

# **ADDENDUM NUMBER 3:**

## **CITY OF PORTSMOUTH, NEW HAMPSHIRE MULTI-PURPOSE RECREATION FIELDS & REGIONAL STORMWATER TREATMENT SYSTEM PROJECT**

### **CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS**

**Issued: May 15, 2020  
For Bids Due: May 19, 2020**

This addendum modifies, amends, and supplements parts of the Contract Documents, Technical Specifications, and Construction Drawings for the **City of Portsmouth, NH Multi-Purpose Recreation Fields & Regional Stormwater Treatment System Project**, and is hereby made an integral part thereof by reference and shall be as binding as though inserted in its entirety in the locations specified herein. The Contractor shall notify their subcontractors and suppliers of any changes or modifications contained in this addendum.

Bidders shall acknowledge receipt of this **Addendum No. 3** on the Bid Form.

Bidders are hereby notified that no changes have been made to the bid due date and time. Bids are still due on **May 19, 2020 at 2:00 p.m.**

The Contract Documents, Technical Specifications, and Construction Drawings for the subject project shall be supplemented and/or amended as follows:

#### **A. GENERAL**

1. All field drainage within the limits of Field 1 and Field 2 (inside the perimeter porous pavement walk/nailer curb) shown on sheet C-202 and listed in the "Field Drainage Pipe Table" and "Field Drainage Structure Table," is **subsidiary to Pay Item 4.00: Field 1 Synthetic Turf Field**. Site drainage listed in the "Site Drainage Pipe Table" and "Site Drainage Structure Table" is paid for separately under the applicable unit price pay items. See General Notes on Sheet C-202. Flat drain field underdrains as shown on sheet L1.02 are included in the base bid for Field 1 (Pay Item 4.00: Field 1 Synthetic Turf Field) and Bid Alternate A for Field 2 (Pay Item A1: Field 1 Synthetic Turf Field). See notes on sheet C-301 for payment of drainage pipes and structures within the stormwater BMP facilities.
2. Two Electric Pull Boxes, per detail B on Sheet D-106, shall be subsidiary to item B2 – Electrical Service Conduit. The pull boxes shall be installed near the service drop at Community Campus Drive and on the Access Drive off Community Campus drive as shown on sheet EL1.01R.

## **B. CONSTRUCTION DRAWINGS**

### **1. Sheet N-101**

- a. Construction Traffic Management & Signing Notes.
  - i. Note 1: The reference to “Variable Message Boards” shall be removed.
  - ii. Note 5: Shall be deleted. The contractor is not required to provide Variable Message Boards but shall install appropriate fixed construction zone signs on Community Campus drive, alerting drivers of construction traffic.

### **2. Sheet C-201**

- a. The storage shed on a concrete pad shall be located on the east side of Field 2 as shown on sheet L1.01.
- b. In the location where the storage shed is shown on sheet C-202 there shall be a 17' x 32' concrete pad as shown on sheet L1.01. This concrete pad shall be subsidiary to Item 4.09 – Storage Shed on Concrete Pad.

### **3. Sheet C-202**

- a. Pipe UD-11 and field structure PFI-5 shall be included in Bid Alternate A, not the base bid. The cost for this pipe and structure shall be included in bid item A1 – Field 2 Synthetic Turf Field.
- b. In plan view, the label for pipe DP-13 shall be revised to DP-22. In the Site Drainage Pipe Table for pipe DP-22, the start structure shall be revised to PHW-12 and the end structure shall be revised to PDMH-7. See attached revised plan.

### **4. Sheet D-103**

- a. A note shall be added to Detail A: The Contractor may substitute precast headwalls for Masonry Rubble headwalls.

### **5. Sheet L-1.01**

- a. Notes shall be deleted referencing Bit Conc. Pavement – Pedestrian (detail 9/L2.00) and Bit. Conc. – Heavy Duty (detail 10/L2.00). The walkway around the perimeter of the fields shall be porous pavement per detail G on sheet C-107 and the specifications. The paved parking access and handicap spaces shall be per detail A on Sheet D-107. The Emergency Access drive connecting the parking area to the perimeter walkway shall be gravel per detail C on Sheet D-107.

### **6. Sheet L-2.00**

- a. A note shall be added to Detail 1: Field drain manholes shall be 24” Heavy Duty Nyloplast Drain Basins or approved equal.

### **7. Sheet EL1.01R**

- a. The electrical service from Community Campus Drive shall include two 5” conduits (not 4”).
- b. Hard wired parking lot lights are not required. The conduit for the parking lot lighting shall not be required and the note for the LED parking lot lights shall be removed. The parking lot lights shall be solar lights per the specification section 16500.

8. Sheet EL1.02

- a. Detail 2 shall be replaced with Detail A on sheet D-106.
- b. Detail 4 shall be removed. The solar powered parking lot lights shall have concrete bases per detail C on sheet D-106

C. RESPONSE TO BIDDER'S QUESTIONS

1. *Please provide additional information on night security light requirements as listed on 01510-2.*

**Response:** Night security lights are not required. This provision will be removed from section 01510.

2. *Please clarify if a water truck will be required on site at all times per 01562-1 or if daily watering/ alternate watering sources will be acceptable.*

**Response:** A water truck is not required to be on site at all times, but all other the provisions of Section 01562 must be met.

3. *Please confirm maintenance and watering of seeded areas is the responsibility of the contractor for two growing seasons.*

**Response:** The Contractor shall maintain the entire seeded area, as necessary to ensure dense healthy growth, until completion of the guarantee period and final acceptance of the project which is two full growing seasons.

4. *Please confirm maintenance, watering, pruning, etc. for all plantings is required for one year after installation date.*

**Response:** All plant materials shall be guaranteed for a period of one year after the date of completion of the specified maintenance period and preliminary acceptance of the project by the Owner.

5. *Please confirm G Max testing is required for the 8 year warrantee period of the artificial turf.*

**Response:** Guarantee: During the eight-year guarantee period, the G max rating shall remain less than 165. The Contractor shall contract with an independent testing laboratory to perform three in place G max tests each on site during the first, third, fifth, seventh and eight years. If any test results meet or exceed 165, modify the infill material ratios as necessary to achieve satisfactory results. Perform additional testing to verify the results as required by the Architect. If the G max rating exceeds 165 after three attempts to repair the high rating, replace the field within 90 calendar days at no cost to the Owner.

6. *Could you please clarify the difference between the synthetic field in the base bid and the alternate bid? Specifically, the line packages for base bid field #1 and alternate field #2? The drawings don't call out which fields the lines shown should apply to.*

**Response:** Synthetic Field 1 is under Base bid, Synthetic Field 2 is under Add Alt A. Field lines are identical for each field and should be included at time of construction per field.

7. *After reviewing addendum #2 which states "Shed shall have a gabled standing seam metal roof" and speaking with a sales representative from Jamaica Cottage Shop, it's come to my attention that they do NOT carry the specified roof. The Cottage Shop can only provide the specified shed with corrugated 29g metal roofing. Can you please advise if the city will accept that as an approved equal?*

**Response:** Roof per model number and manufacturers recommendations.

8. *Specs say all fence is a black system. Detail for 6ft CLF says galvy system with 2" rails – A/D-108. Specs also mention slatting for fence. Please clarify what we are to install for fencing.*

**Response:** The fencing around the recreation fields shall be Black Vinyl Chain Link (BVCL) fencing per the details on sheet L2.01 and specification in section 02820 – Chain Link Fence. The site fencing adjacent to BMP-R2 and on top of the earthen berm shown on sheet C-202 shall be galvanized chain link fence per detail A on sheet D-108. No fence slats are required.

9. *What type of fabric are we to install under the Base Stone at the synthetic turf fields? See details 3 & 6 on L2.00. Is it all Amoco 4545 "or-equal"? or are there 2 types of fabric? Please clarify.*

**Response:** The filter/drainage fabric shall be Mirafi 180N as manufactured by TenCate Geosynthetics; Foss-65 by Foss Manufacturing Co., Hampton, NH; US 120NW, as manufactured by US Fabrics, Cincinnati, OH, or approved equal.

10. *What kind of 2.5-3" caliper trees are we to carry and where will they be planted? Bid Items 2.45 (qty:60) & A7 (qty:6)*

**Response:** The base bid (item 2.45) shall include the trees in the planting schedule on sheet L1.03. Bid Alternate A (item A7) shall include 6 Zelcova (Zelkova serrata) trees, 12-14' height. The Bid Alternate A trees shall be planted in the area between the parking lot and Field 2 if Bid Alternate A is selected.

11. *I assume the landscaping item (2.46) is for the materials shown in the plant list on L1.03. Please confirm.*

**Response:** The tree plantings in the planting schedule shall be paid for under item 2.45.

12. *The "Bioretention basin with ISR detail" on sheet C-307 shows an impermeable liner between the #8 stone and #5 stone at a 0.5% slope. The section view on sheet C305 does not show this slope/liner. Please confirm.*

**Response:** The section of the Bioretention Basin on sheet C-305 shows the extents of grading relative to existing grade. The details for construction are shown on the Bioretention Basin Details sheet C-307. The impermeable liner is required between the pea gravel and ¾" crushed stone.

13. The "Stormwater Dam/Berm Detail" shows the low permeability fill buried within the berm as well as below the surface layer. The section views only show the low permeability fill under the bottom of the "gravel layer". Please confirm the limits of the low permeability fill in all the stormwater areas.

**Response:** See detail A on sheet C-301 for required extents and configuration of low permeability fill.

14. Please confirm the depth of the wetland soil in BMP-R1.

**Response:** As shown in detail A on sheet C-306, the depth of wetland soil is 12" in BMP-R1 and 8" and BMP-2.

15. Sheet N-101- note 5 states the contractor is to supply three portable message boards, however specification section 01025 B.7 states the contractor will only be paid for two. Please advise how many are required.

**Response:** The contractor is not required to provide Variable Message Boards but shall install appropriate fixed construction zone signs on Community Campus drive, alerting drivers of construction traffic.

16. Sheet C-201 & L1.01- the Civil and Landscape plans are not coordinated for materials and detail callouts. For example L1.01 calls for bituminous concrete pavement- pedestrian (9/L2.00) around the field while C-201 calls for porous pavement (G/D107). Which plan shall govern?

**Response:** For any discrepancies, sheets C-201 and C-202 shall govern for all work outside the recreational field fencing, except for the location of the storage shed and 17, x 32 concrete pad as noted in this bid addendum (see B.2. above) . The walkway around the perimeter of the fields shall be porous pavement per detail G on sheet C-107 and the specifications. The paved parking access and handicap spaces shall be per detail A on Sheet D-107. The Emergency Access drive connecting the parking area to the perimeter walkway shall be gravel per detail C on Sheet D-107.

17. Detail 1/Sheet L2.05- shows model FB-2018 whereas section 02801 states a MS-2002 model. Please advise which model to include in the bid.

**Response:** Model: Daktronics MS-2002 as manufactured by Daktronics, 274 Fruit St, Mansfield, MA 02048, 508-339-8113, [info@scoreboardenterprises.com](mailto:info@scoreboardenterprises.com) or approved equal.

18. Please advise which water fountain is desired. Model GYM74 shown on the plans or M43B (new model # for spec'd item)?

**Response:** Fountains shall be Murdock-Super Secur M-43 or approved equal.

19. Sheet D-107- Provide gradation for 304.8 material specified?

**Response:** The 304.8 Surface Gravel Material shall meet following screen analysis requirements by weight.

Sieve Designation	Percent Passing
¾"	100
No. 4	40 - 75
No. 8	25 - 67
No. 40	13 - 35
No. 200	8 - 15

Gradation shall be obtained by crushing, screening, and blending processes as may be necessary. Material must not exceed Plasticity Index (PI) rating of 6. The laboratory test required for these results is the ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

20. Sheet C-307- BMPR2 BOP elevation calculates as 27.42 based on the dimensions provided. Sheet C-305 shows an elevation of 27.09. Please advise which elevation is correct.

**Response:** The BOP elevation of BMP-R3 = 27.42.

21. Detail A/C-301- What is the profile for the Maintenance Access Road? A detail has not been provided.

**Response:** The maintenance access road shall be on top of the 8' wide section of the berm surrounding the BMP's.

22. Sheet C-202- Site Drainage Pipe table states UD-13 is 15" Perf CPE, however in the next column it states 12". Is this pipe 15" or 12"?

**Response:** Pipe UD-13 shall be 15" perf. CPE.

23. Sheet C-202- Please provide what material and size DP-13 is.

**Response:** In plan view on sheet C-202, pipe DP-13 should be labeled DP-22. The pipe information for pipe DP-22 in the Site Drainage Pipe Table is correct; the start structure shall be revised to PHW-12 and the end structure shall be revised to PDMH-7.

24. Sheet C-201- Please provide detail for Wooden Guardrail.

**Response:** See attached detail SK-1.

25. Sheet D-108- Please provide a spec for the removable bollard.

**Response:** See attached specification 02802 – Steel Bollards.

26. Item 2.29- Could Precast Concrete Headwalls be used in lieu of Masonry?

**Response:** Yes.

27. Detail 5/L2.00- shows rebar in the nailer but no specifics have been provided for sizing. Please advise. Also, can fiber be used in lieu of rebar?

**Response:** #4 Rebar for nailer. No fiber allowed.

28. Detail 3/L2.00- calls for both a stabilization and a filter fabric. Are both required and if so, please specify a product for each.

**Response:** Yes, both are required, see question/ response #9 for fabric details.

29. Sheet L2.01- vinyl clad multi-lock bands have different spacing requirements throughout details 1, 2, & 3. Please advise.

**Response:** Bands are to be installed as indicated per details.

30. The Civil plans call for 4" loam depth, Landscape plans call for 6" loam depth. Which one should we carry?

**Response:** Loam borrow shall have a minimum depth of 4".

31. Please provide additional information as to what scope should be carried in Item 2.02.

**Response:** Bid Item 2.02 – Stockpile Re-handled & Material Compaction shall include all work required to manage the material that has been stockpiled since the time of the existing conditions survey (see Addendum 2) not included in the 2.00 – Earthwork pay item. This work shall include but not limited to preparing the material to conform with common borrow specifications and testing the material.

32. Confirm we own the shelters for the portable toilets, not the toilets themselves.

**Response:** Port-a-jon toilets will be provided and installed by the City.

33. Spec 02500- Where are there ADA curb cuts?

**Response:** There are now ADA curb ramps required in the project. Section 02500 will be removed from the technical specifications.

34. Spec 02560- Where is granite curb required?

**Response:** There is no granite curbing required for the project. Section 02560 will be removed from the technical specifications.

35. Spec 02820- Where is CLF slatting required?

**Response:** No fence slats required.

36. Should all earthwork other than BMP's be included in Item 2.00?

**Response:** Yes. See Section 01025 – Measurement & Payment, Item 2.00, and Section 02100, Section C.

37. Item 2.03- What is considered the "Emergency Access Drive"?

**Response:** See sheet C-201. The Emergency Access Drive connects the paved parking drive aisle with the porous pavement pedestrian walk around the perimeter of fields.

38. What is the size of the existing water main we need to tap?

**Response:** The existing water main in Community Campus is 10" DI.

39. Detail E/C-308- there is a price difference between these 3 alternatives. Should we assume Alternative A for base bid and B & C will be dealt with as a change order should conditions exist that require them per note #2?

**Response:** The contractor can choose any of the three alternatives and should include in the bid whichever one is the cheapest.

40. Please confirm if the City is paying for testing or the contractor – soil, concrete, asphalt, etc.

**Response:** All testing shall be paid for by the Contractor and shall be subsidiary to applicable work items.

41. Measurement & Payment Item No. 1.01, B.3. should be paid under 1.02?

**Response:** Correct. Section 01025, Item 1.01, B.3., should be paid under 1.02. This typo will be revised in the Section 01025 contract documents for construction.

42. Item 2.45 Tree planting calls for underdrain, none shown on plan.

**Response:** Remove Tree planting underdrains from detail.

43. Items 4.07, 4.08, 4.09 are we using detail 5/L2.02 for the concrete pads? Is haunch around entire perimeter and where anchorage for structures would go?

**Response:** Yes, haunch is required around perimeter of pads.

44. Which item is the mow curb subsidiary too? Fence or field?

**Response:** The nailer curb is subsidiary to the Synthetic Turf Field items.

45. Are the field inlets "PFI's" Nyloplast basins? 2x2 inlets? Same as PFMH (detail 1 on L2.00) No detail, not listed in drainage schedule.

**Response:** See detail 1 on sheet L2.000 PFI's shall be 24" Heavy Duty Nyloplast Drain Basins or approved equal.

46. PFI-5 is noted as an alternate drain manhole in Turf Box on L1.02? Are these proposed field inlets for proposed field manholes?

**Response:** PFI-5 and UD-11 shall be included in Bid Alternate A, not the base bid. Per this addendum, sheet C-202 has been revised to reflect this configuration.

47. Are PCO-UD-1 and PCO-UD-2 Nyloplast basins? 12" or 24"

**Response:** PCO-UD-1 and PCO-UD-2 shall be 24" Heavy Duty Nyloplast Drain Basins with 4" cast iron frame and solid cover.

48. Should deducts be created for each item that will not be installed under base bid if Alternate A is chosen?

**Response:** For Bid Alternate A, reductions in lump sum items (e.g. turf establishment) should be incorporated into the price for bid item A1 – Field 2 Synthetic Turf Field. Unit price items that are reduced (e.g. stone dust walk) accordingly based on the actual quantity installed.



49. Is there a storage shed on the east side of field 2, between the field and the parking area, or just on the north side of field 1 as shown on sheet C-202?

**Response:** The storage shed on a concrete pad shall be located on the east side of Field 2 as shown on sheet L1.01. On the west side of Field 1, there shall be a 17' x 32' concrete pad for storage as shown on sheet L1.01. This concrete pad shall be subsidiary to Item 4.09 – Storage Shed on Concrete Pad.

50. Is the pedestrian walk standard pavement or porous pavement? Is the vehicular paved areas general hot bituminous pavement as noted on sheet C-201?

**Response:** See response to question 16.

51. There is no item for 18" perf underdrain. Should item 2.18 b added back into the bid tab or is the pipe size incorrect?

**Response:** Field drainage pipe listed in the "Field Drainage Pipe Table" is subsidiary to Pay Item 4.00: Field 1 Synthetic Turf Field. See General Note 1 in this bid addendum and the General Notes on Sheet C-202.

52. Will an item be added for EMH's in Alt B or is this subsidiary to B2? Can a detail be provided for these?

**Response:** Two Electric Pull Boxes, per detail B on Sheet D-106, shall be subsidiary to item B2 – Electrical Service Conduit. The pull boxes shall be installed near the service drop at Community Campus Drive and on the Access Drive off Community Campus drive as shown on sheet EL1.01R.

53. Is the water main HDPE or DI?

**Response:** The contractor can select either HDPE or DI water main.

Attachments to Addendum No. 3:

Sheet C-202 Recreation Field Grading & Drainage  
SK-1 Wood Guardrail Detail  
Section 02802 – Bollards

**Please acknowledge this Addendum within your proposal; failure to do so may disqualify the Bidder.**

**END OF ADDENDUM NO. 3**



STRUCTURE	STRUCTURE DETAILS
PCB-1	I.D. = 4' RIM ELEV. = 35.41 SUMP ELEV. = 30.50 UD-2 INV OUT = 32.50 (SE)
PCB-2	I.D. = 4' RIM ELEV. = 35.02 SUMP ELEV. = 30.19 UD-4 INV OUT = 32.19 (SE)
PCB-3	I.D. = 4' RIM ELEV. = 36.20 SUMP ELEV. = 31.85 UD-6 INV OUT = 33.85 (SW)
PCB-4	I.D. = 4' RIM ELEV. = 36.05 SUMP ELEV. = 31.19 UD-8 INV OUT = 33.19 (SE)
PCB-5	I.D. = 4' RIM ELEV. = 36.21 SUMP ELEV. = 29.94 DP-4 INV OUT = 31.94 (SW)
PHW-12	RIM ELEV. = 31.75 DP-11 INV IN = 29.54 (N)

STRUCTURE	STRUCTURE DETAILS
PCO-UD-1	I.D. = 1' RIM ELEV. = 36.63 SUMP ELEV. = 34.50 UD-17 INV OUT = 34.67 (SW)
PCO-UD-2	I.D. = 2' RIM ELEV. = 36.62 SUMP ELEV. = 33.99 UD-16 INV IN = 34.26 (NW) UD-15 INV OUT = 34.16 (SE)
PDMH-1	I.D. = 4' RIM ELEV. = 36.79 SUMP ELEV. = 34.01 UD-17 INV IN = 34.61 (NE) UD-16 INV OUT = 34.51 (SE)
PDMH-2	I.D. = 4' RIM ELEV. = 36.59 SUMP ELEV. = 26.55 DP-1 INV IN = 28.65 (SW) UD-8 INV IN = 29.16 (NW) DP-2 INV OUT = 28.55 (SE)

STRUCTURE	STRUCTURE DETAILS
PDMH-3	I.D. = 4' RIM ELEV. = 36.64 SUMP ELEV. = 27.51 DP-4 INV IN = 31.59 (NE) UD-10 INV IN = 31.59 (SW) DP-3 INV IN = 28.27 (NW) DP-5 INV OUT = 28.01 (SE)
PDMH-4	I.D. = 4' RIM ELEV. = 36.66 SUMP ELEV. = 31.37 UD-13 INV IN = 33.41 (SW) DP-6 INV OUT = 32.82 (NE)
PDMH-5	I.D. = 4' RIM ELEV. = 36.67 SUMP ELEV. = 31.53 UD-14 INV IN = 33.63 (SW) UD-13 INV OUT = 33.53 (NE) DP-23 INV IN = 33.63 (SE)
PDMH-6	I.D. = 4' RIM ELEV. = 37.84 SUMP ELEV. = 31.70 UD-15 INV IN = 33.90 (NW) UD-14 INV OUT = 33.70 (NE)
PDMH-7	I.D. = 4' RIM ELEV. = 33.08 SUMP ELEV. = 26.76 DP-7 INV IN = 27.36 (SW) DP-8 INV OUT = 27.26 (NE)

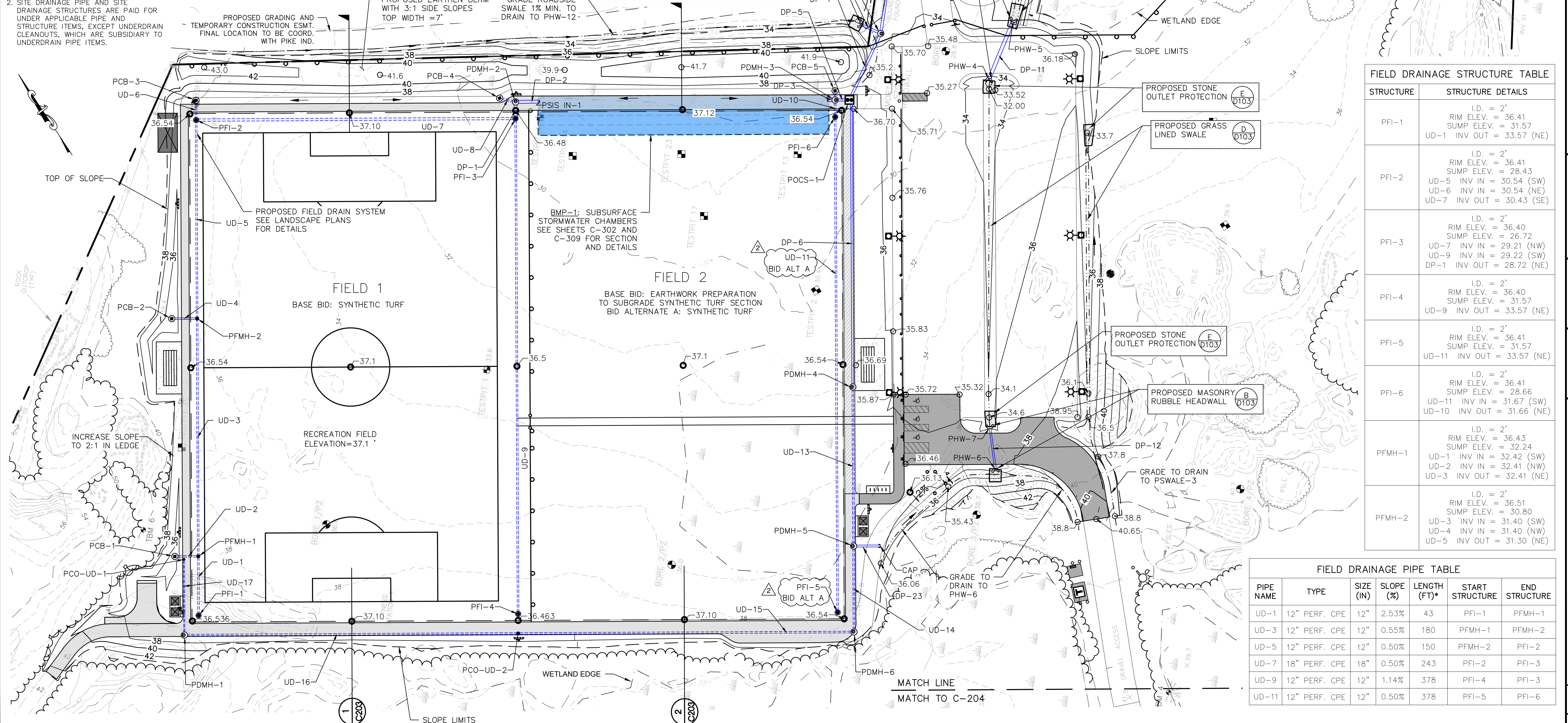
STRUCTURE	STRUCTURE DETAILS
PDMH-8	I.D. = 4' RIM ELEV. = 31.43 SUMP ELEV. = 26.09 DP-8 INV IN = 26.69 (SW) DP-9 INV IN = 27.09 (NE) DP-10 INV OUT = 26.59 (SE)
PHW-4	RIM ELEV. = 33.85 DP-11 INV OUT = 31.10 (NE)
PHW-5	RIM ELEV. = 31.75 DP-11 INV IN = 28.85 (SW)
PHW-6	RIM ELEV. = 36.68 DP-12 INV OUT = 35.02 (NE)
PHW-7	RIM ELEV. = 33.55 DP-12 INV IN = 34.70 (SW)
POCS-1	DIMENSIONS = 72"x72" RIM ELEV. = 36.67 SUMP ELEV. = 27.14 DP-5 INV IN = 27.75 (NW) DP-6 INV IN = 32.20 (SW) DP-7 INV OUT = 27.64 (NE)

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START STRUCTURE	END STRUCTURE
DP-1	24" CPE	24"	0.50%	10	PFI-3	PDMH-2
DP-2	24" CPE	24"	0.55%	16	PDMH-2	PSIS IN-1
DP-3	24" CPE	24"	0.50%	4	PSIS-OUT	PDMH-3
DP-4	12" CPE	12"	5.00%	3	PCB-5	PDMH-3
DP-5	18" CPE	18"	2.38%	6	PDMH-3	POCS-1
DP-6	15" HP STORM PP	15"	0.50%	220	PDMH-4	POCS-1
DP-7	18" CPE	18"	0.50%	51	POCS-1	PDMH-7
DP-8	18" CLASS V RCP	18"	0.50%	110	PDMH-7	PDMH-8
DP-11	24" CLASS V RCP	24"	4.67%	47	PHW-4	PHW-5
DP-12	15" CLASS V RCP	15"	0.99%	32	PHW-6	PHW-7
DP-22	15" CLASS V RCP	15"	0.62%	14	PHW-12	PDMH-7

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START STRUCTURE	END STRUCTURE
DP-23	15" CPE	15"	0.50%	20	--	PDMH-5
UD-2	12" PERF. CPE	12"	0.50%	15	PCB-1	PFMH-1
UD-4	12" PERF. CPE	12"	4.06%	16	PCB-2	PFMH-2
UD-6	12" PERF. CPE	12"	21.80%	13	PCB-3	PFI-2
UD-8	12" PERF. CPE	12"	32.12%	9	PCB-4	PDMH-2
UD-10	12" PERF. CPE	12"	0.50%	10	PFI-6	PDMH-3
UD-13	15" PERF. CPE	12"	0.10%	122	PDMH-5	PDMH-4
UD-14	12" PERF. CPE	12"	0.10%	62	PDMH-6	PDMH-5
UD-15	12" PERF. CPE	12"	0.10%	255	PCO-UD-2	PDMH-6
UD-16	12" PERF. CPE	12"	0.10%	253	PDMH-1	PCO-UD-2
UD-17	8" PERF. CPE	8"	0.10%	56	PCO-UD-1	PDMH-1

- GENERAL NOTES:**
- FIELD DRAINAGE PIPES AND FIELD DRAINAGE STRUCTURES ARE SUBSIDIARY TO PAY ITEM 4.00: FIELD 1 SYNTHETIC TURF FIELD.
  - SITE DRAINAGE PIPE AND SITE DRAINAGE STRUCTURES ARE PAID FOR UNDER APPLICABLE PIPE AND STRUCTURE ITEMS, EXCEPT UNDERDRAIN CLEANOUTS, WHICH ARE SUBSIDIARY TO UNDERDRAIN PIPE ITEMS.

**Pike Industries**

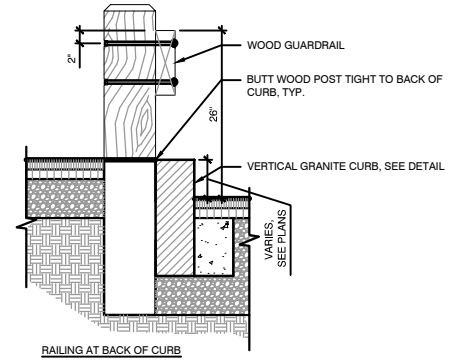
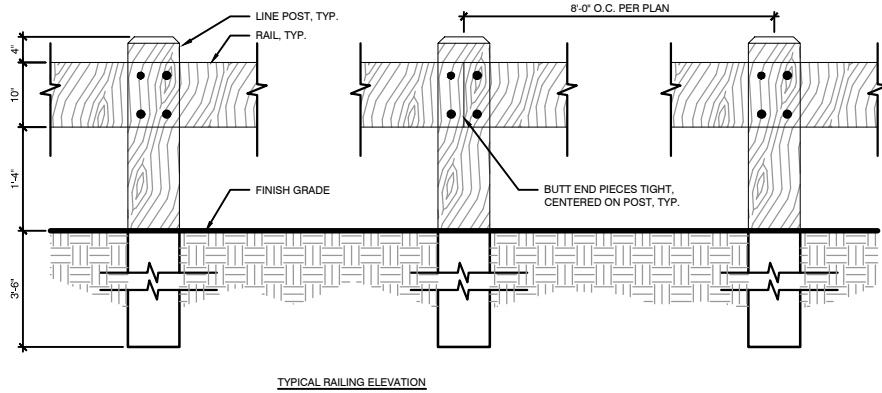
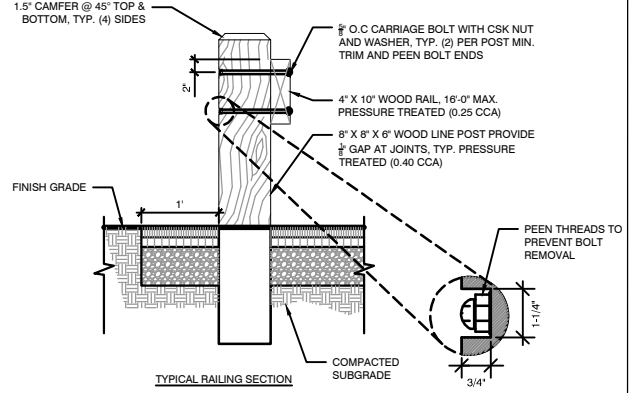
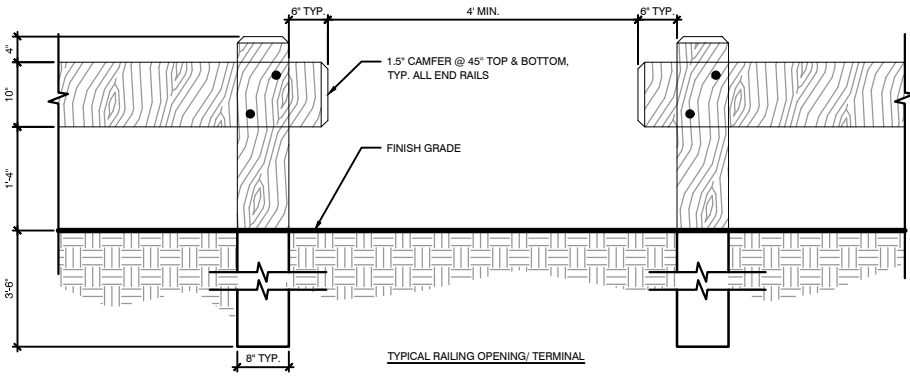


STRUCTURE	STRUCTURE DETAILS
PFI-1	I.D. = 2' RIM ELEV. = 36.41 SUMP ELEV. = 31.57 UD-1 INV OUT = 33.57 (NE)
PFI-2	I.D. = 2' RIM ELEV. = 36.41 SUMP ELEV. = 28.43 UD-5 INV IN = 30.54 (SW) UD-6 INV IN = 30.54 (NE) UD-7 INV OUT = 30.43 (SE)
PFI-3	I.D. = 2' RIM ELEV. = 36.40 SUMP ELEV. = 26.72 UD-7 INV IN = 29.21 (NW) UD-9 INV IN = 29.22 (SW) DP-1 INV OUT = 28.72 (NE)
PFI-4	I.D. = 2' RIM ELEV. = 36.40 SUMP ELEV. = 31.57 UD-9 INV OUT = 33.57 (NE)
PFI-5	I.D. = 2' RIM ELEV. = 36.41 SUMP ELEV. = 31.57 UD-11 INV IN = 31.67 (SW) UD-10 INV OUT = 31.66 (NE)
PFI-6	I.D. = 2' RIM ELEV. = 36.41 SUMP ELEV. = 28.66 UD-11 INV IN = 31.67 (SW) UD-10 INV OUT = 31.66 (NE)
PFMH-1	I.D. = 2' RIM ELEV. = 36.43 SUMP ELEV. = 32.24 UD-1 INV IN = 32.42 (SW) UD-2 INV IN = 32.41 (NW) UD-3 INV OUT = 32.41 (NE)
PFMH-2	I.D. = 2' RIM ELEV. = 36.51 SUMP ELEV. = 30.80 UD-3 INV IN = 31.40 (SW) UD-4 INV IN = 31.40 (NW) UD-5 INV OUT = 31.30 (NE)

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START STRUCTURE	END STRUCTURE
UD-1	12" PERF. CPE	12"	2.53%	43	PFI-1	PFMH-1
UD-3	12" PERF. CPE	12"	0.55%	180	PFMH-1	PFMH-2
UD-5	12" PERF. CPE	12"	0.50%	150	PFMH-2	PFI-2
UD-7	18" PERF. CPE	18"	0.50%	243	PFI-2	PFI-3
UD-9	12" PERF. CPE	12"	1.14%	378	PFI-4	PFI-3
UD-11	12" PERF. CPE	12"	0.50%	378	PFI-5	PFI-6

designed by:	JHK	drawn by:	NJM	approved by:	address@domain.com
date:	April 2020	project no.:	1119	file name:	1119 Grading Plan-Phase 2-addendum 3.dwg
scale:	1" = 40'	scale:	1" = 40'	scale:	1" = 40'
<b>City of Portsmouth, New Hampshire</b> Department of Public Works Multi-purpose Recreation Fields and Regional Stormwater Treatment System Recreation Field Grading & Drainage					
drawing no. <b>C-202</b>					
sheet: 13 of 45					





**1** WOOD GUARDRAIL  
SCALE: NTS

SECTION 02802  
STEEL BOLLARDS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. This work shall consist of furnishing and installing fixed and removable bollards at the locations shown on the Plans or as ordered.

PART 2 - PRODUCTS

2.1 MATERIALS

The contractor shall use all new materials of high quality. The contractor shall submit product specifications for approval.

A. Steel Pipe

1. Steel pipe for bollards shall be ASTM A36 carbon structural steel pipe, painted gloss yellow.

B. Paint

Steel Subject to compliance with requirements, provide alkyd paint products of one of the following manufacturers or approved equal. Color shall be gloss yellow.

- a) Benjamin Moore and Company (Moore)
- b) Pratt and Lambert (P & L)
- c) The Sherwin Williams Company (S-W)

Primer coat shall be one of the following:

- a) Moore: Industrial Alkyd Metal Primer M0670
- b) P & L: Tech Guard Rust Inhibitor Primer S4551
- c) S-W: Kemm Kromik University Metal Primer B50Z

C. Concrete for footings and filling pipe shall be Class B conforming to 520.2

D. A padlock intended for exterior use shall be included with each removable bollard, including keys. The padlocks shall all be keyed to meet the requirements of the Portsmouth Fire Department.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Bollards shall be set plumb at the required locations, in concrete base, as depicted on the Plans.
- B. Bollard spacing and locations shall be as shown on Plans.

END OF SECTION