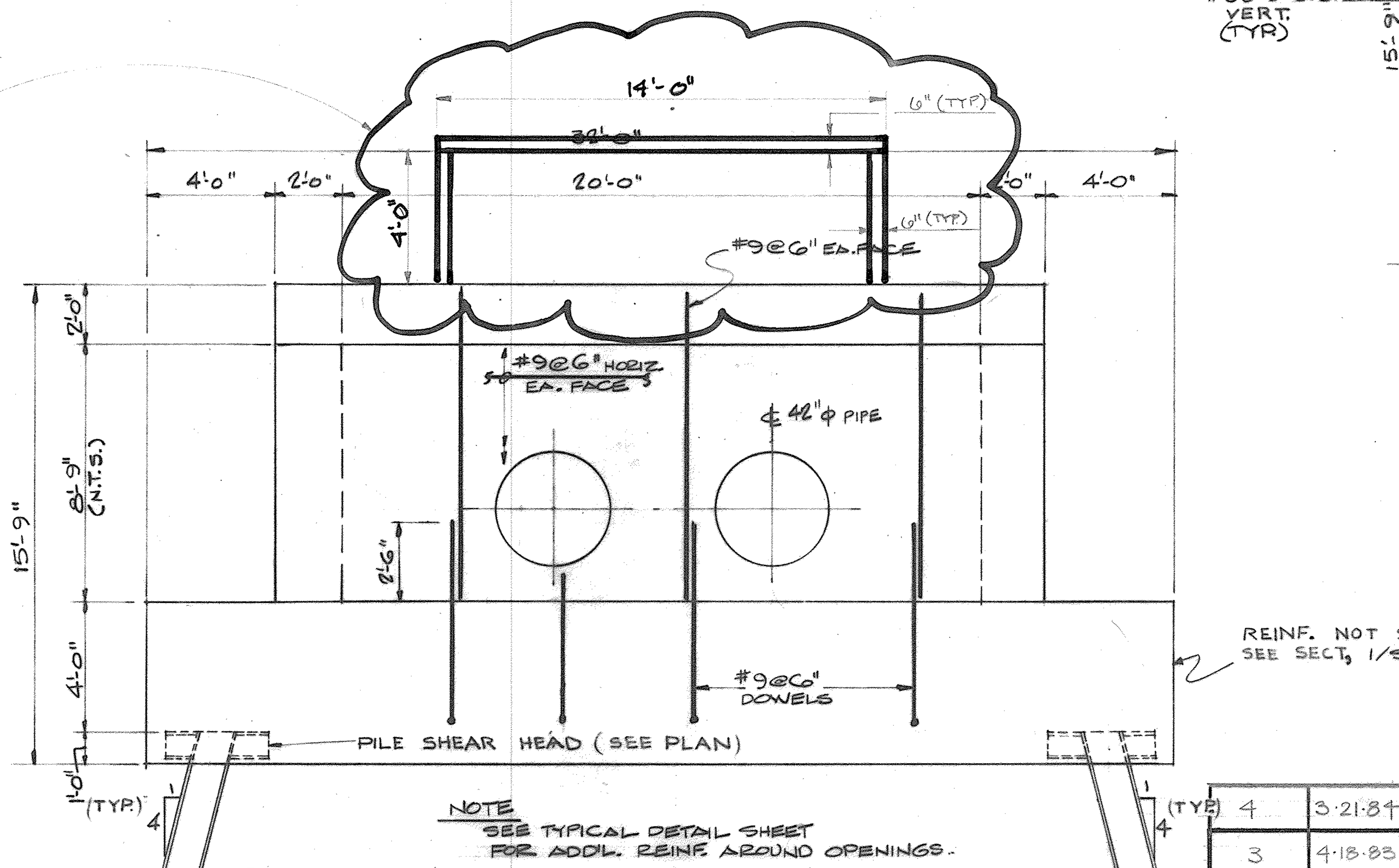
SCALE: 1/4" = 1'-0"



HP 14 x 73 (TYP.)

SECTION (1/S-17)

SCALE: 1/4" = 1'-0"



NOTE
SEE TYPICAL DETAIL SHEET FOR ADD'L. REINF. AROUND OPENINGS.
HP 14 x 73 (TYP.) SEE PLAN FOR PILE LOCATION.

REINF. NOT SHOWN SEE SECT. 1/S-17 FOR REINF.

ELEVATION (2/S-17)

SCALE: 1/4" = 1'-0"

* CHAIN OPERATOR FOR 42" BALL VALVES

* G.C. TO PROVIDE 6" THICK REMOVABLE C.I.P. CONCRETE SLAB WITH FOUR LIFTING HOOKS AND TWO STANDARD MANHOLE FRAMES & COVERS.

PROVIDE 1" CONCRETE COVER FOR REINF. TOP & BOTTOM OF SLAB FOR ADD'L REINF. AROUND MANHOLE OPENING SEE CONTR. DRAWING S-2.

G.C. TO PROVIDE KENT SEAL OR EQUAL WHERE SLAB ABUTS CHAMBER TO PROVIDE WATERTIGHT JOINT.

** 2'-0" x 2'-0" x 0'-9" DEEP SUMP REINFORCED WITH #8 @ 6" E.W. SEE E.P. DRAWINGS FOR LOCATION.

(3) FOR BALL VALVE CONCRETE PAD LOCATION, SIZE AND HEIGHT, SEE EP-30A. SEE DETAIL ON DWG. S-2 FOR PAD REINFORCING.

NOTE
FOR APPLICABLE NOTES AND TYPICAL DETAILS, SEE DWG. NO. S-1, S-2, & S-3.

RECORD DRAWINGS

REV. NO.	DATE	MADE BY	CHECKED BY	DESCRIPTION
4	3-21-84	S.A.B	H.M.P.	REVISION NO. 3
3	4-18-83	R.D.S.		ADDENDUM NO. 4
2	4/14/83	SAB	HMP	ADDENDUM NO. 4
1	3/30/83	DSG	HMP	ADDENDUM #2

DESIGNED BY: H.M.P.
DRAWN BY: A.M. Jr.
CHECKED BY: P.D.
CONTRACT NO. 1
SCALE: AS SHOWN
CEM NO. 3940
APPROVED FOR CEM: Joseph A. Gowec (REG. PROF. ENG.) DATE: 2/1/83

STATE OF CONNECTICUT · YUSUF A. GONENC · NO. 6130 · REGISTERED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · LICENSED PROFESSIONAL ENGINEER · No. 11876

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD-EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

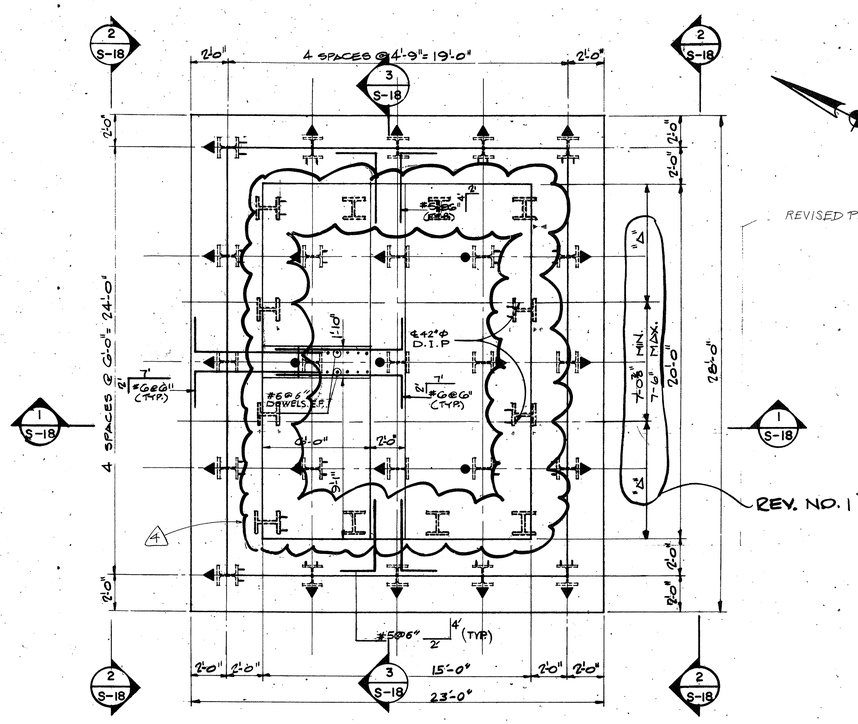
EAST STREET PUMP STATION

JUNCTION CHAMBER NO. 3
STRUCTURAL PLANS & SECTIONS

MAGUIRE
Engineers · Planners
CE MAGUIRE, INC. New Britain, Connecticut

S-17

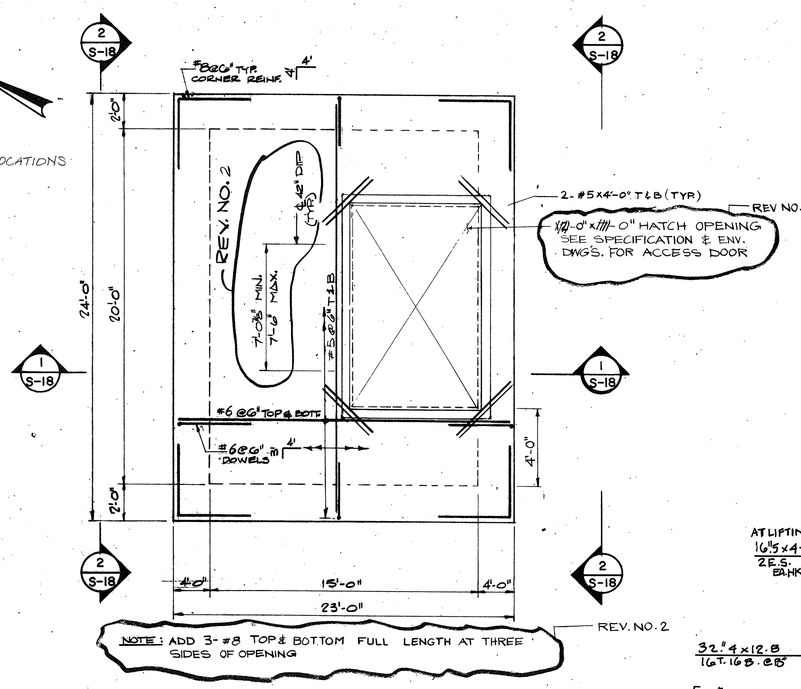
JOSEPH MERRITT & CO.



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

REVISED PILE LOCATIONS

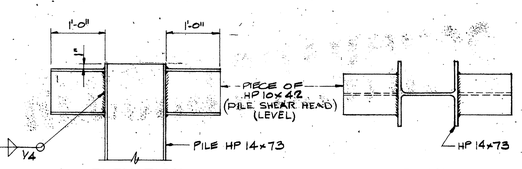


NOTE: ADD 3-#8 TOP & BOTTOM FULL LENGTH AT THREE SIDES OF OPENING

REV. NO. 2

ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

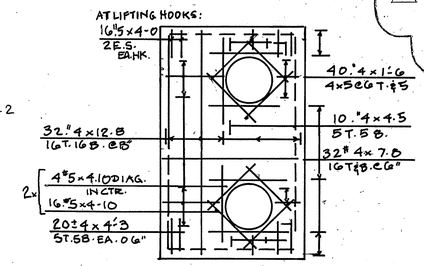


PILE SHEAR HEAD DETAILS

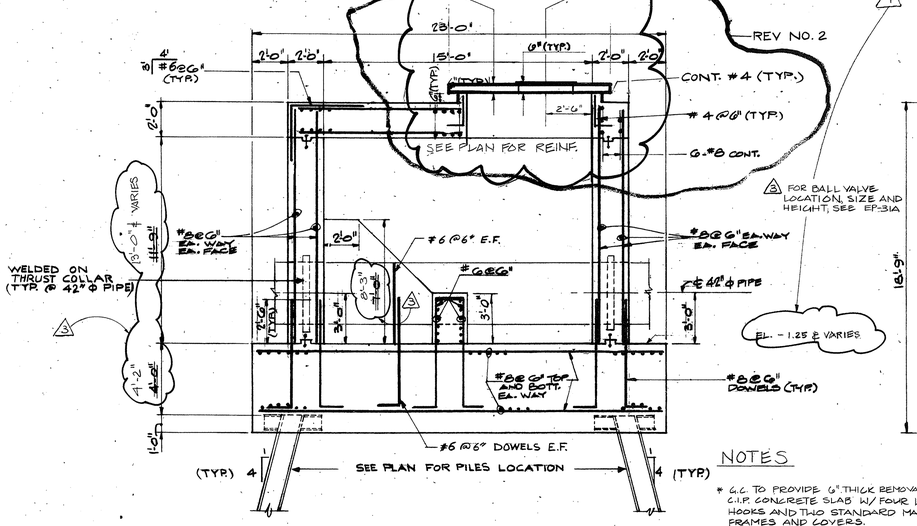
NOTES

1. DRIVE 4 VERTICAL TEST PILES AND PERFORM MINIMUM OF 2 PILE LOAD TEST.
2. PILES TO BE DRIVEN TO 130 TON CAPACITY.
3. ALL PILES TO BE HP 14x73.
4. ↧ DENOTES VERTICAL TEST PILES.
5. ↧ DENOTES PILES BATTERED 1:4 IN THE DIRECTION OF THE ARROW.
6. G.↧ DENOTES PILE SHEAR HEAD. COST OF PILE SHEAR HEADS SHALL BE INCLUDED IN THE CONTRACT ITEM FOR "STEEL H PILES."

(3) 5" RIGID STEEL CONDUIT TO BE PLACED FROM SIX INCHES INSIDE CHAMBER TO FIVE FEET OUTSIDE THE CHAMBER. FOR CONDUIT REQUIREMENTS, SEE SPECIFICATION 16102. FOR WALL SEAL DETAILS, SEE SHEET E-14. REFER TO DRAWING E-20 FOR MANHOLE TERMINAL BOX DETAILS.



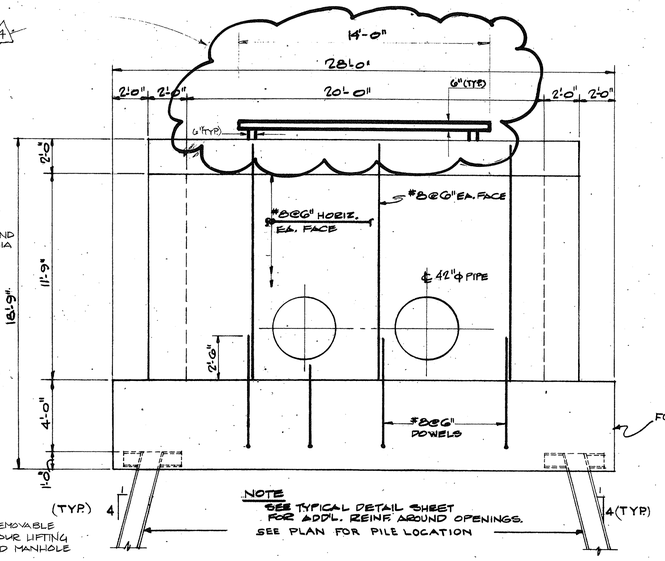
MANHOLE COVER DETAIL
(2 REQ'D)
1 EA. J. CHAMBER



SECTION (1 / S-18)

SCALE: 1/4" = 1'-0"

(3) FOR BALL VALVE LOCATION, SIZE AND HEIGHT, SEE EP-31A



NOTE
SEE TYPICAL DETAIL SHEET FOR ADD'L. REINF. AROUND OPENINGS.
SEE PLAN FOR PILE LOCATION

ELEVATION (2 / S-18)

SCALE: 1/4" = 1'-0"

NOTES

* G.C. TO PROVIDE 6" THICK REMOVABLE C.I.P. CONCRETE SLAB W/ FOUR LIFTING HOOKS AND TWO STANDARD MANHOLE FRAMES AND COVERS.
* PROVIDE 1" CONC. COVER FOR REINF. TOP & BOTTOM OF SLAB FOR ADD'L REINF. AROUND MANHOLE OPENING, SEE - DWG. S-2.
* G.C. TO PROVIDE KENT SEAL OR EQUAL WHERE SLAB ABUTS CHAMBER, TO PROVIDE WATERTIGHT JOINT.
* 2'-0" x 2'-0" x 0'-9" DEEP SUMP REINFORCED WITH #8 @ 6" E.W. SEE E.P. DWGS FOR LOCATION. (EP 30A & 31A)
* (3) FOR BALL VALVE CONC. PAD REINFORCING, SEE DETAIL ON DWG. S-2.

NOTE
FOR APPLICABLE NOTES AND TYPICAL DETAILS, SEE DWG. NO. S-1, S-2 & S-3.

REV. NO.	DATE	MADE BY	CHECKED BY	DESCRIPTION
4	3-21-84			AS-BUILT REVISIONS
3	4-18-83	R.D.S.		ADDENDUM NO. 4
2	4/14/83	S.A.B.	H.M.P.	ADDENDUM NO. 4
1	3/30/83	D.S.G.	H.M.P.	ADDENDUM #2

DESIGNED BY: H.M.P.
DRAWN BY: A.M. Jr.
CHECKED BY: P.D.
CONTRACT NO. 1
SCALE: AS SHOWN
CEM NO. 3940
APPROVED FOR CEM
Joseph A. Gouveia 2/1/83
REG. PROF. ENG. DATE

STATE OF CONNECTICUT JOSEPH A. GOUVEIA No. 11875 REGISTERED PROFESSIONAL ENGINEER

CITY OF NEW HAVEN, CONNECTICUT
BUREAU OF ENGINEERING
BOULEVARD - EAST STREET
WATER POLLUTION ABATEMENT PROJECT
PROJECT NO. 79-154-41

FORCE MAIN

JUNCTION CHAMBER NO. 4
STRUCTURAL PLANS & SECTIONS

MAGUIRE
Engineers · Planners
CE MAGUIRE, INC. New Britain, Connecticut

S 18

QUINNIPIAC RIVER

JOSEPH MERRITT & CO