

LETTING DATE
12/21/2021
PCC SIDEWALK/TRAIL
TAP-U-8155(768)--81-07

BLACK HAWK

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PLANNING PROGRAMMING AND MODAL DIVISION

PLANS OF PROPOSED IMPROVEMENT ON THE PRIMARY ROAD SYSTEM BLACK HAWK WATER TRAIL FACILITIES

ON CEDAR RIVER MARINA
RECREATIONAL TRAIL ENHANCEMENTS
PCC SIDEWALK/TRAIL, MISCELLANEOUS

SCALE: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.

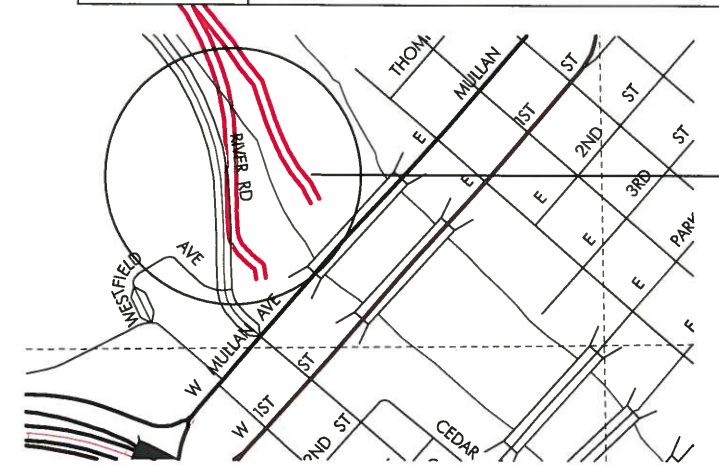
NO MILEAGE SUMMARY

This project is covered by the Iowa Department of Natural Resources NPDES General Permit No. 2. The contractor shall carry out the terms and conditions of General Permit No. 2 and the storm water pollution prevention plan which is a part of these contract documents. Refer to Section 2602 of the Standard Specifications for additional information.

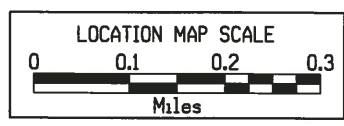
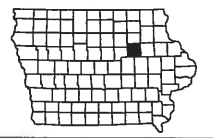
This project is covered by the following permits:
 Iowa Department of Natural Resources Flood Plain Development Permit No. 2021-0480FP-01
 Iowa Department of Natural Resources Sovereign Lands Construction Permit No. 2021-0480SL-01
 U.S. Army Corps of Engineers Nationwide Permit No. 2021-0415
 U.S. Army Corps of Engineers Permit No. 408-MVR-2021-0008

REVISIONS	

TOTAL
50
PROJECT IDENTIFICATION NUMBER
TAP-U-8155(768)--81-07
PROJECT NUMBER
R.O.W. PROJECT NUMBER

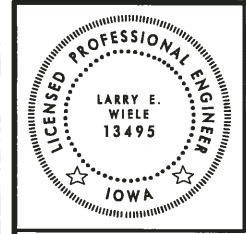


PROJECT LOCATION



Larry E. Wiele
 CITY OF WATERLOO ENGINEER
 DATE 9/21/21

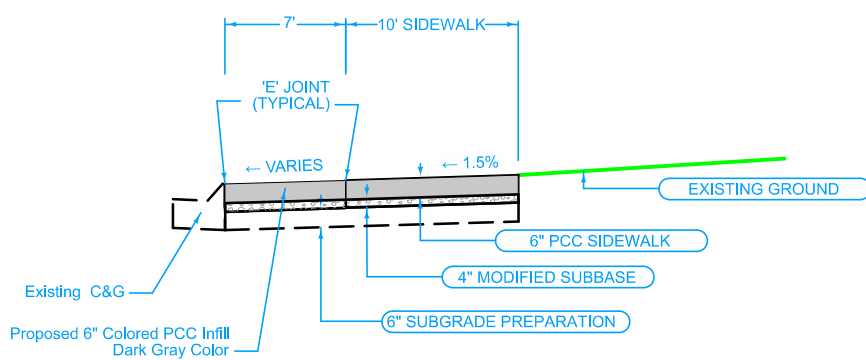
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Larry Wiele	Primary Signature Block
R.1	Mark Kuiper	Landscape Architect



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
 Signature Larry E. Wiele Date 09/21/2021
 Printed or Typed Name LARRY E. WIELE
 My license renewal date is December 31, 2021

Pages or sheets covered by this seal: ALL SHEETS EXCEPT R-SHEETS

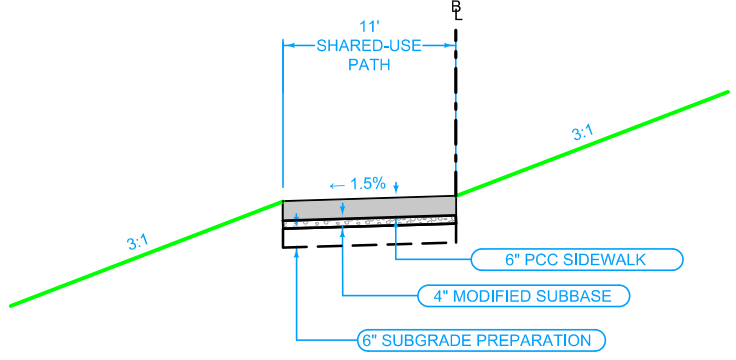
AECOM - 1



BEGIN STATION	END STATION	
500+00.00	500+23.10	INSTALL INFILL ONLY
500+32.10	500+62.20	INSTALL INFILL ONLY
500+72.20	501+02.35	INSTALL INFILL ONLY
501+12.32	501+42.50	INSTALL INFILL ONLY
501+52.50	502+22.20	INSTALL INFILL ONLY
502+48.35	502+72.65	INSTALL INFILL ONLY
502+82.50	503+12.67	INSTALL INFILL ONLY
503+22.90	503+53.50	INSTALL INFILL ONLY
503+63.90	504+35.20	INSTALL INFILL ONLY
504+45.30	504+75.64	INSTALL INFILL ONLY
504+85.80	505+16.50	INSTALL INFILL ONLY
505+26.67	505+57.20	INSTALL INFILL ONLY
505+67.40	506+08.25	INSTALL INFILL ONLY
506+18.45	506+89.50	INSTALL INFILL ONLY
506+89.50	508+44.80	INSTALL INFILL AND REC TRAIL

TYPICAL RIVER ROAD COLORED CONCRETE INFILL

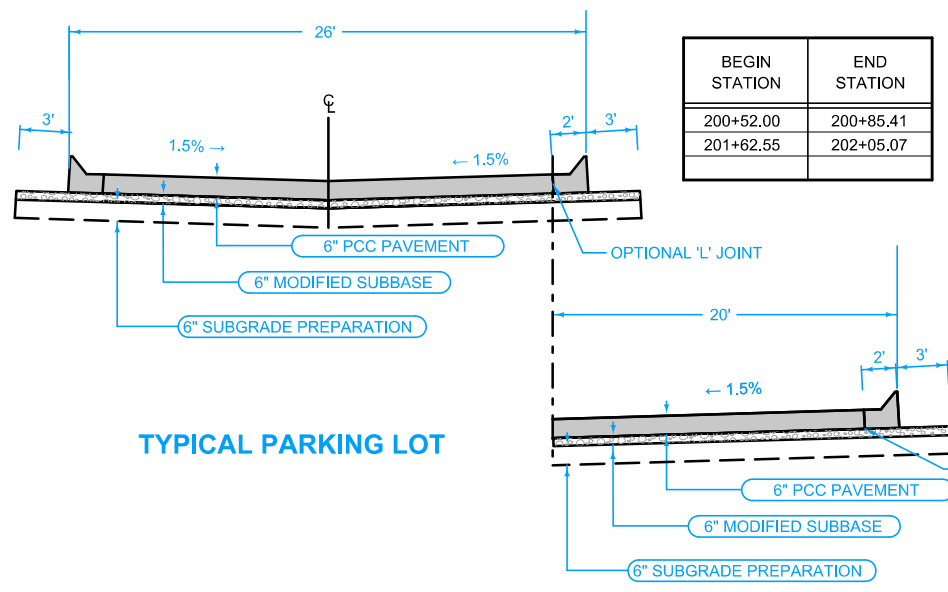
AECOM - 2



BEGIN STATION	END STATION
100+00.00	100+18.45

TYPICAL KAYAK 11' SHARED USE PATH

AECOM - 3

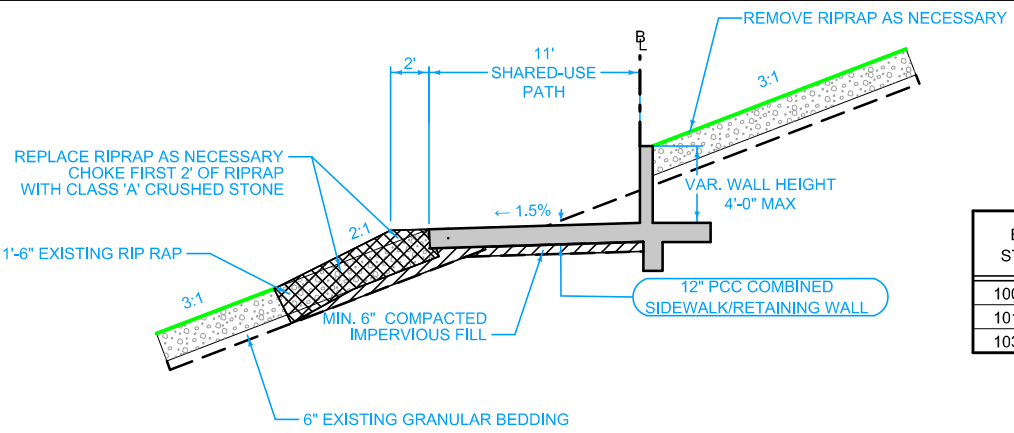


BEGIN STATION	END STATION
200+52.00	200+85.41
201+62.55	202+05.07

BEGIN STATION	END STATION
200+00.00	200+52.00
200+85.41	201+62.55

TYPICAL PARKING LOT

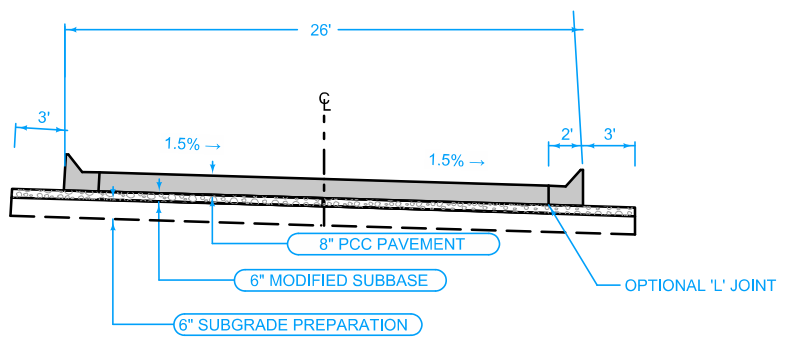
AECOM - 4



BEGIN STATION	END STATION	WALL HEIGHT
100+18.45	101+00.00	0' - 4'
101+00.00	103+85.00	4'
103+85.00	104+08.70	4' - 0'

TYPICAL KAYAK 11' SHARED USE PATH WITH COMBINED RETAINING WALL (SEE SHEET U.4)

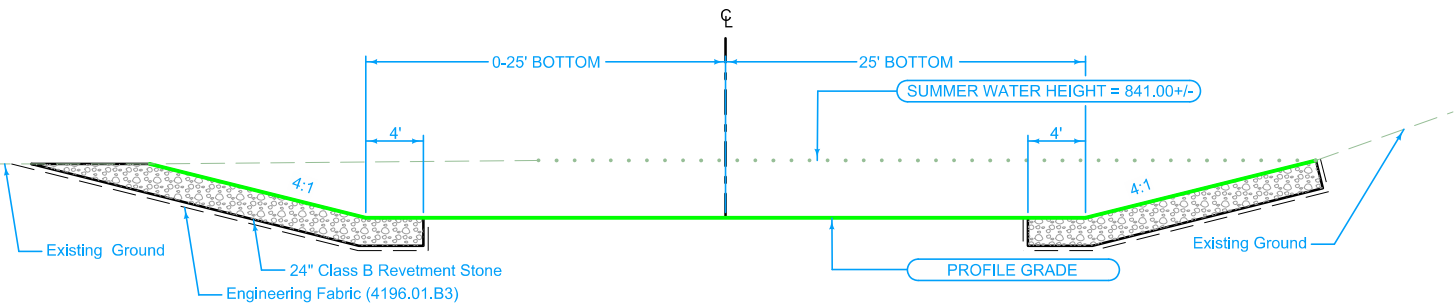
AECOM - 5



TYPICAL DRIVEWAY

BEGIN STATION	END STATION
300+13.60	301+57.40

AECOM - 6



TYPICAL 50' BOAT CHANNEL EXCAVATION

BEGIN STATION	END STATION
1000+00.00	1003+42.00

PROJECT DESCRIPTION

Waterloo, Iowa Marina site development and River Road Trail infill.

**ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)**

Division 1: Participating
Division 2: Non-Participating

Item No.	Item Code	Item	Unit	Estimated						As Built								
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5				
															Quantities			
1	2101-0850001	CLEARING AND GRUBBING	ACRE		0.2						0.2							
2	2102-0425071	SPECIAL BACKFILL	CY	780.0							780.0							
3	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	390.0							390.0							
4	2104-2713020	EXCAVATION, CLASS 13, CHANNEL	CY	2500.0							2500.0							
5	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	700.0							700.0							
6	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMERGRID	SY	1778.0							1778.0							
7	2115-0100000	MODIFIED SUBBASE	CY	401.0	22.0						423.0							
8	2123-7450020	SHOULDER FINISHING, EARTH	STA	5.68							5.68							
9	2301-1033060	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 6 IN.	SY	860.5							860.5							
10	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	355.9							355.9							
11	2303-1131500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX	SY	435.0							435.0							
12	2303-1133500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	SY	435.0							435.0							
13	2304-0101000	TEMPORARY PAVEMENT	SY		212.0						212.0							
14	2312-8260050	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	CY	150.0							150.0							
15	2401-6745356	REMOVAL OF CONCRETE FOOTINGS OF LIGHT POLES	EACH	5							5							
16	2401-6745910	REMOVAL OF SIGN	EACH	15							15							
17	2402-0425031	GRANULAR BACKFILL	TON	180.0							180.0							
18	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	309.4							309.4							
19	2404-7775000	REINFORCING STEEL	LB	26817							26817							
20	2414-6444100	STEEL PIPE PEDESTRIAN HANDRAILS	LF	37							37							
21	2435-0130148	MANHOLE, SANITARY SEWER, SW-301, 48 IN.	EACH		2						2							
22	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.	EACH	1							1							
23	2435-0250700	INTAKE, SW-507	EACH	2							2							
24	2435-0600010	MANHOLE ADJUSTMENT, MINOR	EACH	1							1							
25	2435-0600020	MANHOLE ADJUSTMENT, MAJOR	EACH	1							1							
26	2435-0700010	CONNECTION TO EXISTING MANHOLE	EACH		1						1							
27	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	LF	175.0							175.0							
28	2504-0114008	SANITARY SEWER GRAVITY MAIN, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 8 IN.	LF		200.0						200.0							
29	2507-3250005	ENGINEERING FABRIC	SY	1308.7							1308.7							
30	2507-6800061	REVTMENT, CLASS E	TON		1200.0						1200.0							
31	2510-6745850	REMOVAL OF PAVEMENT	SY	3930.0							3930.0							
32	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EACH		2						2							
33	2511-0302600	RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 6 IN.	SY	505.6							505.6							
34	2511-0302800	RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 8 IN.	SY	44.4							44.4							
35	2511-6745900	REMOVAL OF SIDEWALK	SY	409.0							409.0							
36	2516-8625000	COMBINED CONCRETE SIDEWALK AND RETAINING WALL	CY	234.4							234.4							
37	2523-0000100	LIGHTING POLES, TYPE 1	EACH	4							4							
38	2523-0000100	LIGHTING POLES, TYPE 2	EACH	9							9							
39	2523-0000200	ELECTRICAL CIRCUITS	LF	1311.0							1311.0							
40	2523-0000310	HANDHOLES AND JUNCTION BOXES	EACH	4							4							
41	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	28.5							28.5							
42	2524-9276027	PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	EACH	4							4							
43	2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	19							19							
44	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	41							41.00							
45	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	8.53							8.53							
46	2528-2518182	PERMANENT ROAD CLOSURE, URBAN, SI-182	EACH	1							1							
47	2528-8445110	TRAFFIC CONTROL	LS	0.95	0.05						1.00							
48	2533-4980005	MOBILIZATION	LS	0.95	0.05						1.00							
49	2599-9999005	('EACH' ITEM) BUMPER PADS	EACH	12							12							
50	2599-9999005	('EACH' ITEM) KAYAK LAUNCH SYSTEM	EACH	2							2							
51	2599-9999005	('EACH' ITEM) LITTER RECEPTACLE	EACH	1							1							
52	2599-9999005	('EACH' ITEM) STAINLESS STEEL DOCK CLEATS	EACH	12							12							
53	2599-9999005	('EACH' ITEM) STEEL BENCH SEATING ASSEMBLIES	EACH	2							2							
54	2599-9999010	('LUMP SUM' ITEM) SITE SPECIFIC MATERIALS MANAGEMENT PLAN	LS	1.0							1.00							
55	2599-9999018	('SQUARE YARDS' ITEM) COLORED, TOOLED PORTLAND CEMENT CONCRETE, DARK GREY	SY	551.3							551.3							
56	2599-9999018	('SQUARE YARDS' ITEM) COLORED, TOOLED PORTLAND CEMENT CONCRETE, TAN	SY	89.8							89.8							
57	2599-9999018	('SQUARE YARDS' ITEM) POROUS PAVEMENT	SY	93.3							93.3							
58	2599-9999020	('TONS' ITEM) OFFSITE DISPOSAL OF CONTAMINATED SOILS	TON	25.0							25.0							
59	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1.0							1.0							
60	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	1.0							1.0							
61	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	1.0							1.0							
62	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	835.0							835.0							
63	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	835.0							835.0							
64	2602-0000500	OPEN-THROAT CURB INTAKE SEDIMENT FILTER	LF	60.0							60.0							
65	2602-0000510	MAINTENANCE OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	6							6							

**ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)**

Division 1: Participating
Division 2: Non-Participating

Item No.	Item Code	Item	Unit	Quantities																
				Estimated					As Built											
				Division 1	Division 2	Division 3	Division 4	Division 5	Total	Division 1	Division 2	Division 3	Division 4	Division 5						
66	2602-0000520	REMOVAL OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	6							6									
67	2602-0000530	GRATE INTAKE SEDIMENT FILTER BAG	EACH	5							5									
68	2602-0000540	MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	5							5									
69	2602-0000550	REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	5							5									
70	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	5							5									
71	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1							1									
72	2610-0000120	TREES AUTUMN BLAZE MAPLE, 2.5" CAL. B&B, TYPE 1 PLANTING	EACH	5							5									
73	2610-0000120	TREES PRINCETON AMERICAN ELM, 2.5" CAL. B&B, TYPE 2 PLANTING	EACH	12							12									
74	2610-0000120	TREES SWAMP WHITE OAK, 2.5" CAL. B&B, TYPE 1 PLANTING	EACH	6							6									
75	2610-0000400	WATERING FOR PLANTS	MGAL	7.0							7.00									

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING Refer to D.5 for location.
-	-	-
2	2102-0425071	SPECIAL BACKFILL Special backfill is for replacement of Contaminated Soil and Class 10, waste. Expected waste from Sanitary - 352 CY, Storm - 297 CY, Lights - 38 CY, Pavement - 93 CY.
-	-	-
3	2102-2710090	EXCAVATION, CLASS 10, WASTE Class 10 Waste from top soil removal, tree installation, light base, storm sewer and sanitary excavation. Assumes half of all material removal can be disposed of by Contractor by normal methods. Remaining half to be disposed of in accordance with Site Specific Materials Management Plan.
-	-	-
4	2104-2713020	EXCAVATION, CLASS 13, CHANNEL Refer to B-Sheets and D.5 for locations and details. All material excavated shall be disposed of by contractor offsite.
-	-	-
5	2105-8425005	TOPSOIL, FURNISH AND SPREAD Item is for 6" topsoil where seeding is necessary. Contractor to supply a material that is free of all clods, lumps, roots and other undesirable material.
-	-	-
6	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMERGRID Geogrid to be placed below all PCC and HMA pavement, including temporary pavement. Geogrid shall be Tensar TX140, Alliance Gator Grid GG50-50, Tencate Mirafli BXG110 or approved equivalent.
-	-	-
7	2115-0100000	MODIFIED SUBBASE Item is for 4" subbase under all colored sidewalk, temporary paving, and trail and 6" subbase under driveway and parking lot paving.
-	-	-
8	2123-7450020	SHOULDER FINISHING, EARTH
-	-	-
9-10	2301-1033060 2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 6 IN. STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN. See B-Sheets for details and locations. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications. Use Class 3 Durability Aggregate.
-	-	-
11-12	2303-1131500 2303-1133500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT Item is for the 6" HMA infill for the old River Road median removal and driveway to Commercial Street. Base course - 4 IN. Surface course - 2 IN. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications.
-	-	-
13	2304-0101000	TEMPORARY PAVEMENT See D-Sheets & L-sheets for locations and details. Shall be 6" HMA pavement. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications.
-	-	-
14	2312-8260050	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE Item is for rock between proposed pavement and existing pavement to make up grade difference between the two. See-D-Sheets for locations. Item is also for placement in riprap areas adjacent to trail as shown on Detail AECOM-4.
-	-	-

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
15	2401-6745356	REMOVAL OF CONCRETE FOOTINGS OF LIGHT POLES A. Refer to Tabulation 110-16 for details. Footing holes shall be backfilled within 24 hours after removing footings. Entire footing shall be removed. B. Method of Measurement: The number of light pole footings removed will be counted. C. Basis of Payment: For each light pole footing removed the Contractor will be paid the contract unit price.
-	-	-
16	2401-6745910	REMOVAL OF SIGN See D.3 for locations
-	-	-
17	2402-0425031	GRANULAR BACKFILL Granular backfill for dock area shall meet gradation 13A.
-	-	-
18-19	2403-0100000 2404-7775000	STRUCTURAL CONCRETE (MISCELLANEOUS) REINFORCING STEEL See D.5 and U-Sheets for location and details. Structural Concrete is for all concrete for the kayak, boat dock, and concrete steps. Reinforcing Steel shall be Grade 60 and is for combined sidewalk/retaining wall, dock concrete and concrete steps. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications. Use Class 3 Durability Aggregate.
-	-	-
20	2414-6444100	STEEL PIPE PEDESTRIAN HANDRAILS See U.5 for details.
-	-	-
21	2435-0130148	MANHOLE, SANITARY SEWER, SW-301, 48 IN.
22	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.
23	2435-0250700	INTAKE, SW-507
24	2435-0600010	MANHOLE ADJUSTMENT, MINOR For adjustment of manhole at 503+80.
-	-	-
25	2435-0600020	MANHOLE ADJUSTMENT, MAJOR For adjustment of intake at 201+40 with manhole top.
-	-	-
26	2435-0700010	CONNECTION TO EXISTING MANHOLE Item is for connection to existing sanitary manhole.
-	-	-
27	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.
28	2504-0114008	SANITARY SEWER GRAVITY MAIN, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 8 IN. See M-Sheets for locations and details.
-	-	-
29	2507-3250005	ENGINEERING FABRIC
30	2507-6800061	REVTMENT, CLASS E See D.5 for locations. Shall be placed on slopes of channel excavation. No recycled concrete shall be used.
-	-	-

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
31	2510-6745850	REMOVAL OF PAVEMENT See D.3 for locations. Existing pavement consists of variable thickness (6-12") PCC, 3-4" HMA and 6-12" PCC with 3-4" HMA overlay.
-	-	-
32	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES See D.3 for locations
-	-	-
33-34	2511-0302600 2511-0302800	RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 6 IN. RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 8 IN. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications. Use Class 3 Durability Aggregate.
-	-	-
35	2511-6745900	REMOVAL OF SIDEWALK See D.3 for locations. Existing sidewalk is nominal 4" PCC.
-	-	-
36	2516-8625000	COMBINED CONCRETE SIDEWALK AND RETAINING WALL See B, D, and U-Sheets for locations and details. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications. Use Class 3 Durability Aggregate.
-	-	-
37-40	2523-0000100 2523-0000100 2523-0000200 2523-0000310	LIGHTING POLES, TYPE 1 LIGHTING POLES, TYPE 2 ELECTRICAL CIRCUITS HANDHOLES AND JUNCTION BOXES See P-Sheets for locations and details.
-	-	-
41-46	2524-9276010 2524-9276027 2524-9325001 2527-9263109 2527-9263180 2528-2518182	PERFORATED SQUARE STEEL TUBE POSTS PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY TYPE A SIGNS, SHEET ALUMINUM PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED PAVEMENT MARKINGS REMOVED PERMANENT ROAD CLOSURE, URBAN, SI-182 See N-Sheets and C-Sheets for locations and details.
-	-	-
47	2528-8445110	TRAFFIC CONTROL See J.1 for Details.
-	-	-
48	2533-4980005	MOBILIZATION
-	-	-
49-50	2599-9999005 2599-9999005	('EACH' ITEM) BUMPER PADS ('EACH' ITEM) KAYAK LAUNCH SYSTEM A. See U-Sheets for locations and details. B. Method of Measurement - The number of each item satisfactorily installed will be counted. C. Basis of Payment - For each item installed the Contractor will be paid the contract unit price.
-	-	-
51	2599-9999005	('EACH' ITEM) LITTER RECEPTACLE A. See R-Sheets for locations and details B. Method of Measurement - The number of each item satisfactorily installed will be counted. C. Basis of Payment - For each item installed the Contractor will be paid the contract unit price.
-	-	-
52	2599-9999005	('EACH' ITEM) STAINLESS STEEL DOCK CLEATS A. See U-Sheets for locations and details. B. Method of Measurement - The number of each item satisfactorily installed will be counted. C. Basis of Payment - For each item installed the Contractor will be paid the contract unit price.
-	-	-
53	2599-9999005	('EACH' ITEM) STEEL BENCH SEATING ASSEMBLIES A. See R-Sheets for locations and details B. Method of Measurement - The number of each item satisfactorily installed will be counted. C. Basis of Payment - For each item installed the Contractor will be paid the contract unit price.
-	-	-
54	2599-9999010	('LUMP SUM' ITEM) SITE SPECIFIC MATERIALS MANAGEMENT PLAN Refer to Special Provisions.
-	-	-
55-56	2599-9999018 2599-9999018	('SQUARE YARDS' ITEM) COLORED, TOOLED PORTLAND CEMENT CONCRETE, DARK GREY ('SQUARE YARDS' ITEM) COLORED, TOOLED PORTLAND CEMENT CONCRETE, TAN Refer to Tabulation 113 1, B-Sheets and Special Provisions for Colored, Tooled Portland Cement Concrete for details. Scarify and recompact 12 IN with Type A compaction shall be required under all colored concrete and is considered incidental to this item. Certified plant inspection shall be required as specified in Section 2521 of the IDOT Standard Specifications. Use Class 3 Durability Aggregate.
-	-	-
57	2599-9999018	('SQUARE YARDS' ITEM) POROUS PAVEMENT For use in the Tree Planting Area. Refer to R-Sheets. Method of Measurement. The area of porous pavement satisfactorily completed shall be measured by the Engineer. Basis of Payment. For each SY measured, the contractor will be paid the contract unit price, which shall be considered full compensation for all tools, material, equipment, and labor necessary to complete the work. No deduction will be made for spacing around the tree.
-	-	-

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
58	2599-9999020	('TONS' ITEM) OFFSITE DISPOSAL OF CONTAMINATED SOILS Items is for removal and proper disposal of contaminated soil, in accordance with the Site Specific Materials Management Plan. Refer to Special Provisions for site materials management plan.
-	-	-
59	2601-2634105	MULCHING, BONDED FIBER MATRIX A. A Bonded Fiber Matrix shall be applied as the mulch for all areas designated as "Seeding and Fertilizing (Urban)" and in other areas prior to final grading. B. Bonded Fiber Matrix will not be applied immediately prior to the sod being applied. C. The seed and fertilizer for the area to be covered shall be applied before the Bonded Fiber Matrix Hydraulic Mulch application. D. Application rate shall be a minimum of 300 lbs per acre. E. Method of Measurement. The area of mulching satisfactorily completed shall be measured by the Engineer. F. Basis of Payment. For each acre measured, the contractor shall be paid the contract unit price, which shall be considered full compensation for all tools, material, equipment, and labor necessary to complete the work.
-	-	-
60	2601-2636044	SEEDING AND FERTILIZING (URBAN) All areas disturbed by construction activities, and additional adjacent areas as directed by the Engineer, shall be hydroseeded with urban seed mixture as per Section 2601. Submit seed mixture and proposed fertilizer to engineer for approval. The following additional requirements shall be met prior to acceptance of the seeding: 1. Contractor shall maintain seeded lawn areas until the established seed has been accepted by the Engineer. Maintain lawns by watering, fertilizing, weeding, mowing, and re-grading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas. 2. If seeded areas become gullied or otherwise damaged during the period of establishment, the disturbed area shall be repaired to reestablish the grade and the condition of the soil, and shall be reseeded at the original seed rate. Topsoil to repair gullied areas shall be placed and compacted in six (6) inch lifts. 3. The Contractor shall be responsible for providing supplemental water as needed to promote healthy seedling establishment. Adjust watering to prevent wilting, puddling and displacement of seed or mulch. 4. Acceptance of seeded lawn areas shall be based upon the following criteria: A. Seeded lawn areas shall be healthy, uniform and a close stand of grass shall be established. B. The seeded lawn areas shall be free of weeds and surface irregularities. In any 10 square foot area within the seeded lawn, coverage shall exceed 95%. Scattered bare spots shall not exceed an area 4 inches by 4 inches. C. Grass shall not exceed 3" in height at time of acceptance. D. Seeded lawn areas which do not meet the requirements of acceptance at the time of inspection shall be re-seeded and maintained as required, until accepted, at no additional cost to Owner.
-	-	-
61-69	2601-2642120 2602-0000312 2602-0000350 2602-0000500 2602-0000510 2602-0000520 2602-0000530 2602-0000540 2602-0000550	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN) PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE OPEN-THROAT CURB INTAKE SEDIMENT FILTER MAINTENANCE OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER REMOVAL OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER GRATE INTAKE SEDIMENT FILTER BAG MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG See RR-Sheets for locations and details.
-	-	-
70	2602-0010010	MOBILIZATIONS, EROSION CONTROL
-	-	-
71	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
-	-	-
72-75	2610-0000120 2610-0000120 2610-0000120 2610-0000400	TREES AUTUMN BLAZE MAPLE, 2.5" CAL. B&B, TYPE 1 PLANTING TREES PRINCETON AMERICAN ELM, 2.5" CAL. B&B, TYPE 2 PLANTING TREES SWAMP WHITE OAK, 2.5" CAL. B&B, TYPE 1 PLANTING WATERING FOR PLANTS Refer to R-Sheets for landscaping details. Price bid shall include all work necessary to install trees in accordance with the plans and notes (including percolation test, wood mulch, fertilizer, planting soil mix and excavation). For the number of trees installed in accordance with the plans, the contractor shall be paid the contract unit price. Establishment period for all trees shall be 2 growing seasons. During contract period, care for trees in accordance with 2610.I
-	-	-

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITIES

- A. Designer:
 1. Prepares Base PPP included in the project plan.
 2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
 3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
 1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
 2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
 3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
 4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
 5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
 6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
 7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
 8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
 1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or performing work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
 2. Implement good housekeeping practices according to Paragraph III, C, 2.
- D. RCE/Project Engineer:
 1. Is Project Storm Water Manager.
 2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
 3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
 4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
 5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
 6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
 7. Is familiar with the Project PPP and storm water site map.
 8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
 9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
 10. Is signature authority on Notice of Discontinuation.
 11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
 12. Makes information to determine permit compliance available to the DNR upon their request.
- E. Inspector:
 1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
 2. Makes information to determine permit compliance available to the DNR upon their request.
 3. Conducts joint required inspections of the site with the contractor/subcontractor.
 4. Completes an inspection report after each inspection.
 5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of a PCC Sidewalk/Trail in Waterloo, IA from Parker St to Washington St along U.S. 63.
- B. This PPP covers approximately 2.0 acres with an estimated 1.5 acres being disturbed. The portion of the PPP covered by this contract has 1.5 acres disturbed.
- C. The PPP is located in an area of Keynyon-Clyde-Floyd soil association. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.80.
- D. Storm Water Site Map is located in the EC sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been

POLLUTION PREVENTION PLAN

installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.
F. Runoff from this work will flow into an existing storm sewer system, ultimately to the Cedar River.

III. CONTROLS

- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
 - B. Preserve vegetation in areas not needed for construction.
 - C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.
- 1. EROSION AND SEDIMENT CONTROLS**
- a. Stabilization Practices
 - 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
 - 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
 - a) Permanently ceased on any portion of the site, or
 - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
 - 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
 - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or EC sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or EC sheets.
 - 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
 - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or EC sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.
 - b. Structural Practices
 - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
 - 2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or EC sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or EC sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or EC sheets.
 - c. Storm Water Management

Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or EC sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
- 2. OTHER CONTROLS**
- Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
- a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
 - b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
 - c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
 - d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
 - e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
 - f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
 - g. Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
 - h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environmental laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
 - i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
 - j. Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
- 3. APPROVED STATE OR LOCAL PLANS**
- During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
1. Date of the inspection.
 2. Summary of the scope of the inspection.
 3. Name and qualifications of the personnel making the inspection.
 5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 6. Major observations related to the implementation of the PPP.
 7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

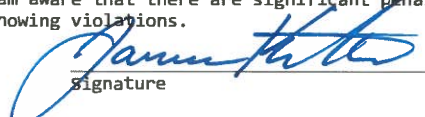
Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
- C. Fieldbook Entries - This contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative authorized to sign various storm water documents.

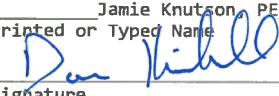
CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



 Signature

Jamie Knutson, PE
 Printed or Typed Name



 Signature

Daniel Kimball, PE

INDEX OF TABULATIONS			111-25 10-18-11
Tabulation	Tabulation Title	Sheet No.	
C Sheets			
100-1C	ESTIMATED PROJECT QUANTITIES (UP TO A 5 DIVISION PROJECT)	C.1 - C.2	
100-1D	PROJECT DESCRIPTION	C.1	
100-4A	ESTIMATE REFERENCE INFORMATION	C.2 - C.3	
100-10	FLOATING SILT CURTAINS	C.6	
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.6	
100-24	PCC PAVEMENT	C.7	
100-36	OPEN-THROAT CURB INTAKE SEDIMENT FILTER	C.6	
100-37	GRATE INTAKE SEDIMENT FILTER BAG	C.6	
105-4	STANDARD ROAD PLANS	C.6	
110-12	POLLUTION PREVENTION PLAN	C.4 - C.4	
111-25	INDEX OF TABULATIONS	C.6	
108-16	COMBINED CONCRETE SIDEWALK AND RETAINING WALL	C.6	
108-22	PAVEMENT MARKING LINE TYPES	C.7	
190-51	MATERIALS FOR TYPE 'A' SIGNS	C.7	

STANDARD ROAD PLANS			105-4 10-18-11
The following Standard Road Plans apply to construction work on this project.			
Number	Date	Title	
DR-121	10-17-17	Connected Pipe Joints	
EC-202	10-21-14	Floating Silt Curtain	
EC-204	10-19-21	Perimeter and Slope Sediment Control Devices	
EC-303	10-19-21	Stabilized Construction Entrance	
EC-602	04-21-20	Open-Throat Curb Intake Sediment Filter	
LI-103	04-20-21	Conduit and Precast Handholes	
LI-201	04-18-17	Light Pole Foundation	
MI-220	10-20-15	Detectable Warnings and Pedestrian Ramp	
PM-110	04-21-20	Line Types	
PV-101	04-21-20	Joints	
PV-103	04-21-20	Manhole Boxouts in PCC Pavement	
SI-101	04-19-16	Locations - Type 'A' Signs	
SI-131	10-18-16	Installation - Type 'A' Signs	
SW-101	04-17-18	Trench Bedding and Backfill Zones	
SW-102	04-20-21	Rigid Gravity Pipe Trench Bedding	
SW-301	04-20-21	Circular Sanitary Sewer Manhole	
SW-401	04-20-21	Circular Storm Sewer Manhole	
SW-507	04-21-20	Single Open-Throat Intake, Small Box	
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	
TC-202	10-19-21	Work Within 15 ft of Traveled Way	
TC-211	10-15-19	Lane Closure on Low Volume Roadway	
TC-228	10-16-18	Lane Closure Involving TWLTL	
TC-601	10-15-19	Pedestrian Detour	

COMBINED CONCRETE SIDEWALK AND RETAINING WALL												108-16 10-19-10
See MI-221												
Location			Retaining Wall			Sidewalk		Concrete		Porous Backfill	Reinforcing Steel	
Station to Station		Side	Type	Height, H	Thickness	Width, W	Thickness	Retaining Wall	Sidewalk & Footing			
				FT	FT	FT	FT	CY	CY	CY	LB	
100+18.45	101+00.00		B	0 to 4	0.7	11.0	1.0	4.0	42.0	2.0	2360	
101+00.00	103+85.00		B	4.0	0.7	11.0	1.0	28.1	146.9	7.0	9177	
103+85.00	104+08.70		B	4 to 0	0.7	11.0	1.0	1.2	12.2	0.6	697	
									33.3	201.1	9.6	12234

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE							100-19 04-19-16
Possible Standards: EC-204							
Location			Length of Installation			Remarks	
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia		
			LF	LF	LF		
300+35	302+35	RT		200.0			
100+00	104+00	LT		445.0			
104+00	105+90	RT		190.0			

OPEN-THROAT CURB INTAKE SEDIMENT FILTER						100-36 10-16-18
Possible Standard: EC-602						
Location Station	Side	Installation	Maintenance	Removal	Remarks	
		LF	EACH	EACH		
River Rd		20.0	2	2		
Old River Rd		40.0	4	4		

GRATE INTAKE SEDIMENT FILTER BAG						100-37 04-18-17
Possible Detail: 570-7						
Location Station	Side	Installation	Maintenance	Removal	Remarks	
		EACH	EACH	EACH		
Marina Parkin		5	5	5		

FLOATING SILT CURTAINS						100-10 10-21-14
Refer to EC-202						
Station	Hanging	Containment	Clean-out (Containment)	Maintenance of Floating Silt Curtain	Remarks	
	LF	LF	LF	LF		
1004+14	250.0	250.0	500.0	250.0		

PAVEMENT MARKING LINE TYPES

See PM-110

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

*BCY4 - Place on the same side of the roadway to match existing markings near the project.

**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.

BCY4: Broken Centerline (Yellow) @ 0.25

DCY4: Double Centerline (Yellow) @ 2.00

NPY4: No Passing Zone Line (Yellow) @ 1.25

BLW4: Broken Lane Line (White) @ 0.25

ELW4: Edge Line Right (White) @ 1.00

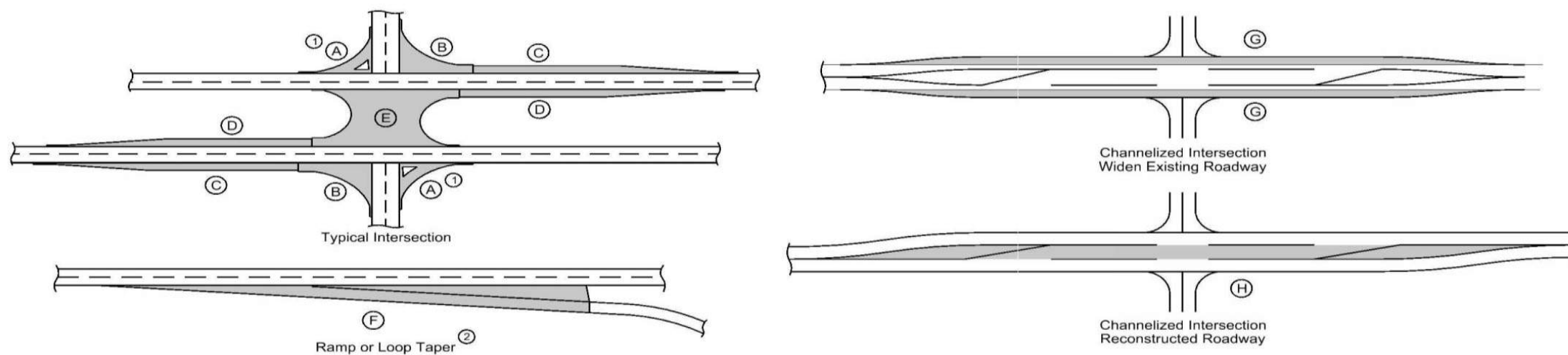
ELY4: Edge Line Left (Yellow) @ 1.00

Location			Length by Line Type (Unfactored)																	Remarks
Road ID	Station to Station	Dir. of Travel	Marking Type	Side	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4										
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
			Waterborne/Solvent Paint						3329.00											

MATERIALS FOR TYPE 'A' SIGNS

TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION STATION	WOOD POSTS		PERFORATED SQUARE STEEL TUBE						Steel Rect. Tube			TYPE A SIGN MOUNTING BRACKETS					INSTALLATION			REMARKS		
				NO. OF POSTS	4 x 6		LEG 1 FT	LEG 2 FT	LEG 3 FT	ANCHOR			NO. OF POSTS	POST LENGTH FT	ANCHORS EACH	ONE POST BRACKET	TWO POST	AUXILIARY	H	F	F1	TYPE		DIM 'X' FT	SEE SIGNING NOTES
					LEG 1 FT	LEG 2 FT				CONC	SOIL	SLIPBASE													
R4-7, OMI-2	S-1	EB	2514+43			11.5														3	CENTERED	IA, PP			
R6-1R	S-2	NB, SB	2518+57			8.5														3	CENTERED	IA, PP			
R2-1	S-3	EB	2518+75			10.5														1	3	IA, PP			
R1-1	S-4	SB	2520+00			12.5														1	4	IA, PP			

PCC PAVEMENT



- ① Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
- ② Refer to PV-410, PV-411, PV-412, and PV-414.
- ③ Quantity includes Pavement Header.

Road Identification	Location Direction of Travel	Station to Station	Mainline		Area ③								Total Area By Pavement Thickness		Special Backfill TONS	Modified Subbase CY	Granular Subbase SY	Remarks							
			Width FT	Length FT	Area SY	A ① SY	B SY	C SY	D SY	E SY	F ② SY	G SY	H SY	6 IN SY					8 IN SY						
			FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY					SY						
Drive 1	Both	300+31.30	301+57.40	26.0	126.1	355.9																			
Park 1	Both	200+00.00	202+07.00	26.0	VAR.	587.1				109.0	164.0														

SURVEY SYMBOLS

- FHD Fire Hydrants
- TVP TV Pedestal
- FLg Flag Poles
- BB Billboard
- SIGN SI Sign
- MM Mile Marker Post
- INB Storm Sewer Beehive Intake
- TEV Evergreen Tree
- TDC Tree Deciduous
- TFR Tree Fruit
- SHR Shrub
- PPA Power Pole Co. 1
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- TSG Traffic Signal
- OUT Tile Outlet
- TSL Traffic Signal and Luminaire
- SIGN SL Speed Limit Sign
- GP Guard Post (Less Than 4 Posts)
- MIS Miscellaneous
- TPD Telephone Pedestal
- GV Gas Valve
- EB Electrical Box
- UB Utility Box
- WV Water Valve
- PR Electric Riser Pole
- LUM Luminaire
- CUL Culvert
- LIN Miscellaneous Line
- Til Tile Line
- GDL Guard Rail Steel
- ROC Rock Outcropping
- BLD Building or Foundation
- CON Concrete or A/C Slab
- CU Back of Curb
- GU Gutter In Front of Curb
- ENP Edge Paved Entrance & Park Lot
- SWK Sidewalk
- EP Edge of Paved Roads (ML or SR)
- ENT Centerline BL of Entrance
- SH Paved Shoulder
- SNP Unpaved Shoulder
- DU Centerline Draw or Stream (Up)
- BNK Stream Bank
- EG Edge of Gravel Road
- RIP Rip-Rap
- DIK Centerline of Dike or Dam
- TLNL Tree Line Left
- TLNR Tree Line Right
- FW Wire Fence
- FWD Wood Fence
- TDL Traffic Detection Loop
- HDG Hedge Row
- D Centerline Draw or Stream (Down)
- RET Retaining Walls

UTILITY LEGEND

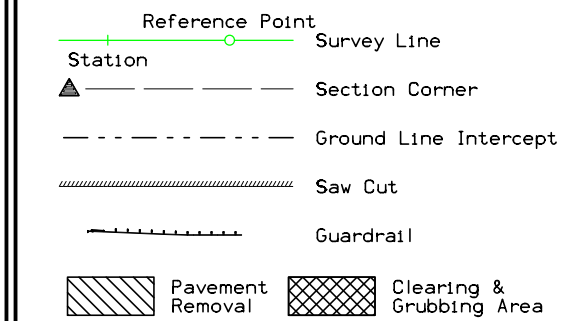
- E1 - ELC Underground Electric Conductor - MidAmerican
- E2 - ELC Underground Electric Secondary Conductor - MidAmerican
- F02 - FOC Underground Fiber Optic - UPN
- F03 - FOC Underground Fiber Optic - City of Waterloo
- F04 - FOC Underground Fiber Optic - City of Waterloo & UPN
- F05 - FOC Underground Fiber Optic - Mediacom
- F06 - FOC Underground Fiber Optic - Aureon
- F07 - FOC Underground Fiber Optic - Century Link
- G - GC Gas - MidAmerican
- San. - SANC Sanitary Sewer - City of Waterloo
- TV - CTVC Cable Tv - Mediacom
- W - WLC Underground Water Line - Waterloo Water Works

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design	Color No.	Description
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING			
Design	Color No.	Description	
Yellow	(4)		Highlight for Critical Notes or Features
Red	(3)		Delineates Restricted Areas
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design	Color No.	Description
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right



RIGHT-OF-WAY LEGEND

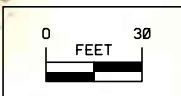
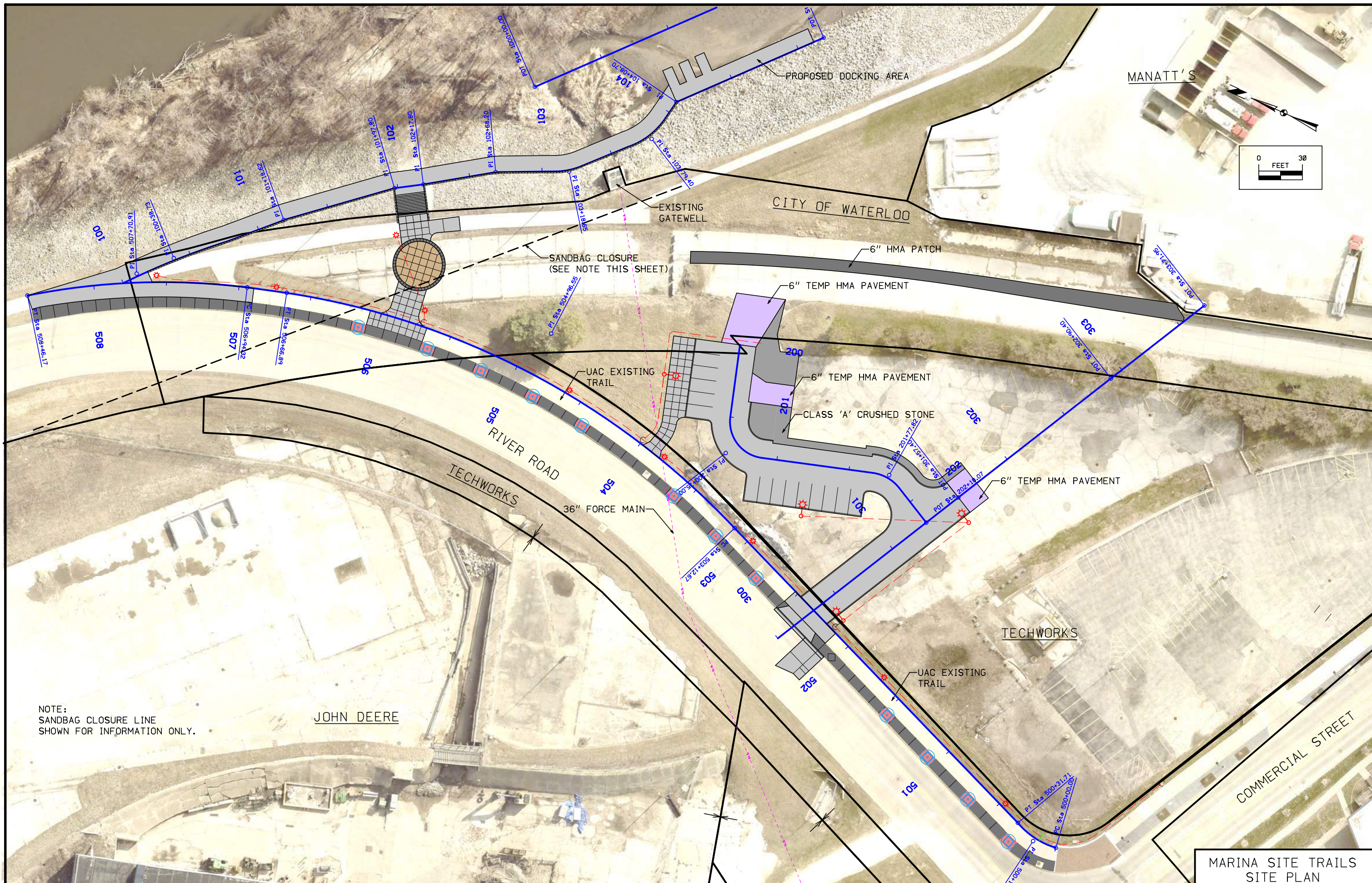
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

CEDAR RIVER MARINA RECREATIONAL TRAIL ENHANCEMENTS - UTILITY CONTACT LIST CITY OF WATERLOO, IOWA

NAME	TYPE	LINE CODE	CONTACT	EMAIL	ADDRESS	CITY	STATE	ZIP	PHONE #
Aureon Network Services	Local Fiber Optic	FO6	Jeff Klocko	jeff.klocko@aureon.com	7760 Office Plaza Drive South	West Des Moines	IA	50266	515-830-0445
CenturyLink	Communications	FO7	Brent Giese	Brent.Giese@CenturyLink.com	2103 E. University Ave	Des Moines	IA	50317	515-201-4520
Terra Technologies (rep CenturyLink)	Communications	FO7	Bandon Aman	baman@terratechllc.net					701-866-7952
MediaCom	Cable TV	TV & FO5	Kevin Parker	kparker@mediacomcc.com	4010 Alexandra Drive	Waterloo	IA	50702	319-240-4987
MidAmerican Energy Company	Electric Distribution	E1 & E2	Chris Wolfe	CTWolfe@midamerican.com	260 Fairview Ave	Waterloo	IA	50703	319-291-4738
MidAmerican Energy Company	Electric Distribution	E1 & E2	David Kline	dkline@midamerican.com	260 Fairview Ave	Waterloo	IA	50703	319-291-4726
MidAmerican Energy Company	Gas Distribution	G	Karen Speicher	kdspeicher@midamerican.com	260 Fairview Ave	Waterloo	IA	50703	319-291-4728
Unite Private Networks	Local Fiber Optic	FO2 & FO4	Dan Hogan	Dan.Hogan@upnfiber.com	13300 Hickman Road	Des Moines	IA	50325	515-326-4237
Sanitary and Storm Sewer	Waterloo Waste Management	San.	Randy Bennett	randy.bennett@waterloo-ia.org	3505 Easton Ave.	Waterloo	IA	50702	319-291-4445
Waterloo Water Works	Water	W	Rick Wilberding	RICK.WILBERDING@WATERLOO-IA.ORG					319-240-5013
Waterloo Water Works	Water	W	Brian Johnson	BRIAN.JOHNSON@WATERLOO-IA.ORG					
Waterloo Water Works	Water	W	Matt Mahler	MATT.MAHLER@WATERLOO-IA.ORG	325 Sycamore Street	Waterloo	IA	50703	319-232-6280
gba System Integrators	Traffic Signal Fiber Optic	FO3 & FO4	James L. Gilbert	jgilbert@gbasi.com	9801 Renner Boulevard, Suite 300	Lenexa	KS	66219-9745	913 492-0400
City of Waterloo, Traffic	Traffic Signal Fiber Optic	FO3 & FO4	Matt Vlasak	matt.vlasak@waterloo-ia.org	625 Glenwood Street	Waterloo	IA	50703	319-291-4440

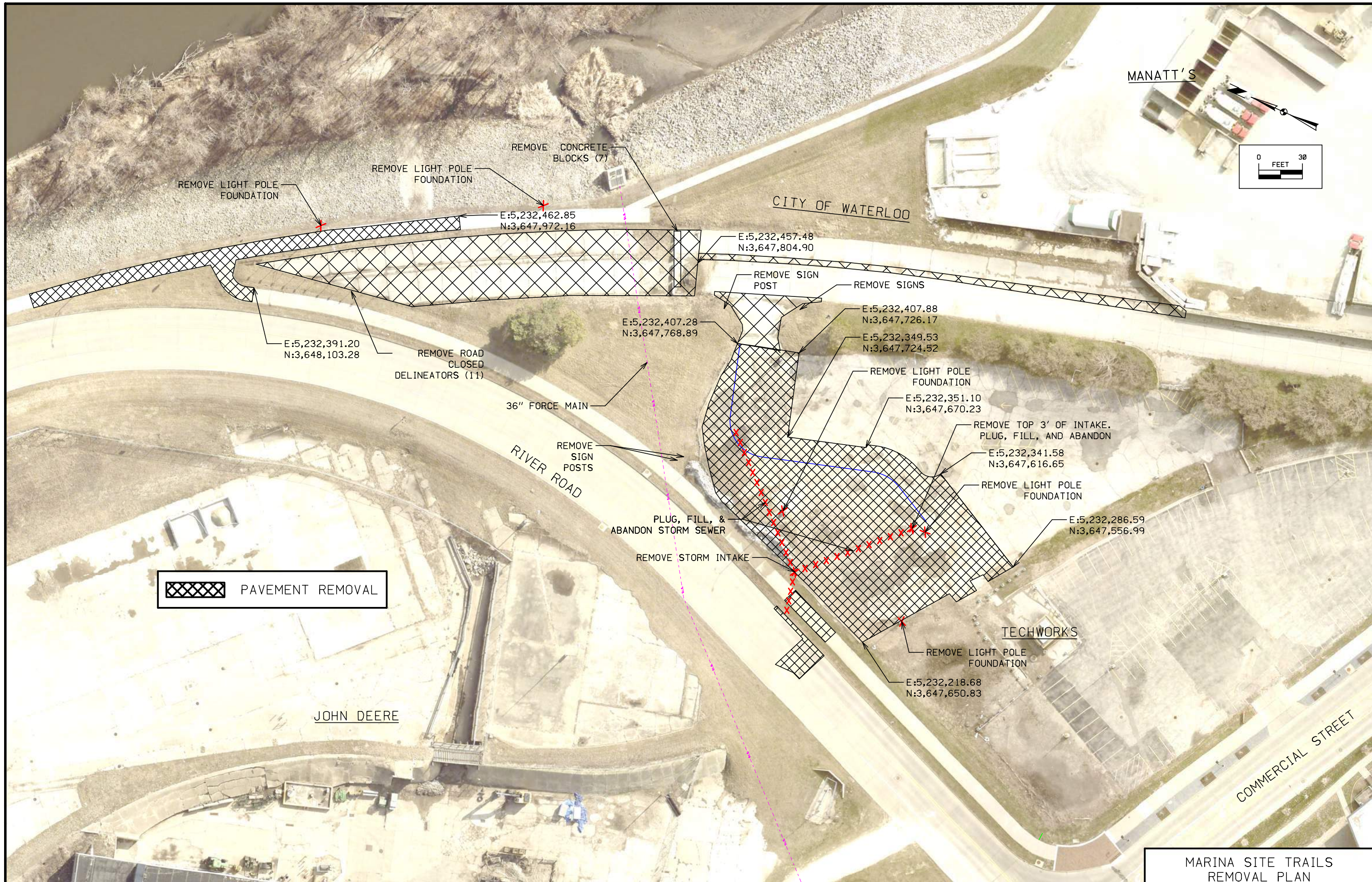
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, H, & K)



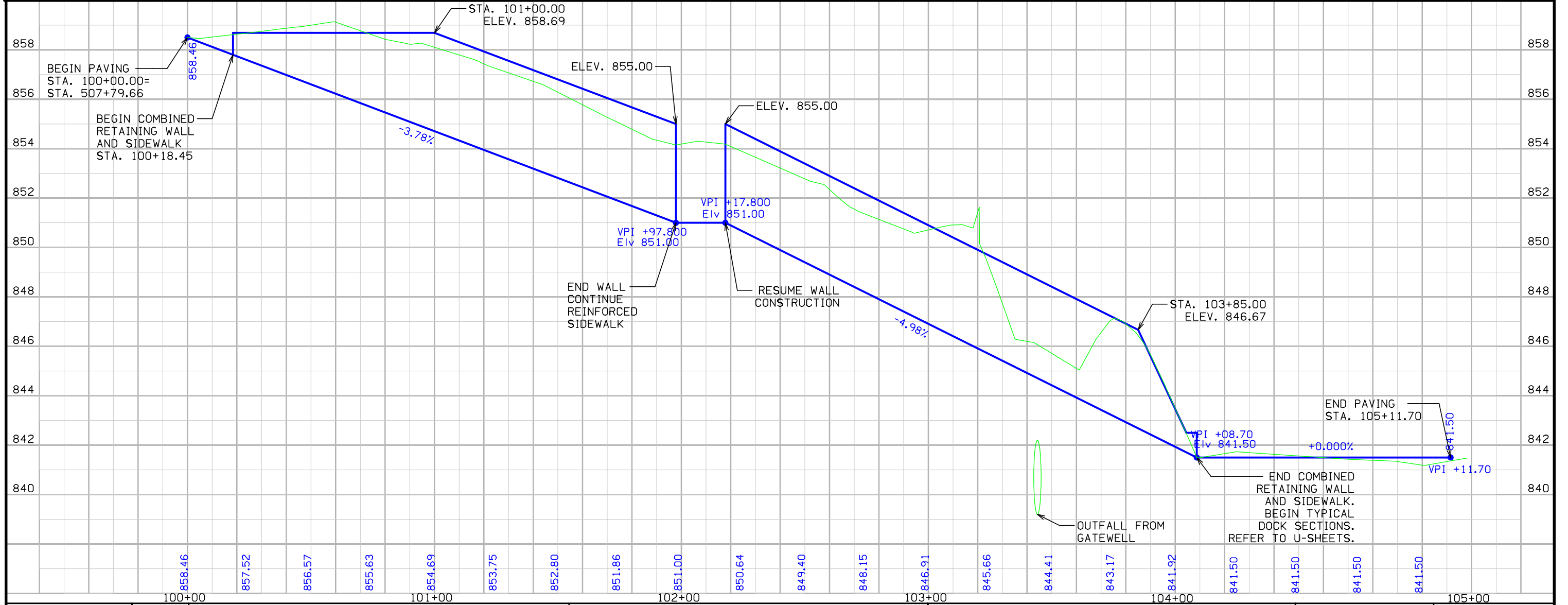
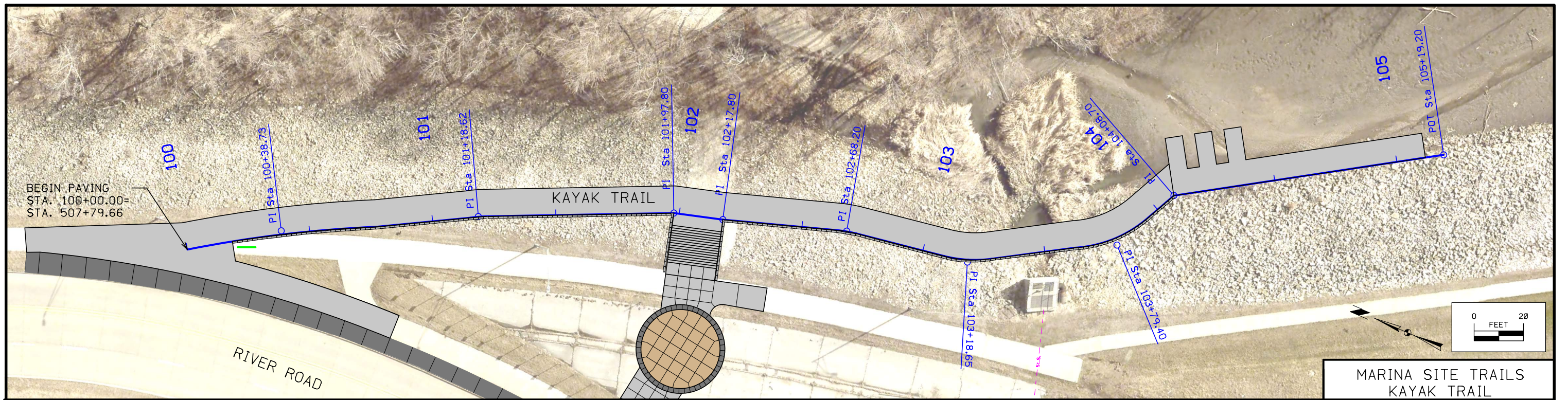
NOTE:
SANDBAG CLOSURE LINE
SHOWN FOR INFORMATION ONLY.

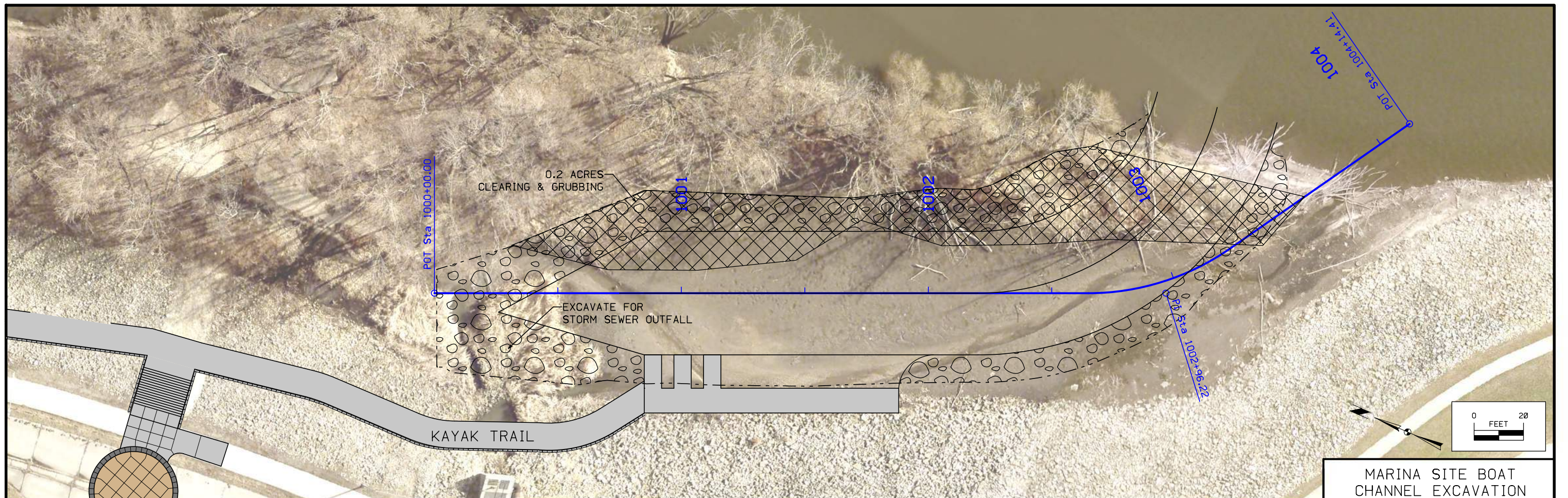
MARINA SITE TRAILS
SITE PLAN



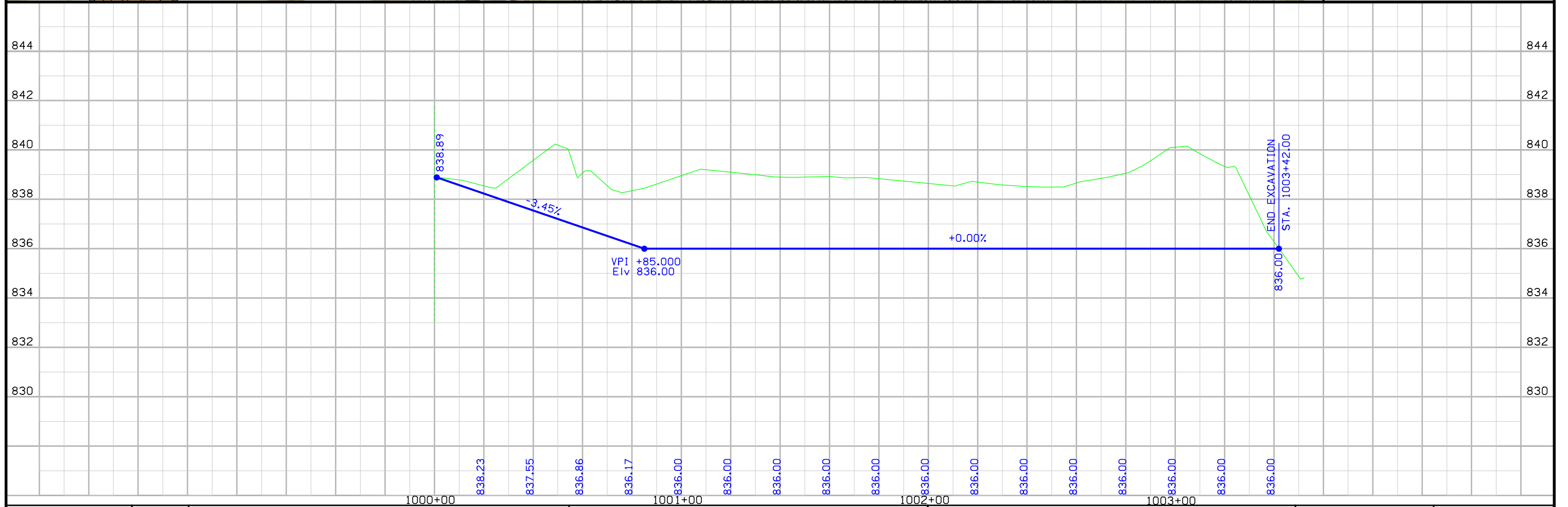
 PAVEMENT REMOVAL

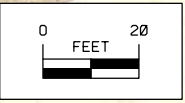
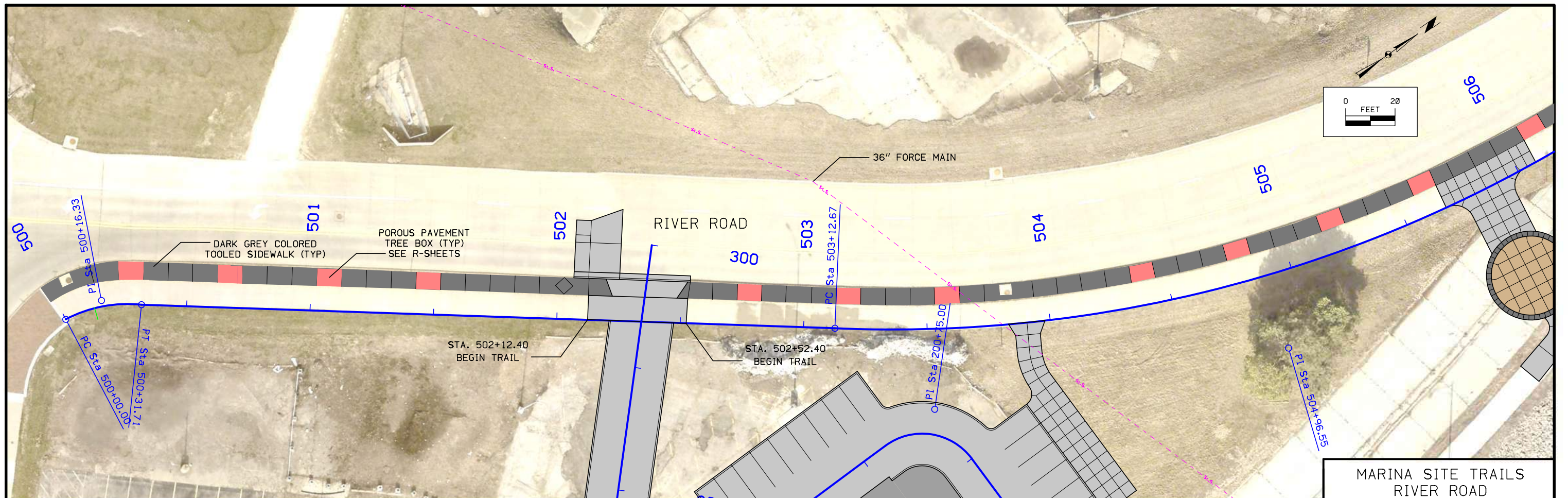
MARINA SITE TRAILS
REMOVAL PLAN



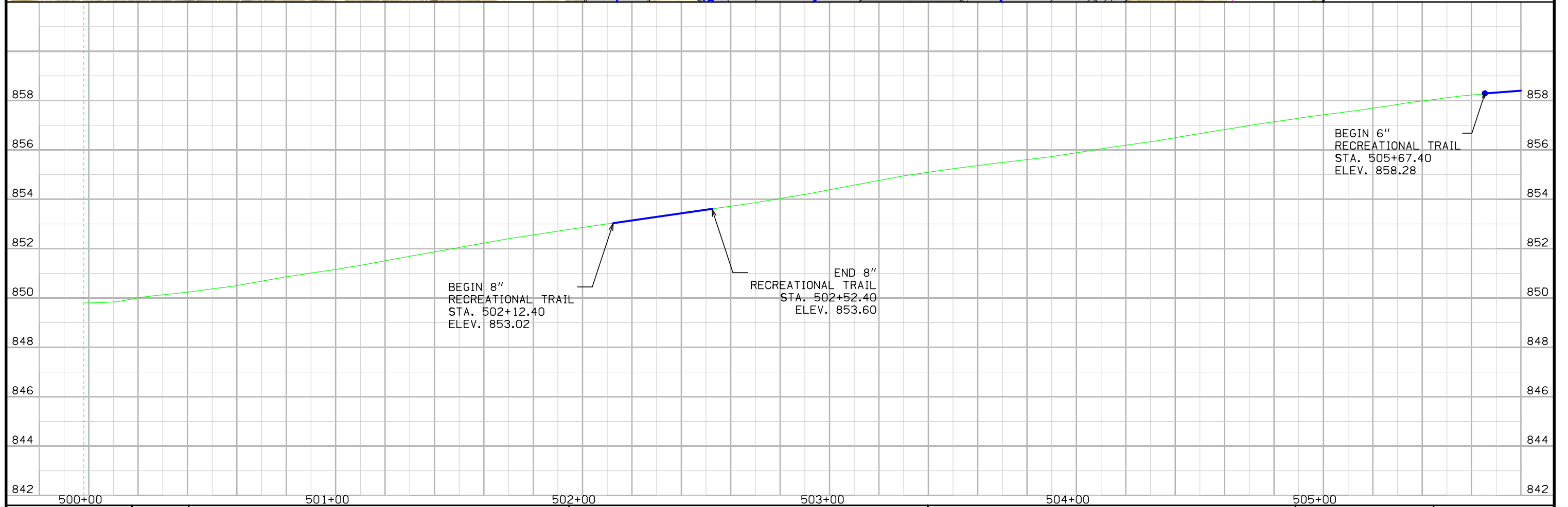


MARINA SITE BOAT CHANNEL EXCAVATION

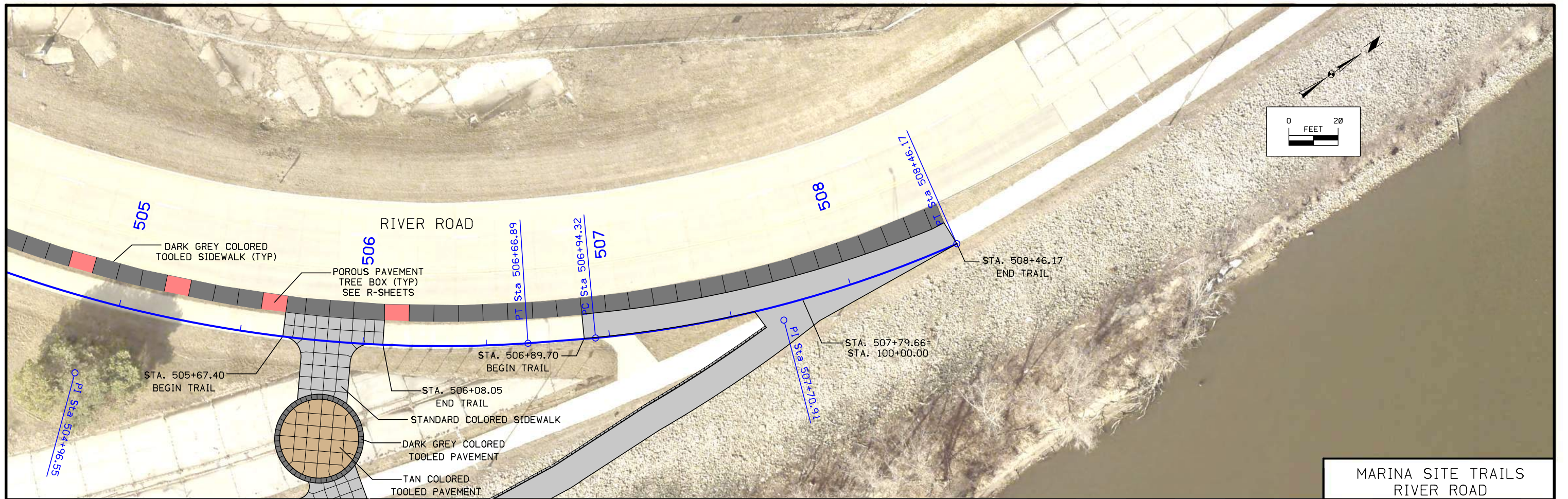




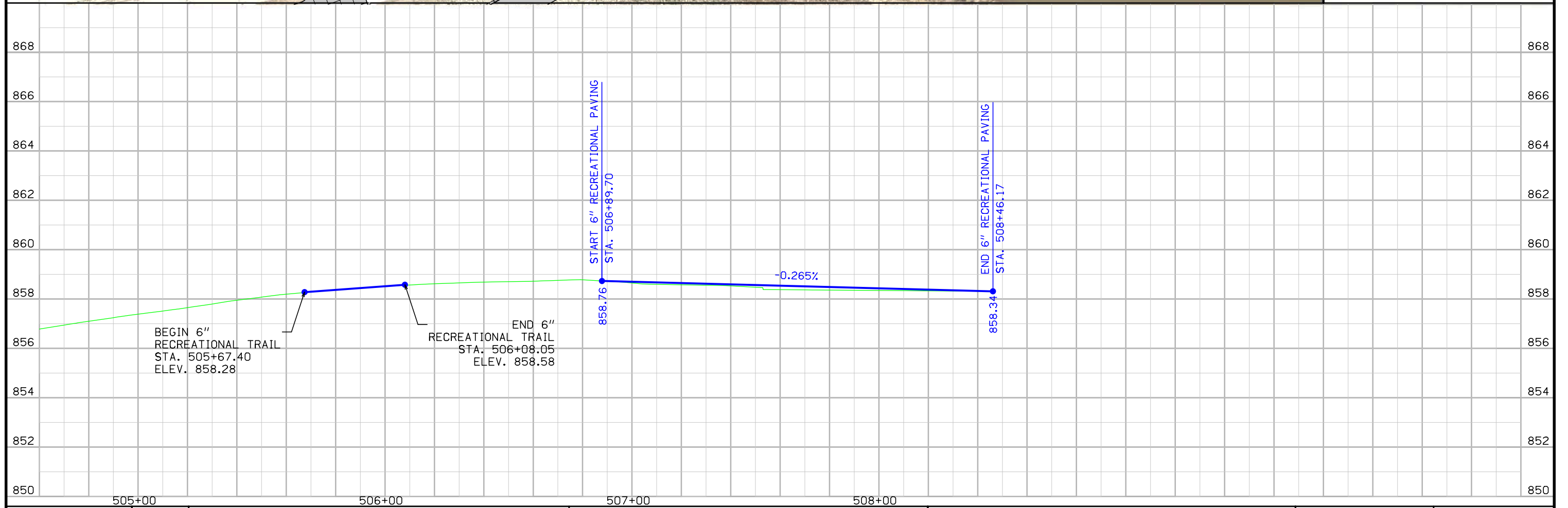
MARINA SITE TRAILS
RIVER ROAD

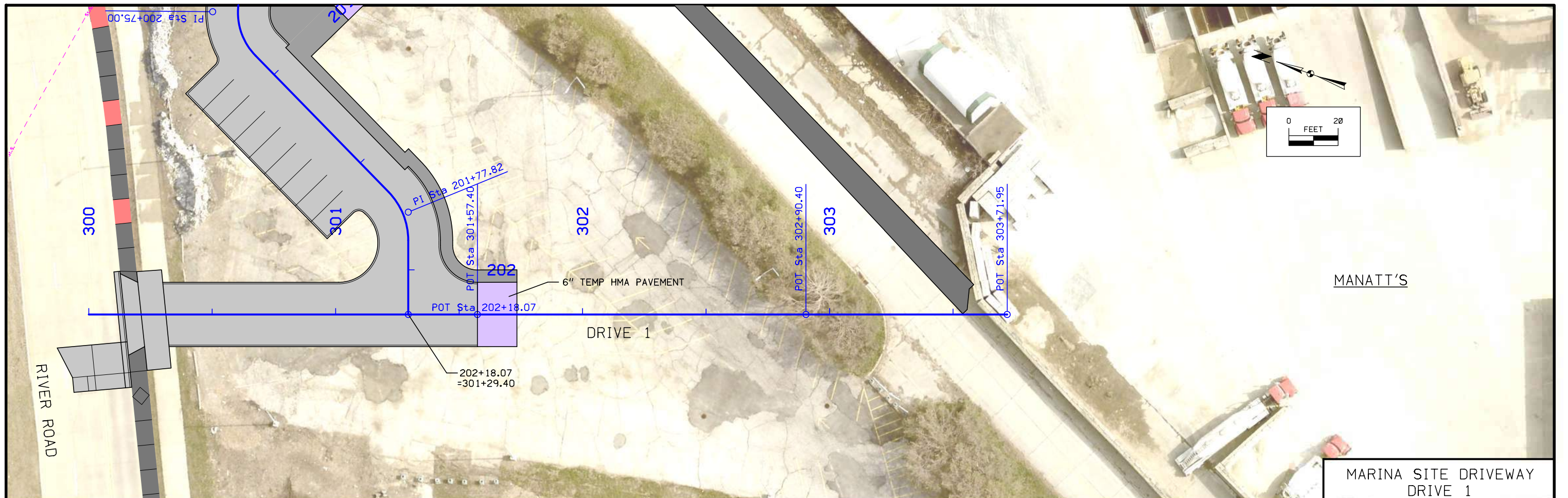


ENGLISH	IOWA DOT	DESIGN TEAM	AECOM	BLACK HAWK COUNTY	PROJECT NUMBER	TAP-U-8155(768)--8I-07	SHEET NUMBER	D.6
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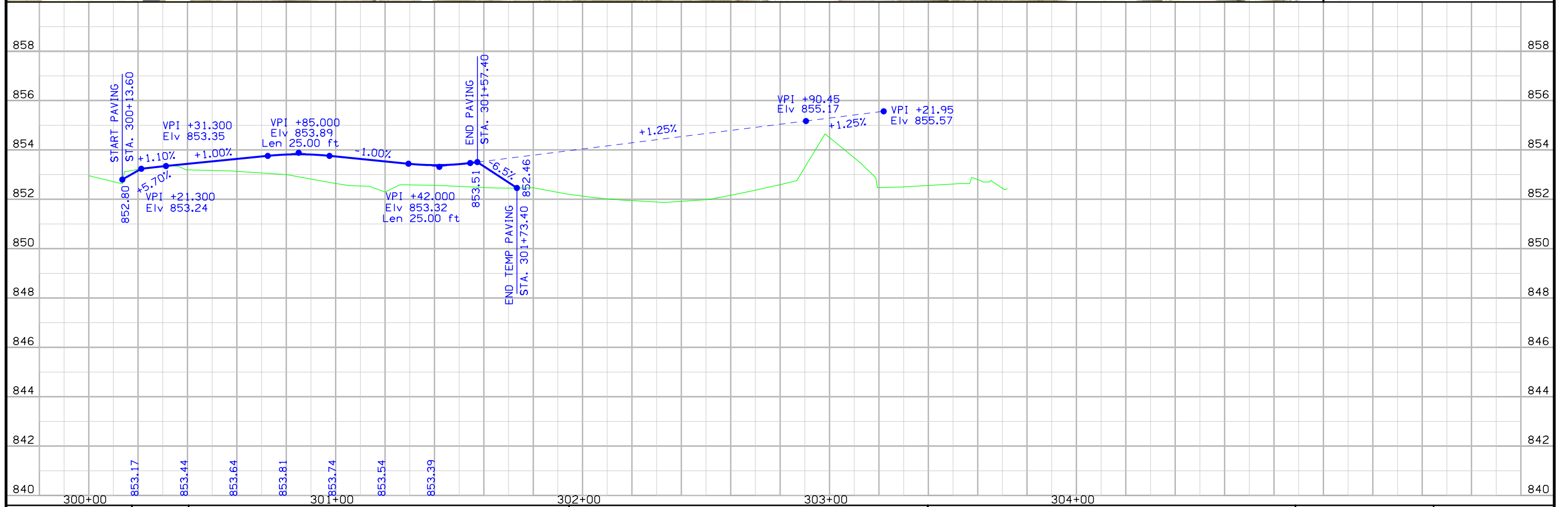
MARINA SITE TRAILS
RIVER ROAD

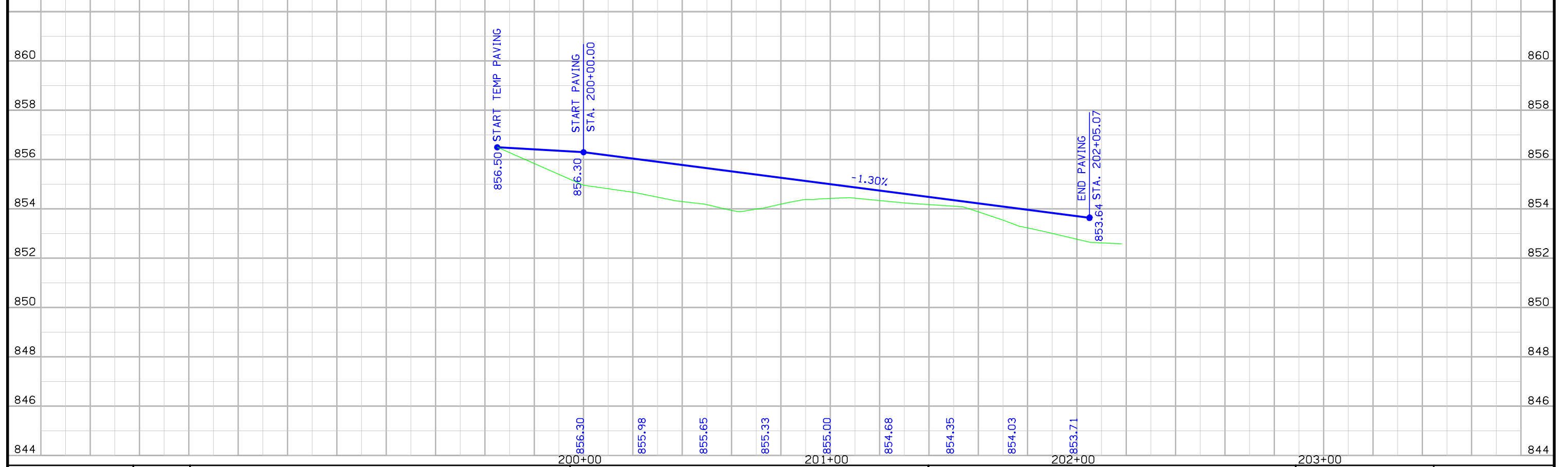
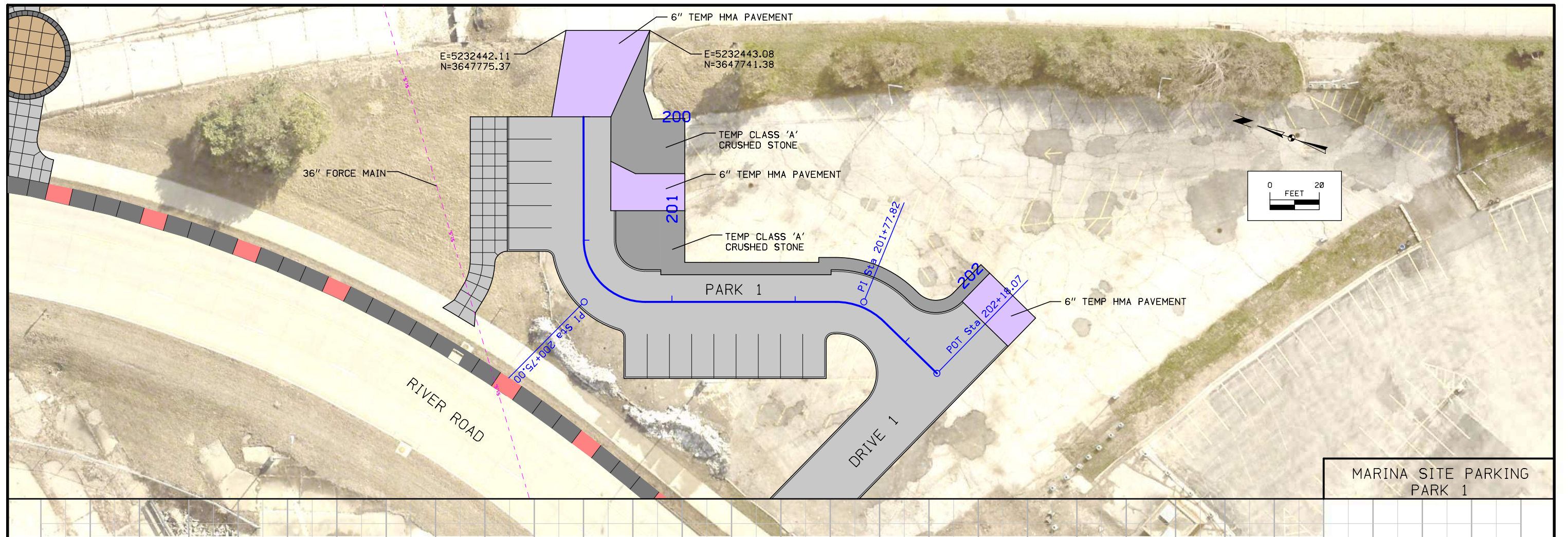




MANATT'S

MARINA SITE DRIVEWAY
DRIVE 1





ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent		Begin Spiral		Begin Curve		Simple Curve PI or Master PI of SCS			End Curve		End Spiral			
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
DRIVE11		300+00.00	3,647,708.77	5,232,212.42												
DRIVE13		301+57.40	3,647,602.09	5,232,328.16												
DRIVE15		302+90.40	3,647,511.95	5,232,425.95												
DRIVE16		303+71.95	3,647,456.69	5,232,485.91												
PARK11		200+00.00	3,647,767.25	5,232,407.32												
PARK1_3							200+50.18	3,647,765.72	5,232,357.17	200+75.00	3,647,764.83	5,232,332.36	200+89.27	3,647,740.02	5,232,333.08	
PARK1_6							201+66.41	3,647,662.91	5,232,335.30	201+77.82	3,647,651.51	5,232,335.63	201+88.07	3,647,643.13	5,232,327.90	
PARK18		202+18.07	3,647,621.07	5,232,307.57												
BOATCHANNEL1		1000+00.00	3,647,935.22	5,232,559.37												
BOATCHANNEL_3							1002+64.92	3,647,712.96	5,232,703.52	1002+96.22	3,647,686.69	5,232,720.55	1003+25.59	3,647,674.83	5,232,749.52	
BOATCHANNEL5		1004+14.41	3,647,641.17	5,232,831.71												
KAYAK_TRAIL_21							100+00.00	3,648,192.42	5,232,380.29	100+38.73	3,648,160.93	5,232,402.84	100+77.30	3,648,126.35	5,232,420.28	
KAYAK_TRAIL_24							101+15.31	3,648,093.41	5,232,439.23	101+18.62	3,648,090.63	5,232,441.04	101+21.93	3,648,087.63	5,232,442.46	
15		101+97.80	3,648,019.08	5,232,474.98												
16		102+17.80	3,647,999.92	5,232,480.73												
KAYAK_TRAIL_11							102+64.23	3,647,956.04	5,232,495.89	102+68.20	3,647,952.29	5,232,497.19	102+72.16	3,647,948.37	5,232,497.88	
KAYAK_TRAIL_14							103+08.95	3,647,912.14	5,232,504.25	103+18.65	3,647,902.59	5,232,505.92	103+28.11	3,647,894.35	5,232,511.05	
KAYAK_TRAIL_17							103+62.33	3,647,865.31	5,232,529.15	103+79.40	3,647,850.24	5,232,537.16	103+95.22	3,647,843.21	5,232,552.71	
103		104+08.70	3,647,837.52	5,232,564.93												
104		105+19.20	3,647,744.81	5,232,625.05												
RIVERRD_1							500+00.00	3,647,496.79	5,232,101.46	500+16.33	3,647,513.00	5,232,103.47	500+31.71	3,647,525.37	5,232,114.13	
RIVERRD_4							503+12.67	3,647,750.38	5,232,282.38	504+96.55	3,647,896.60	5,232,393.87	506+66.89	3,648,080.46	5,232,391.92	
RIVERRD_7							504+94.32	3,648,107.88	5,232,391.25	507+70.90	3,648,184.41	5,232,388.19	508+46.17	3,648,256.05	5,232,361.10	
CONTROL POINT			NORTHING	EASTING	ELEVATION											
R8			3,647,129.54	5,232,470.29	846.98											
R9			3,647,459.34	5,231,982.43	848.97											
MAR3			3,647,864.50	5,232,494.00	859.87											
MAR2			3,647,690.17	5,232,354.03	854.35											
MAR1			3,647,472.69	5,232,323.41	852.14											

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ _{scs}	Horizontal Alignment Data												Remarks			
			Spiral Data					Curve Data										
			θ _s	L _s	T _s	E _s	X _c	Y _c	L.T.	S.T.	Δ _c	T	L	R		E		
PARK1_3													89° 35' 44.63" LT	24.82'	39.09'	25.00'	10.23'	
PARK1_6													44° 18' 58.62" RT	11.40'	21.66'	28.00'	2.23'	
BOATCHANNEL_3													34° 45' 55.10" LT	31.31'	60.68'	100.00'	4.79'	
KAYAK_TRAIL_21													8° 51' 29.14" RT	38.73'	77.30'	500.00'	1.50'	
KAYAK_TRAIL_24													7° 34' 49.99" RT	3.31'	6.615'	50.00'	0.110'	
KAYAK_TRAIL_11													9° 05' 42.58" RT	3.98'	7.937'	50.00'	0.158'	
KAYAK_TRAIL_14													21° 57' 15.50" LT	9.70'	19.16'	50.00'	0.932'	
KAYAK_TRAIL_17													37° 41' 40.48" LT	17.07'	32.90'	50.00'	2.833'	
RIVERRD_1													33° 43' 08.73" RT	16.33'	31.71'	53.89'	2.42'	
RIVERRD_4													37° 56' 04.78" LT	183.87'	354.22'	535.00'	30.72'	
RIVERRD_7													18° 25' 26.91" RT	76.59'	151.85'	472.24'	6.17'	

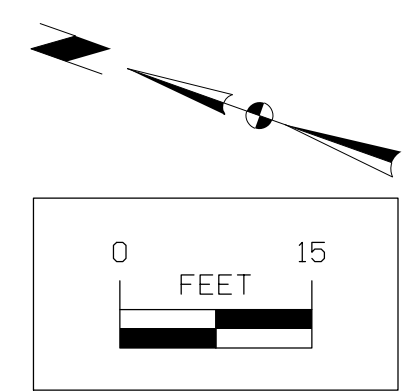
108-23A 08-01-08
TRAFFIC CONTROL PLAN
<p>1. Prior to start of colored infill, River Road Trail shall be closed on both ends and TC-228 shall be installed for lane closure near the trail. For sanitary sewer work in River Road, TC-211 shall be incorporated into TC-228 for duration of work.</p> <p>2. For sanitary sewer work in River Road, TC-211 shall be incorporated into TC-228 for duration of work.</p> <p>3. All signage and control devices shall be incidental to traffic control item.</p> <p>4. Trail Closures as tabulated in tabulation 113-2 will be included in the price bid for Traffic Control.</p>
108-26A 08-01-08

STAGING NOTES
<p>It is recognized that as the various activities related to construction progress, certain situations may arise which might preclude adhering to the original construction sequence or which, in the opinion of the contractor, could benefit from a more efficient staging operation. Should this occur, and the contractor desires to deviate from the original plan, the contractor shall submit an alternative plan for approval by the Engineer.</p> <p>LEVEE WORK PROPOSED STAGING</p> <p>1. Work within the Cedar River shall be done at times of low flow and at times when the Cedar River Bladder Dam is deflated. The dam is expected to be deflated in November, 2021 and will remain deflated during the 2022 construction season.</p> <p>2. Complete grading for construction of Kayak Trail to river. Use Kayak Trail to access construction area adjacent to river.</p> <p>3. Install erosion control devices as work progresses.</p> <p>4. Complete channel excavation from upstream to downstream. Portions of excavated material may be used to dam off Cedar River from work area. Work area may be pumped dry to provide work area for completion of channel excavation and construction of concrete structures.</p> <p>5. Install engineering fabric and complete lining of channel with revetment.</p> <p>6. Construct concrete dock, retaining wall, and sidewalk.</p> <p>RECREATIONAL TRAIL AND PARKING LOT WORK</p> <p>1. Work in this area is governed by the General Site Materials Management Plan (GSMMP)</p> <p>2. Pavement removal of old River Road and parking lot areas.</p> <p>3. Construct storm and sanitary sewer. Excavated materials shall be tested and handled in accordance with GSMMP.</p> <p>4. Complete rough grading of site. Cut materials shall be tested and handled in accordance with GSMMP. Fill material, as needed, shall be special backfill provided by contractor.</p> <p>5. Install lighting and electrical conduit. Excavated materials shall be tested and handled in accordance with GSMMP.</p> <p>6. Pave recreational trail, driveway, colored infill.</p> <p>7. Complete landscaping work.</p>

113-2 04-16-13																																																																					
PEDESTRIAN PATH CLOSURES																																																																					
Refer to TC-601.																																																																					
*Assumes 6 foot wide barricade. Closures may need to be removed and re-established.																																																																					
<table border="1"> <thead> <tr> <th rowspan="2">Location</th> <th rowspan="2">Side</th> <th>Type III Barricades*</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>No.</th> </tr> </thead> <tbody> <tr> <td>100' SE of Start Proposed Colored Sidewalk</td> <td></td> <td style="text-align: center;">2</td> <td>Sidewalk Closure</td> </tr> <tr> <td>10' N of End Proposed Colored Sidewalk</td> <td></td> <td style="text-align: center;">2</td> <td>Sidewalk Closure</td> </tr> <tr> <td>20' E of Gatewell 1</td> <td></td> <td style="text-align: center;">1</td> <td>Sidewalk Closure</td> </tr> <tr> <td>At Manatt's Driveway</td> <td></td> <td style="text-align: center;">2</td> <td>Sidewalk Closure</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Location	Side	Type III Barricades*	Remarks	No.	100' SE of Start Proposed Colored Sidewalk		2	Sidewalk Closure	10' N of End Proposed Colored Sidewalk		2	Sidewalk Closure	20' E of Gatewell 1		1	Sidewalk Closure	At Manatt's Driveway		2	Sidewalk Closure																																																
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At Manatt's Driveway		2	Sidewalk Closure																																																																		



MARINA SITE TRAILS
TRAFFIC CONTROL



300

301

302

Sta. 300+12.80
16.50 Lt.
F.G. 852.88
2" Curb

Sta. 300+14.30
0.00 Lt.
F.G. 852.63
2" Curb

Sta. 300+16.10
16.50 Rt.
F.G. 852.37
2" Curb

Sta. 300+30.00
13.00 Lt.
F.G. 853.55
6" Curb

Sta. 300+85.00
13.00 Lt.
F.G. 854.02
6" Curb

Sta. 301+42.00
13.00 Lt.
F.G. 853.58

Sta. 301+57.40
13.00 Lt.
F.G. 853.71
6" Curb

Sta. 301+73.40
13.00 Lt.
EL. 852.63

1.50%
13.0'

1.50%
13.0'

853.35

853.82

853.39

853.51

DRIVE 1

Sta. 300+32.50
13.00 Rt.
F.G. 853.15
6" Curb

Sta. 300+85.00
13.00 Rt.
F.G. 853.62
6" Curb

Sta. 301+42.00
13.00 Rt.
F.G. 853.19
6" Curb

Sta. 301+57.40
13.00 Rt.
F.G. 853.31
6" Curb

Sta. 301+73.40
13.00 Rt.
EL. 853.28

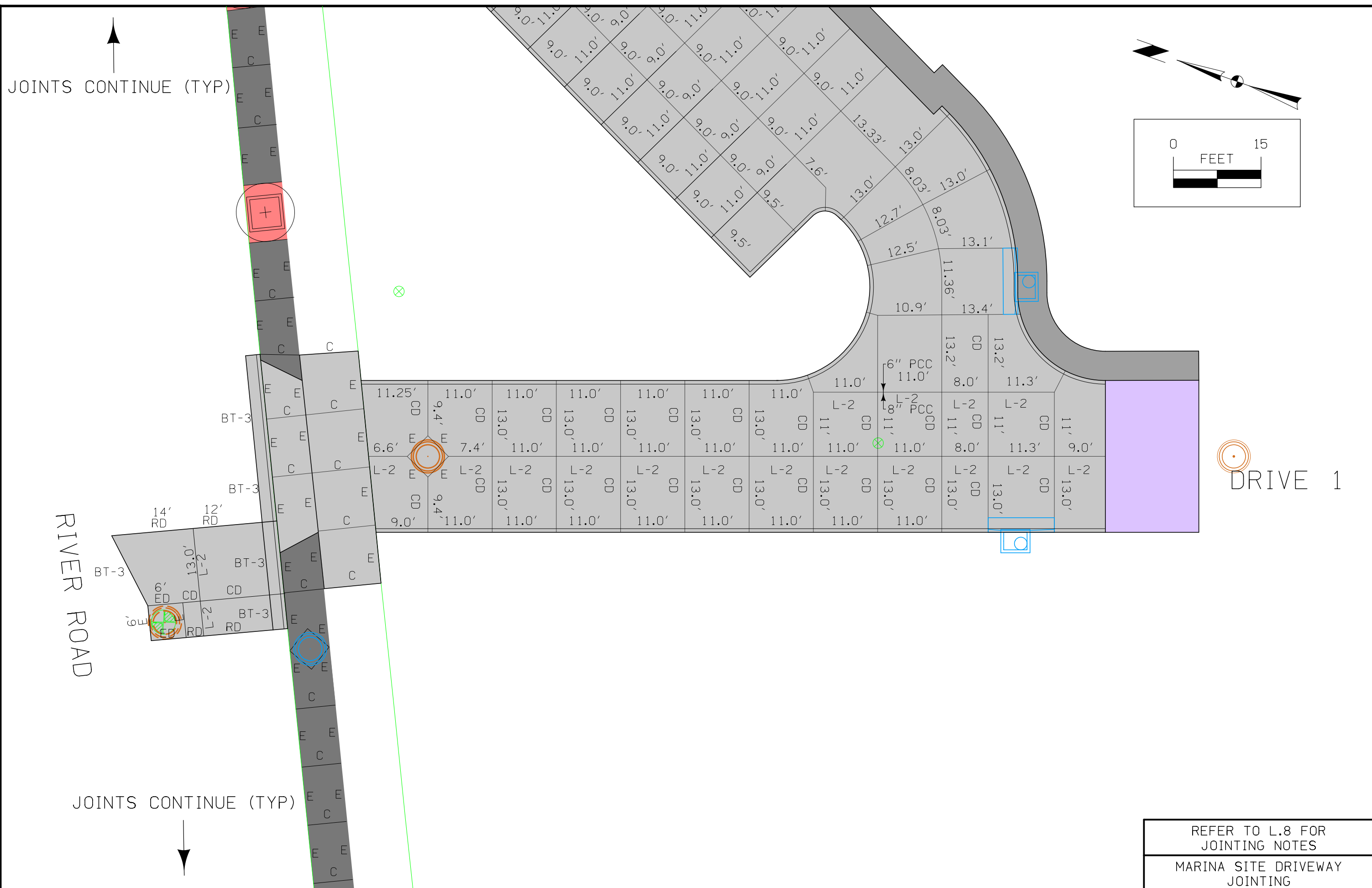
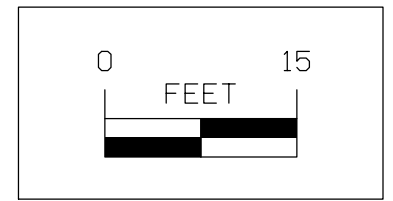
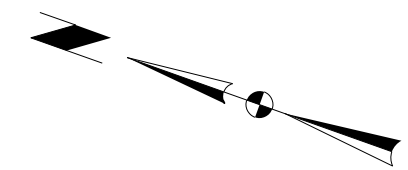
16' TEMPORARY PAVEMENT

6" CURB

RIVER ROAD

MARINA SITE DRIVEWAY STAKING

JOINTS CONTINUE (TYP)

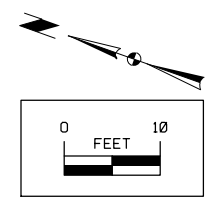
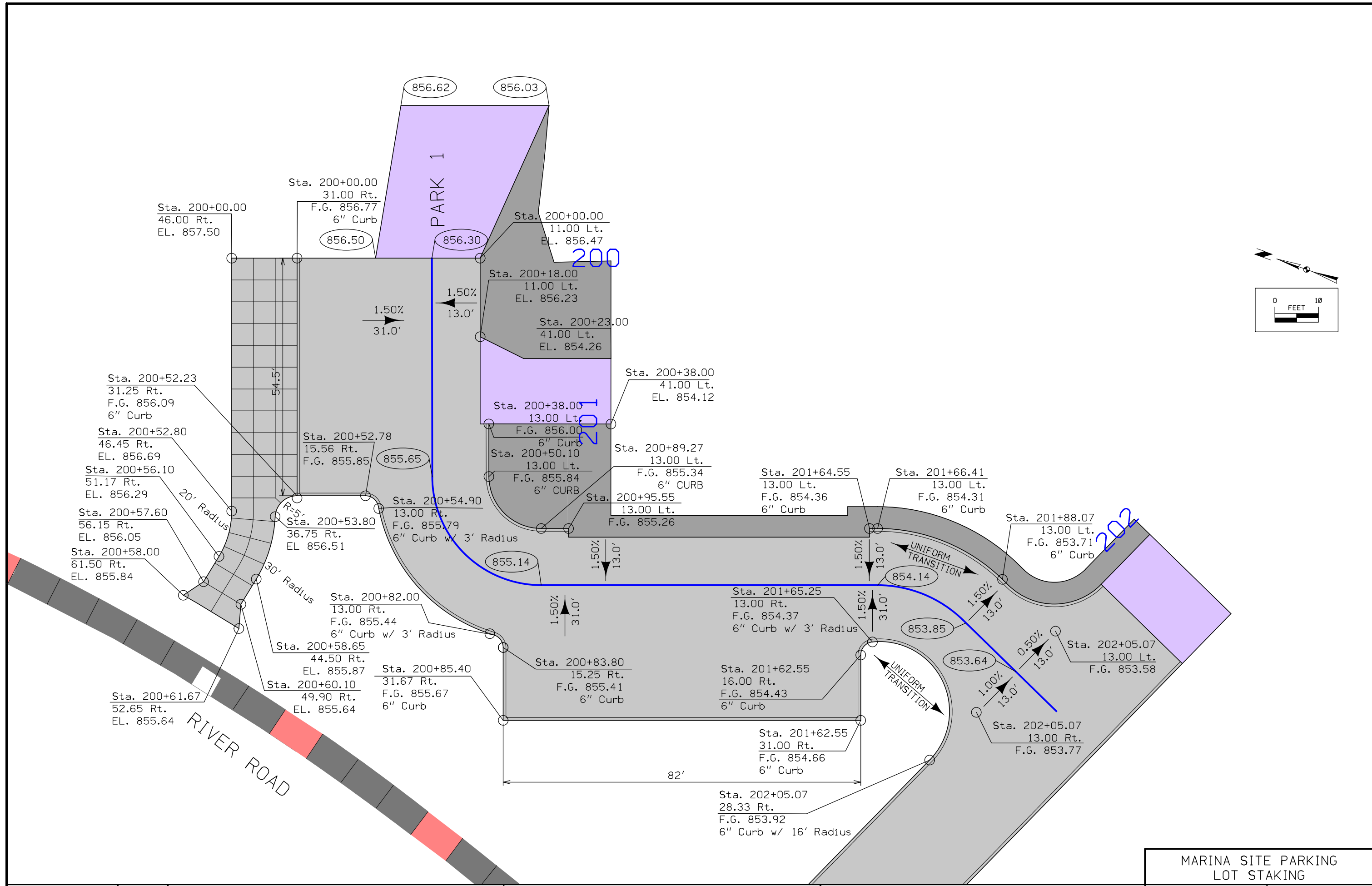


RIVER ROAD

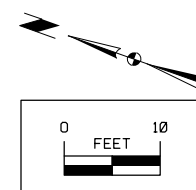
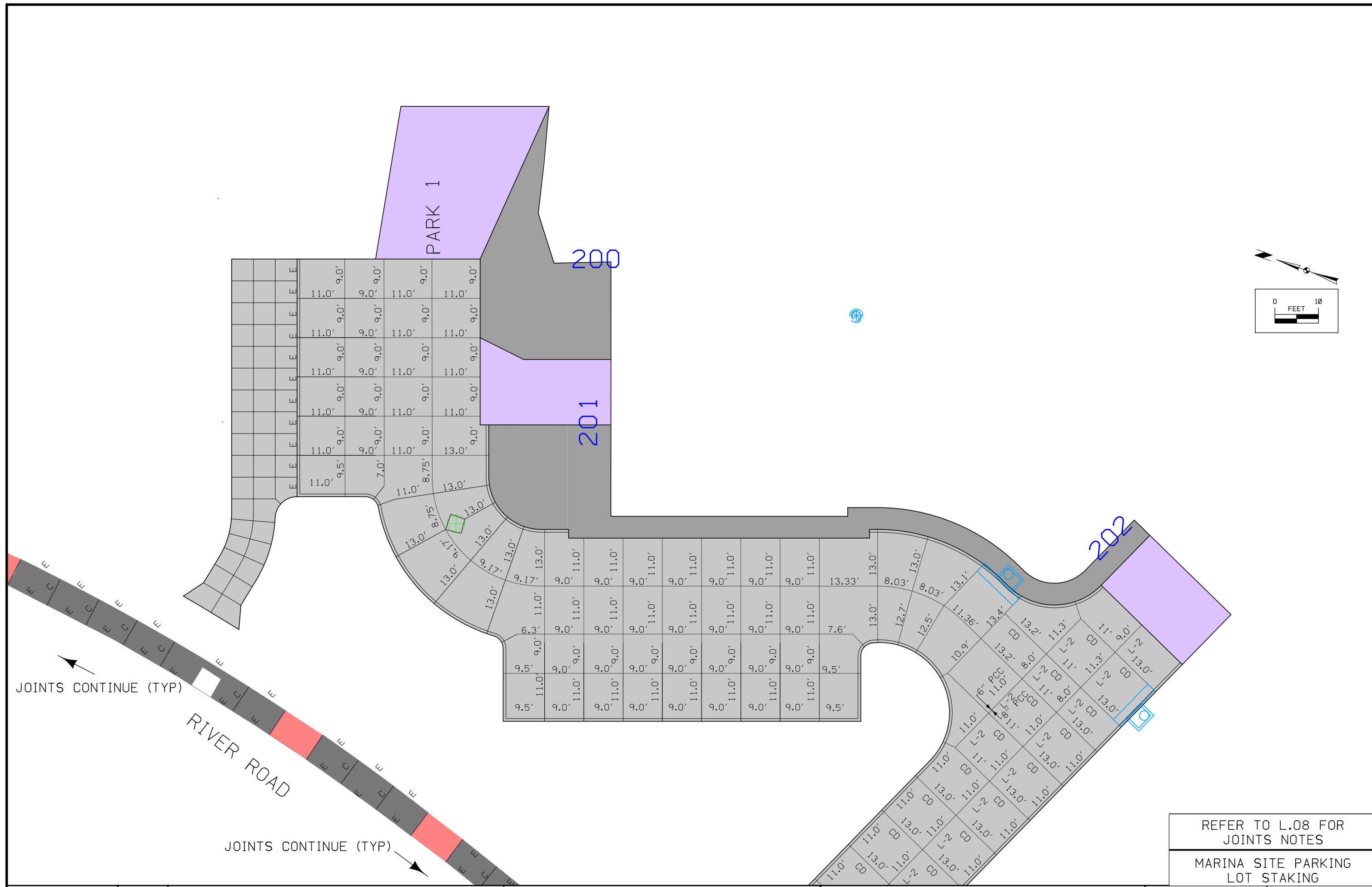
DRIVE 1

JOINTS CONTINUE (TYP)

REFER TO L.8 FOR
JOINTING NOTES
MARINA SITE DRIVEWAY
JOINTING

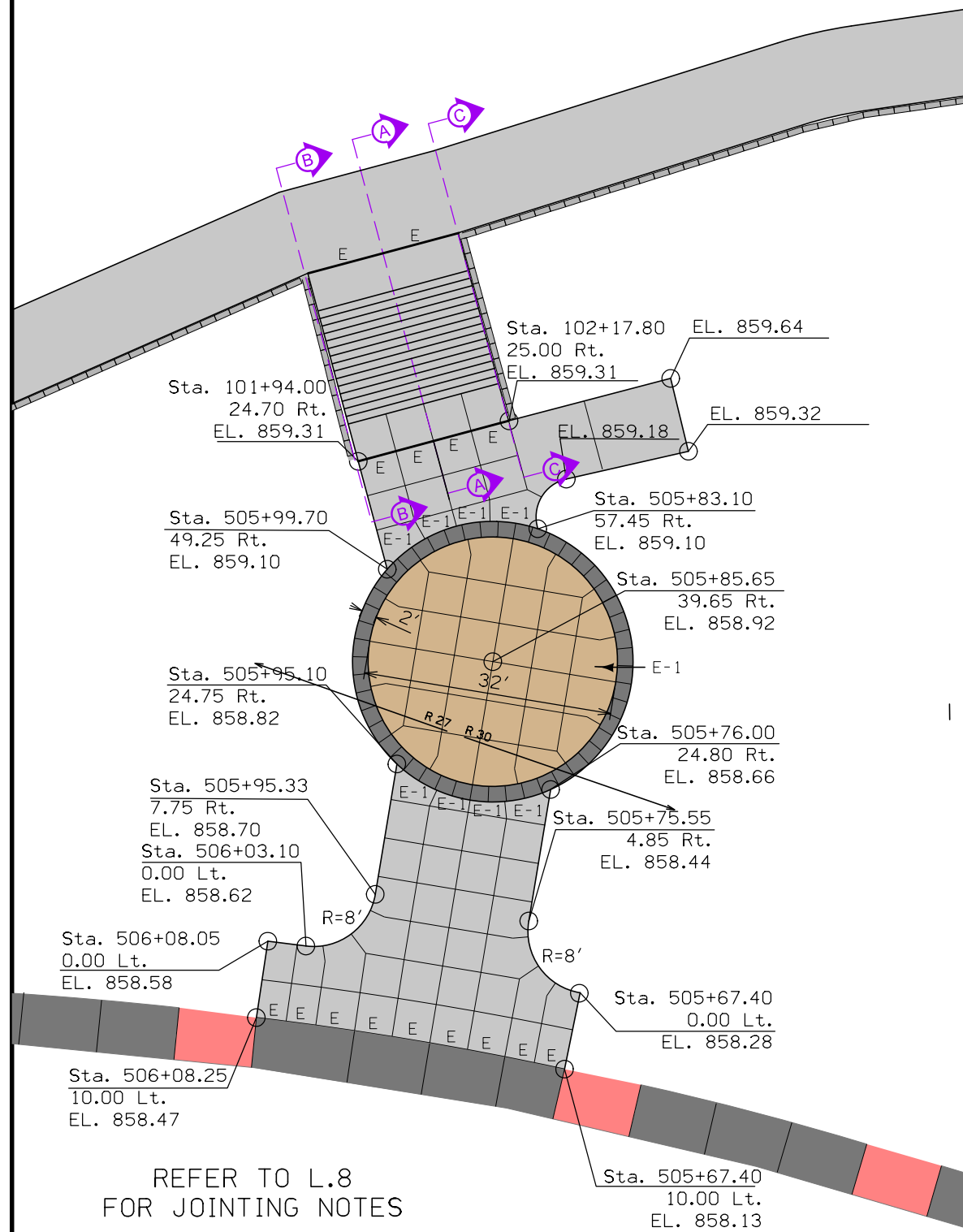
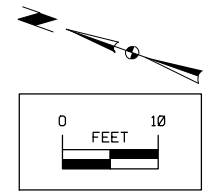


MARINA SITE PARKING
LOT STAKING



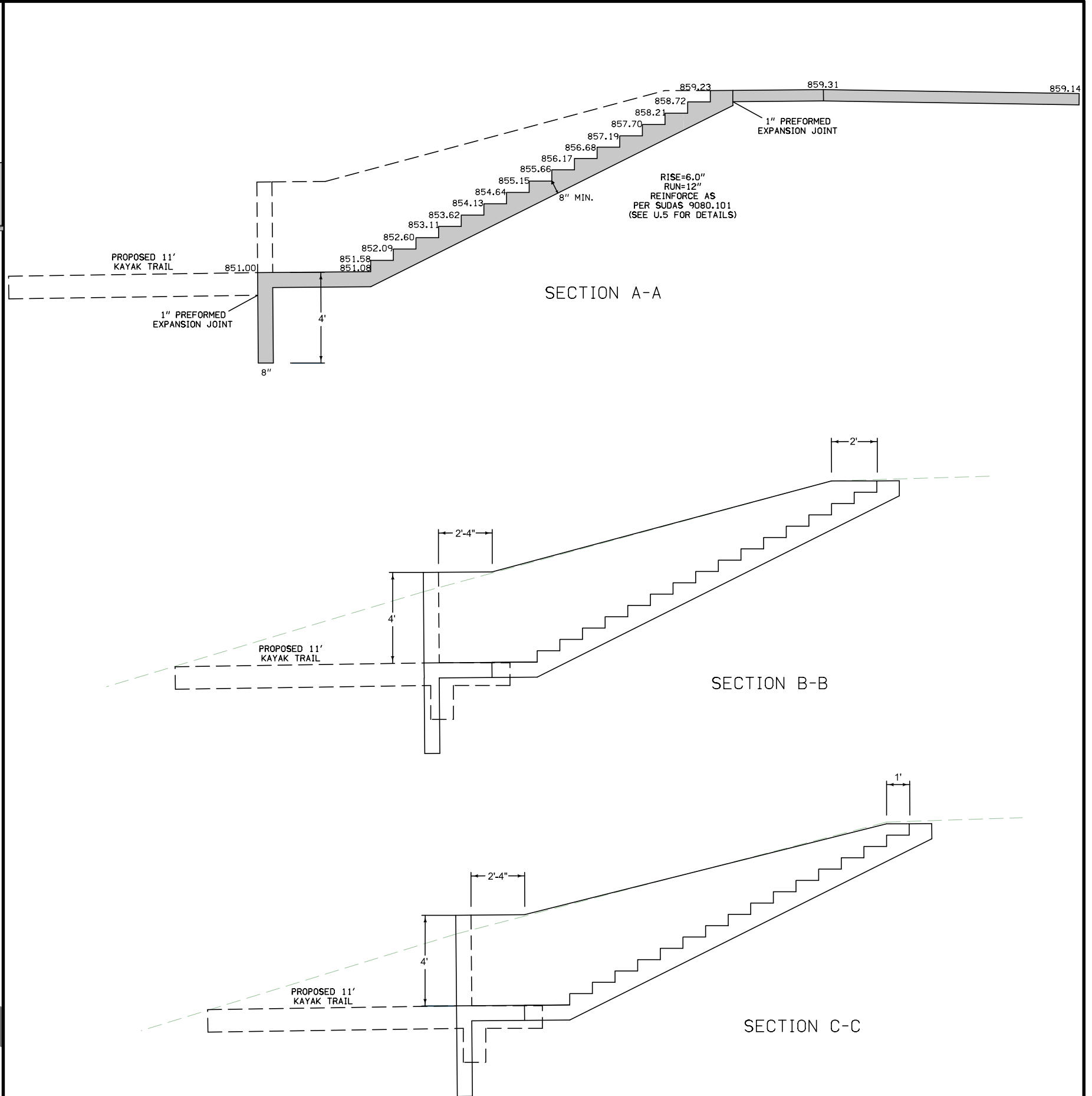
REFER TO L.08 FOR
JOINTS NOTES

MARINA SITE PARKING
LOT STAKING

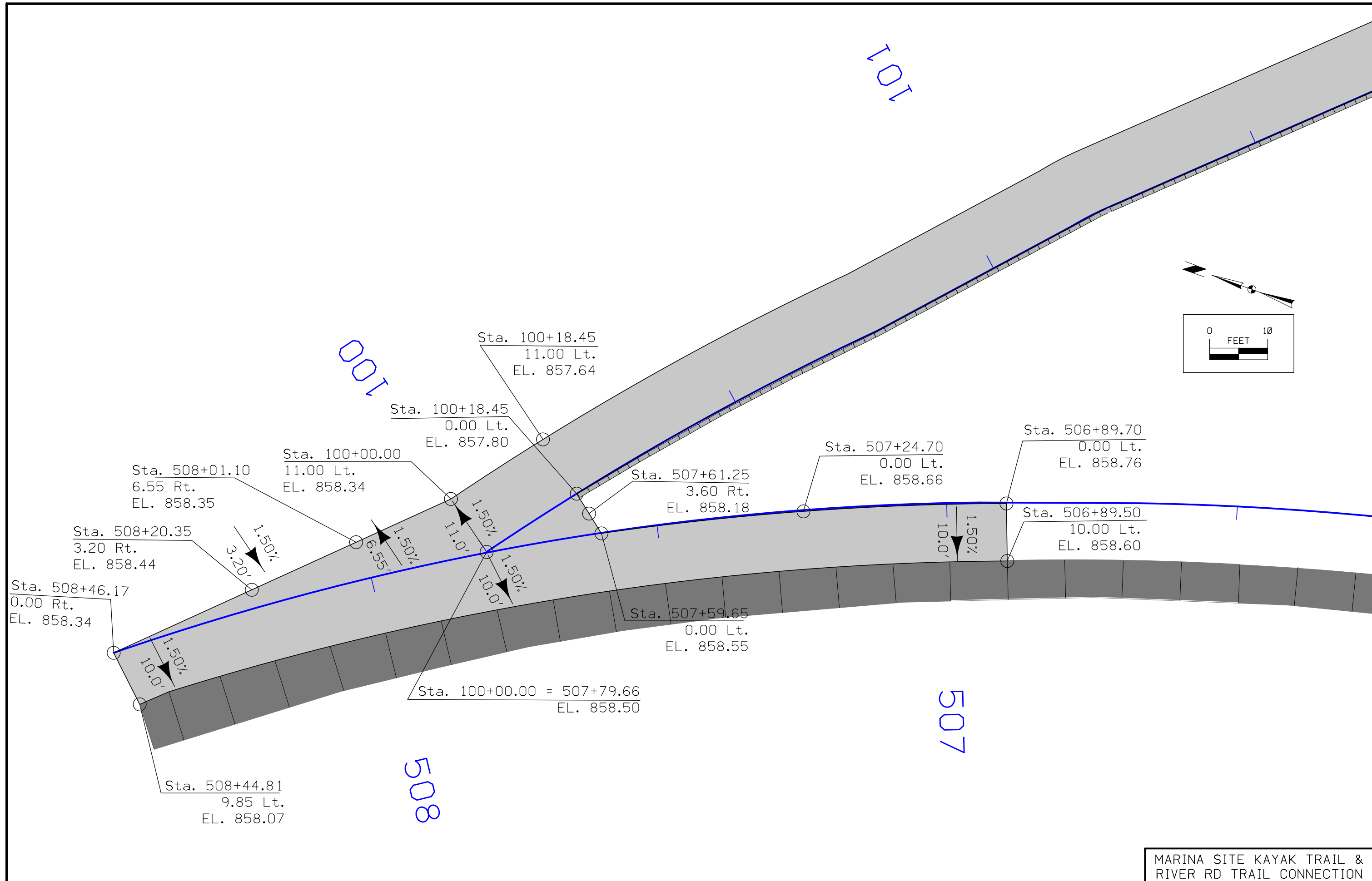


REFER TO L.8
FOR JOINTING NOTES

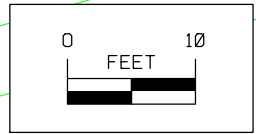
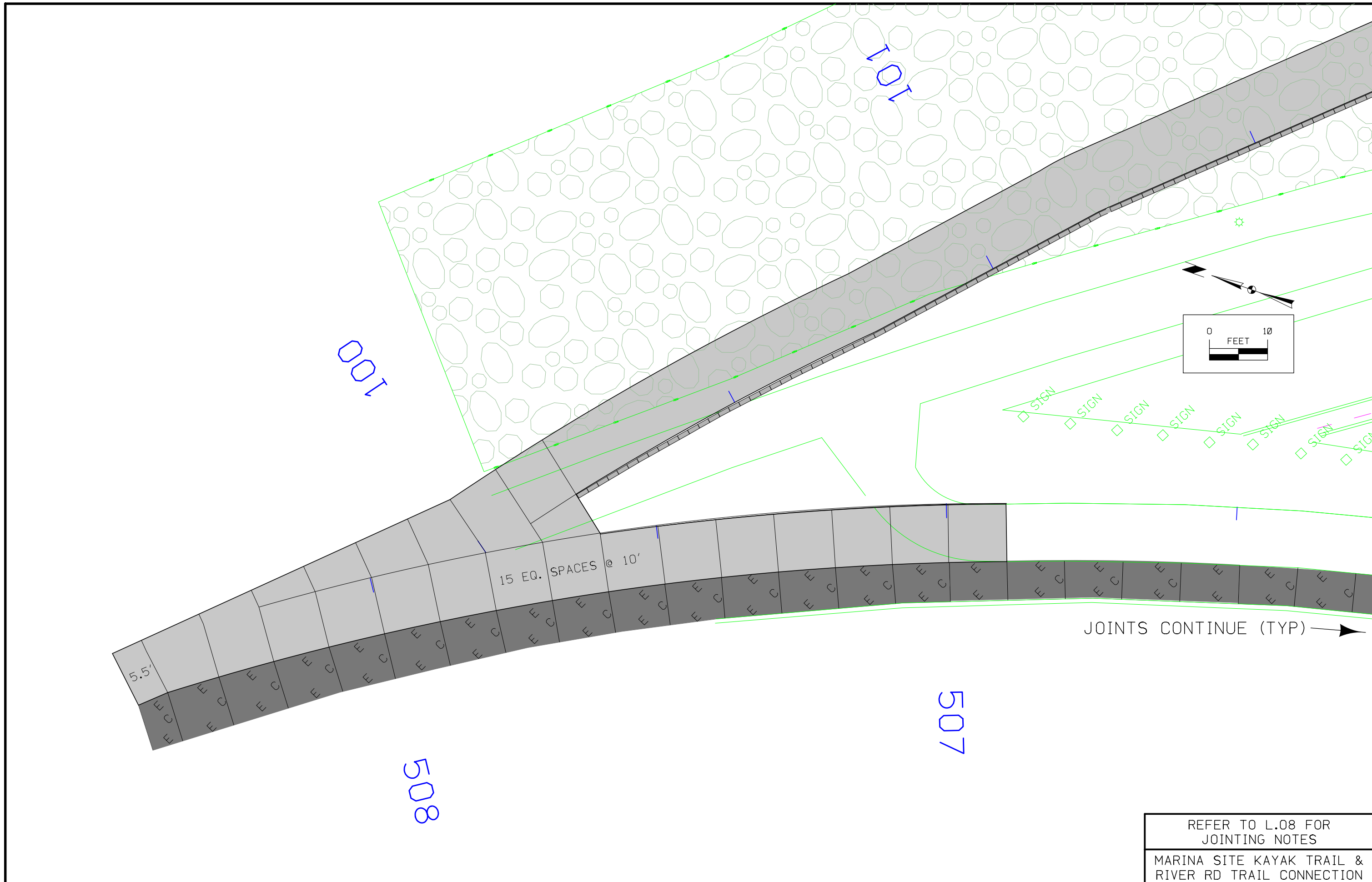
RIVER ROAD



MARINA SITE
STAIRCASE ELEVATIONS



MARINA SITE KAYAK TRAIL &
RIVER RD TRAIL CONNECTION



15 EQ. SPACES @ 10'

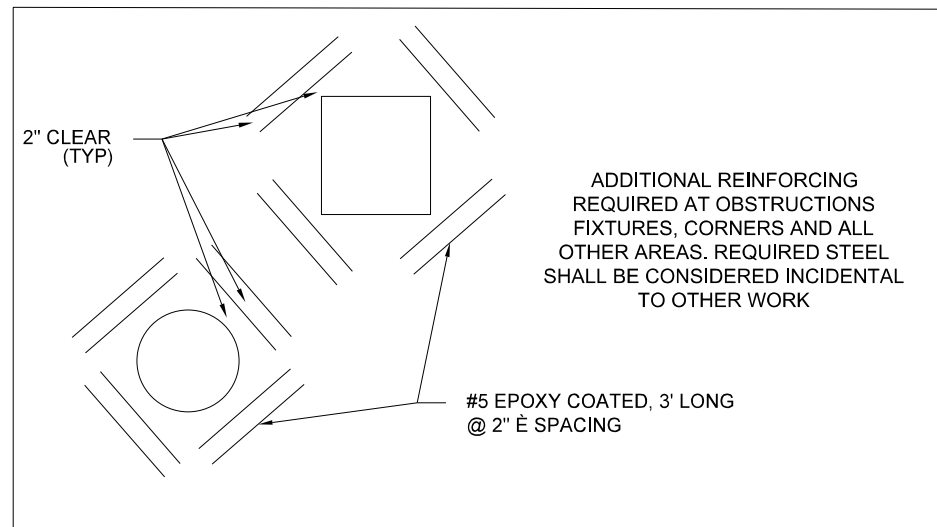
JOINTS CONTINUE (TYP) →

REFER TO L.08 FOR
JOINTING NOTES

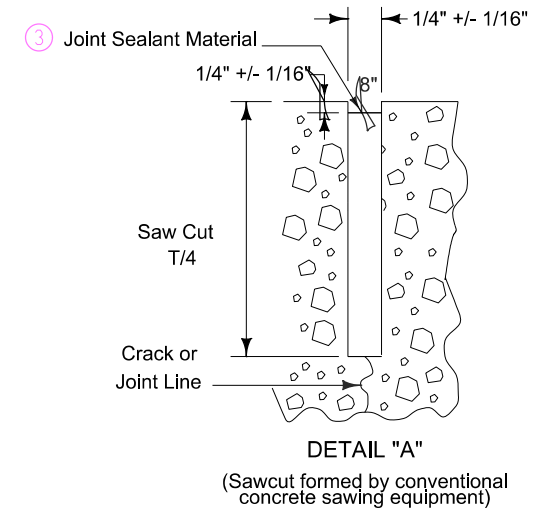
MARINA SITE KAYAK TRAIL &
RIVER RD TRAIL CONNECTION

NOTES:

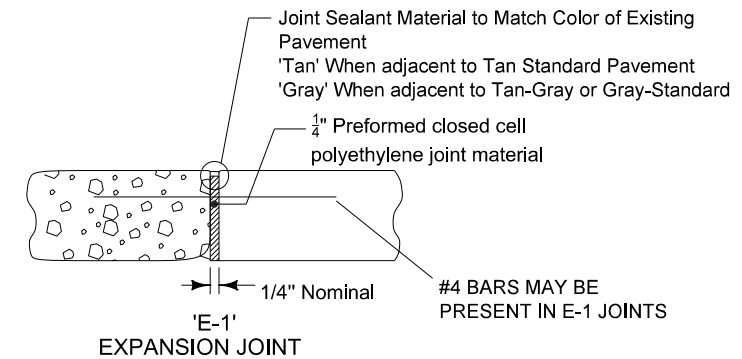
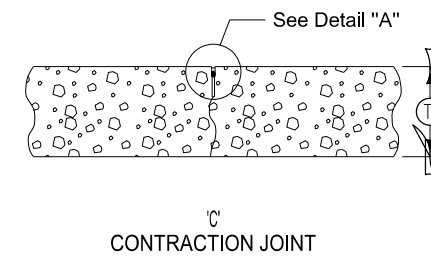
1. EXTREME CARE SHALL BE TAKEN AT TIME OF PAVEMENT JOINTS TO INSURE PLAN LAYOUT IS ACHIEVED IN THE FIELD.
2. NO JOINT SHALL VARY MORE THAN 1/2 " FROM SQUARE.
3. JOINT LAYOUT SHALL BE MEASURED FROM EDGE OF PAVED AREA, SO NO ACCUMULATION OF ERROR OCCURS.
4. JOINT TYPES MAY BE ADJUSTED IN FIELD TO MATCH CONSTRUCTION SEQUENCE AND FIELD CONDITIONS.
5. ALTERNATIVE REINFORCING LAYOUTS WILL BE CONSIDERED AT TIME OF CONSTRUCTION. ALTERNATIVE LAYOUTS SHALL BE SUBMITTED IN WRITING 2 WEEKS PRIOR TO PAVING OPERATION.
6. ALL GRAY AND TAN PAVEMENT THAT IS PLACED SHALL BE TEXTURED WITH FRACTURED SLATE APPEARANCE AS NOTED IN THE SPECIFICATIONS.
7. USE E-1 JOINT BETWEEN CURVED SIDEWALK AND ADJACENT SIDEWALK AND BETWEEN TAN AND GREY SIDEWALK.
8. ALL LONGITUDINAL JOINTS ARE L-1 & ALL TRANSVERSE JOINTS ARE C UNLESS OTHERWISE NOTED.



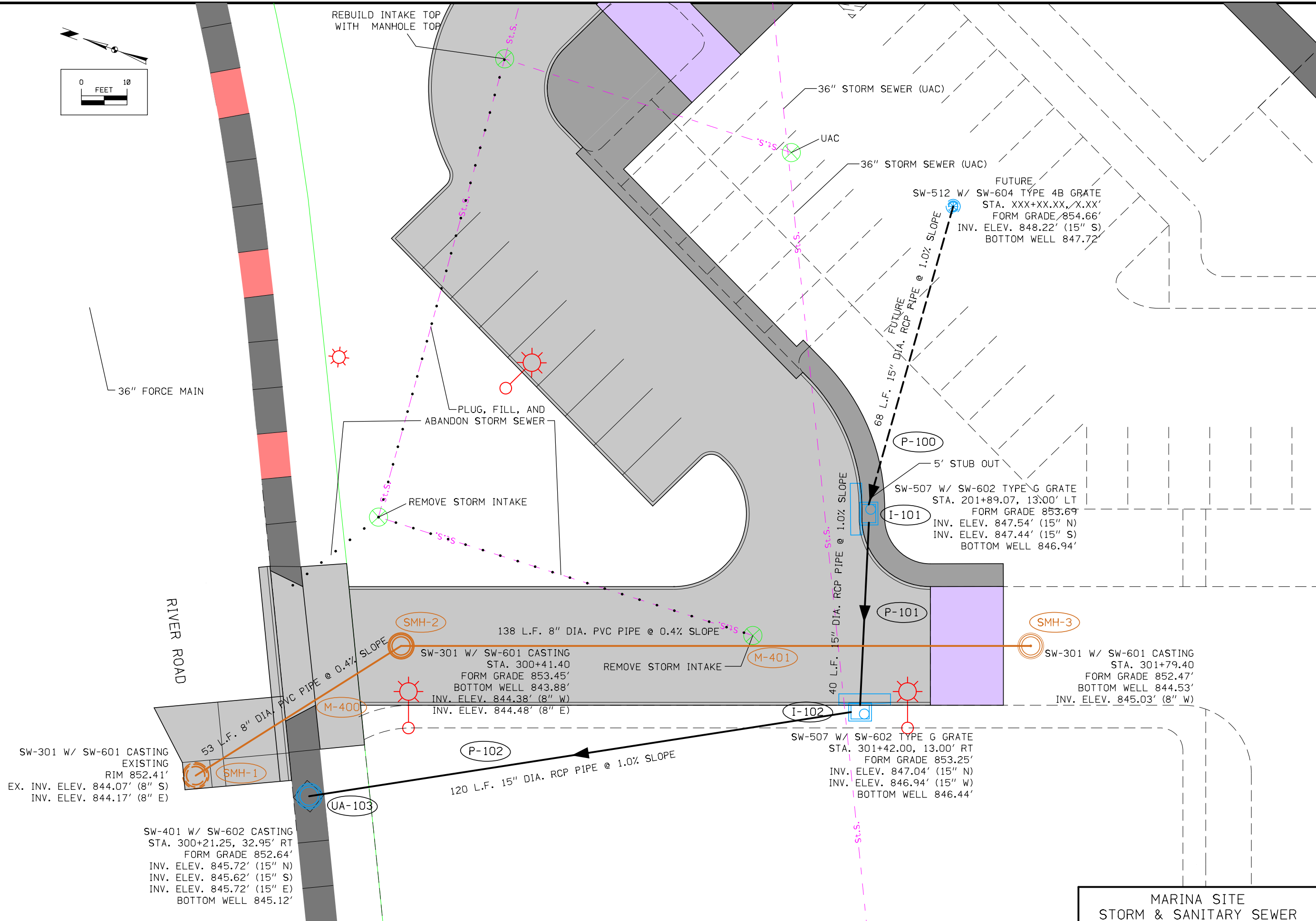
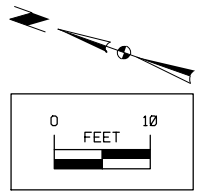
ADDITIONAL REINFORCING AT ROUND AND SQUARE FIXTURES



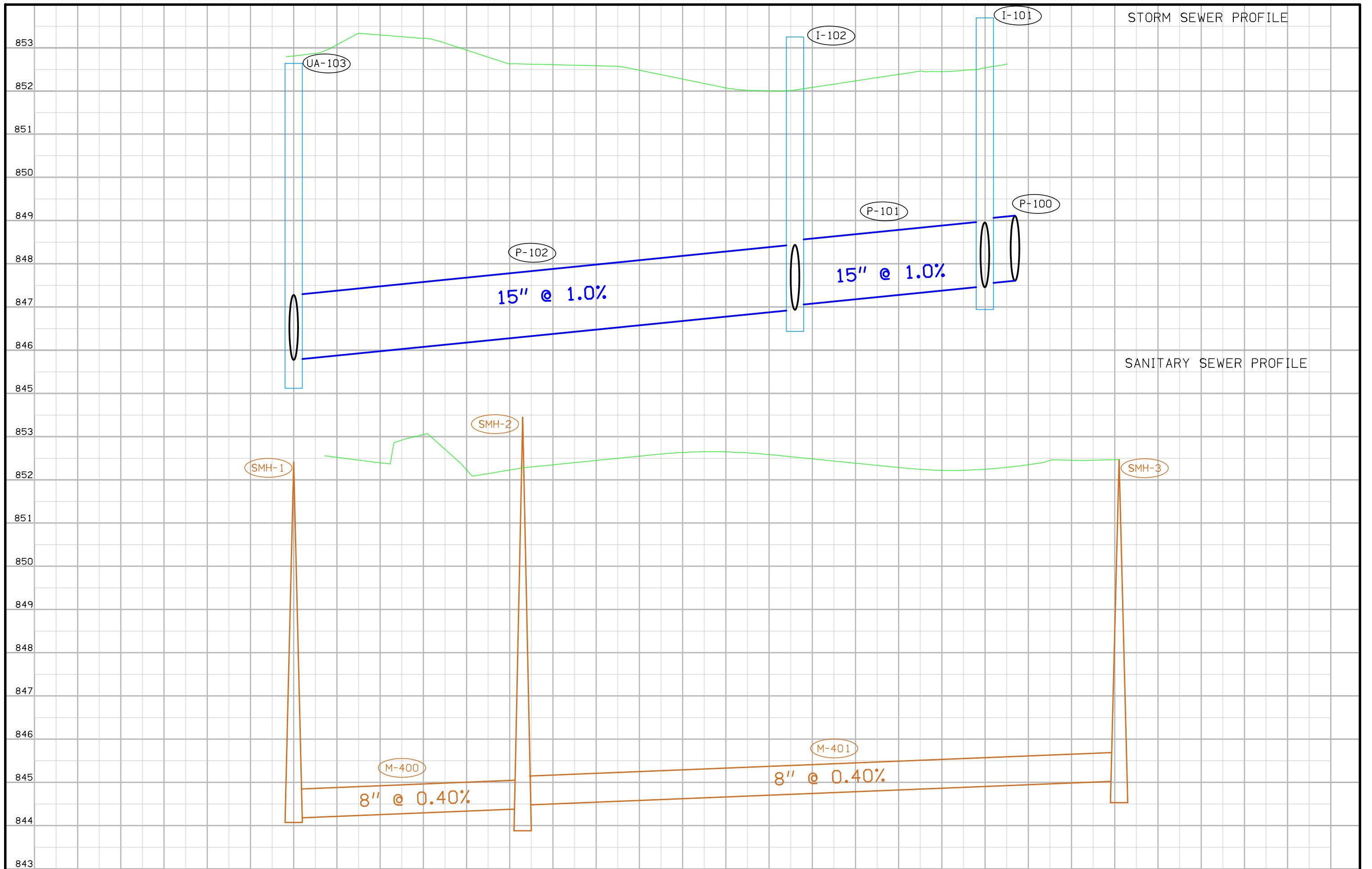
- ① EDGE WITH 1/4 INCH TOOL FOR LENGTH OF JOINT INDICATED IF FORMED; EDGING NOT REQUIRED WHEN CUT WITH DIAMOND BLADE SAW.
- ② THE FREE END OF DOWEL BAR SHALL BE COATED TO PREVENT BOND WITH PAVEMENT.
- ③ JOINT SEALANT MATERIAL SHALL MATCH THE COLOR OF ADJACENT PAVEMENT.



JOINT DETAILS FOR COLORED PAVEMENT



MARINA SITE
STORM & SANITARY SEWER



STORM SEWER PROFILE

SANITARY SEWER PROFILE

STORM SEWER

① Diameter or equivalent diameter

* Bid Item

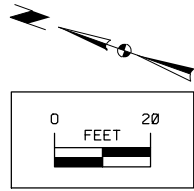
** For SW-545

INTAKES AND UTILITY ACCESSES

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade	Bottom Well	Extension Length**	Notes	Line Number	Intake/Utility Access No.		Class 'D'	Pipe Size ①	Bid* Length	Design Length	Slope %	Connected Pipe Joint (DR-121)	Flow Lines			Pipe Profile Sheet No.	Notes				
			Elev.	Elev.	FT			From	To							In	FT	FT			Type	Inlet Elevation	Outlet Elevation	Other Elevation
I-101	201+89.07, 13.00' LT	SW-507	853.69	846.94			P-100	Future I-101		2000	15	7	5.0	1										
I-102	301+42.00, 13.00' RT	SW-507	853.25	846.44			P-101	I-101 I-102		2000	15	44	40.0	1			847.44	847.04						
JA-103	300+21.25, 32.95' RT	SW-401	852.64	845.12			P-102	I-102 JA-103		2000	15	126	122.0	1			846.94	845.72						
							TOTAL				177													
SMH-1	502+09.50, 37.63' LT	SW-301	852.41	844.07		EXIST SANITARY	M-400	SMH-1 SMH-2	TRUSS		8	58	54.0	0.4			844.38	844.17						
SMH-2	300+41.40, 0+00	SW-301	853.45	843.88		SANITARY	M-401	SMH-2 SMH-3	TRUSS		8	142	138.0	0.4			845.03	844.48						
SMH-3	301+79.40, 0+00	SW-301	852.47	844.53		SANITARY	TOTAL				200													



OM4-2 (7 ct)
24" x 24"

6" HMA PATCH

RIVER ROAD

R3-1
24" x 24"

R5-1
30" x 30"



R3-5R
30" x 36"



R5-1
30" x 30"



REMOVE BARRICADE

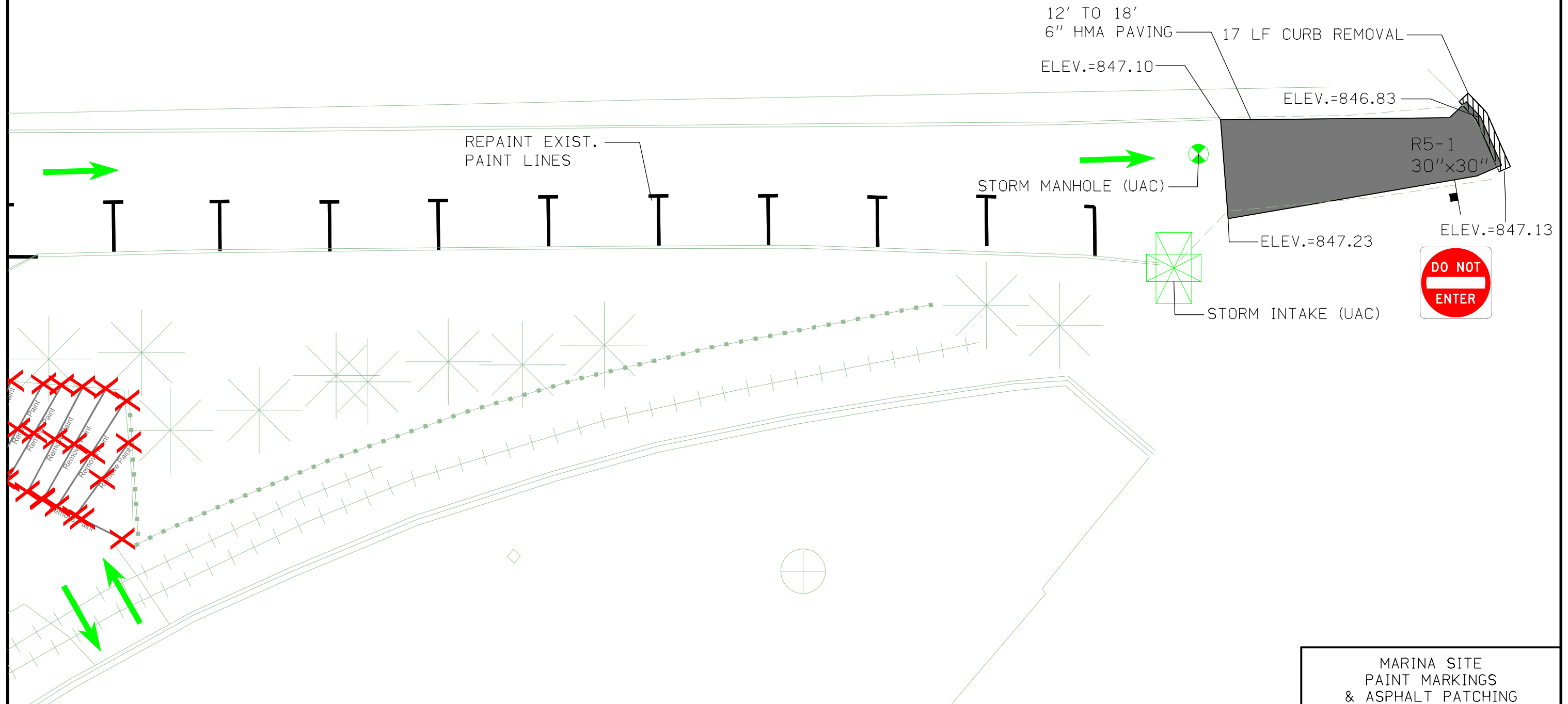
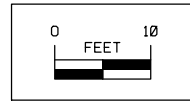
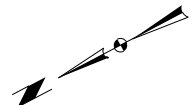
X PAVEMENT MARKING
REMOVAL

MARINA SITE
PAINT MARKINGS
& ASPHALT PATCHING

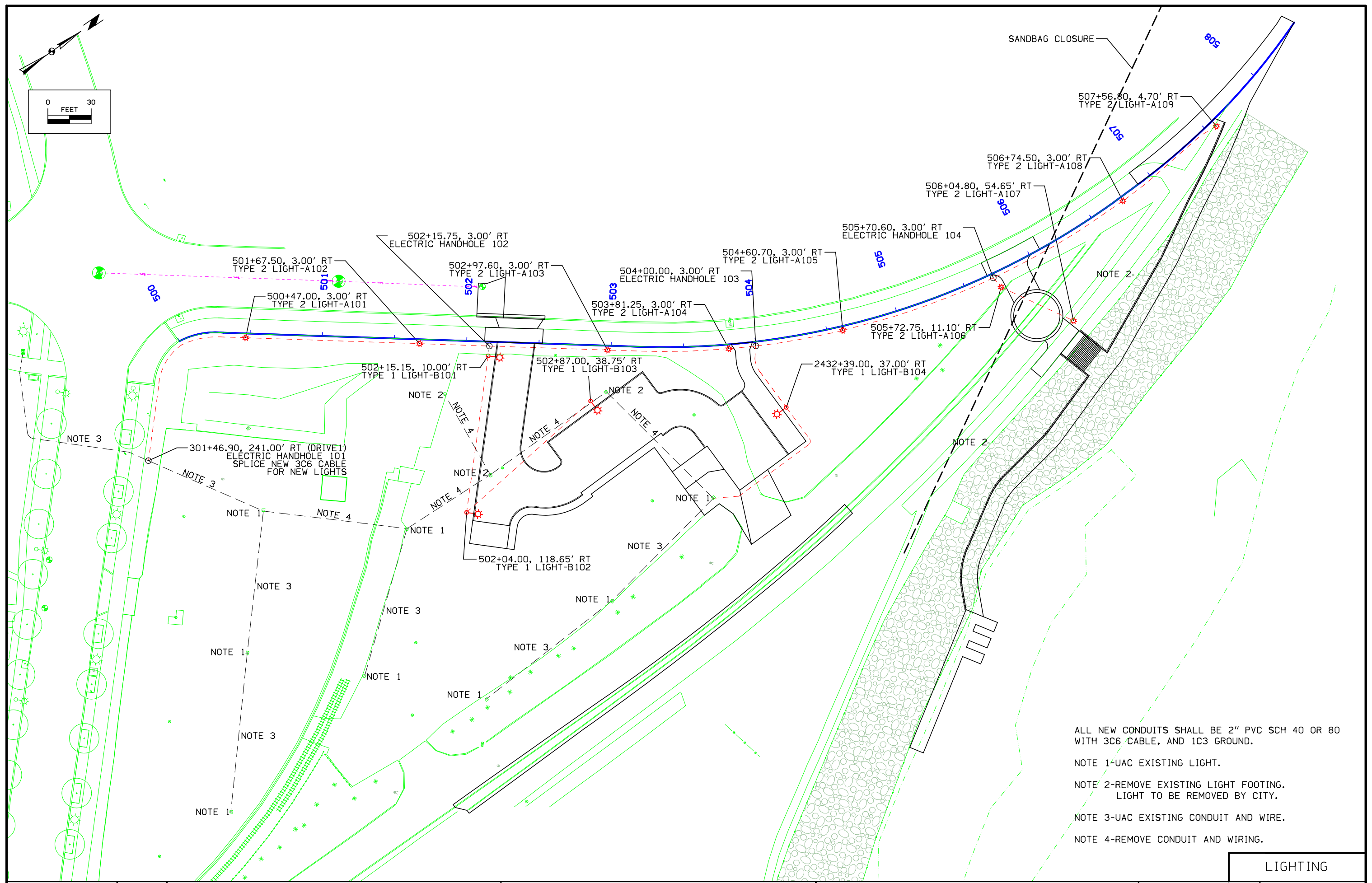
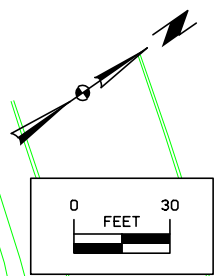
ENGLISH IOWA DOT DESIGN TEAM **AECOM**

BLACK HAWK COUNTY PROJECT NUMBER **TAP-U-8155(768)--8I-07**

SHEET NUMBER **N.1**



MARINA SITE
PAINT MARKINGS
& ASPHALT PATCHING



ALL NEW CONDUITS SHALL BE 2" PVC SCH 40 OR 80 WITH 3C6 CABLE, AND 1C3 GROUND.

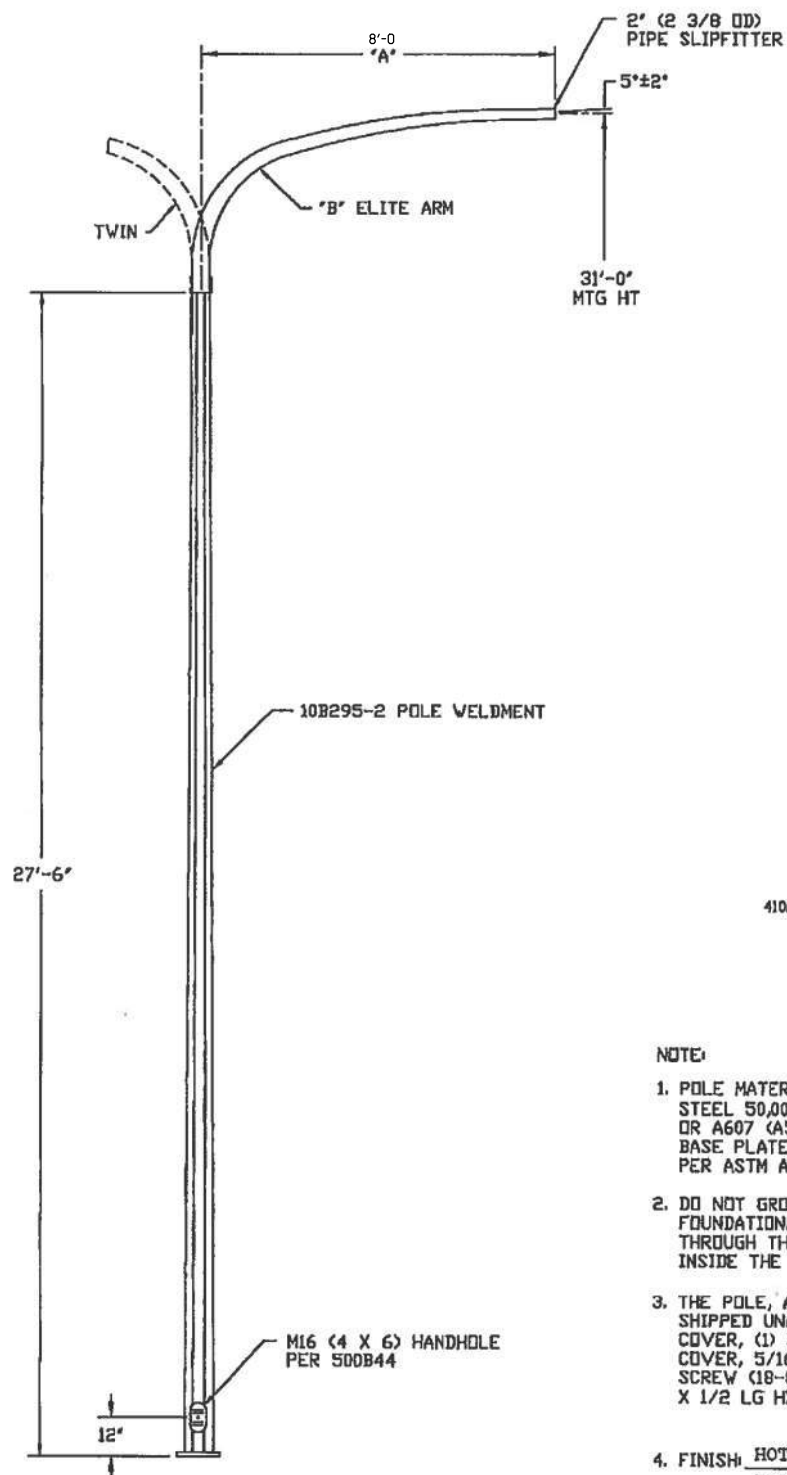
NOTE 1-UAC EXISTING LIGHT.

NOTE 2-REMOVE EXISTING LIGHT FOOTING. LIGHT TO BE REMOVED BY CITY.

NOTE 3-UAC EXISTING CONDUIT AND WIRE.

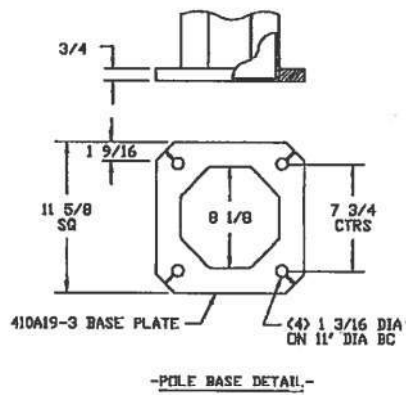
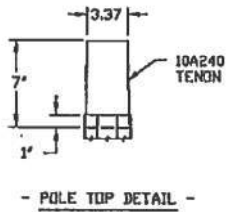
NOTE 4-REMOVE CONDUIT AND WIRING.

LIGHTING



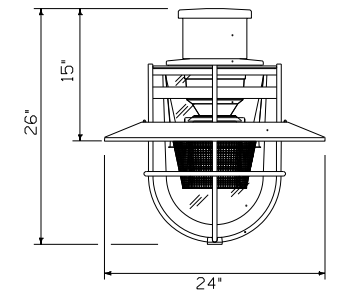
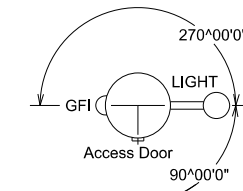
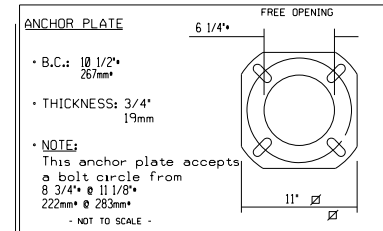
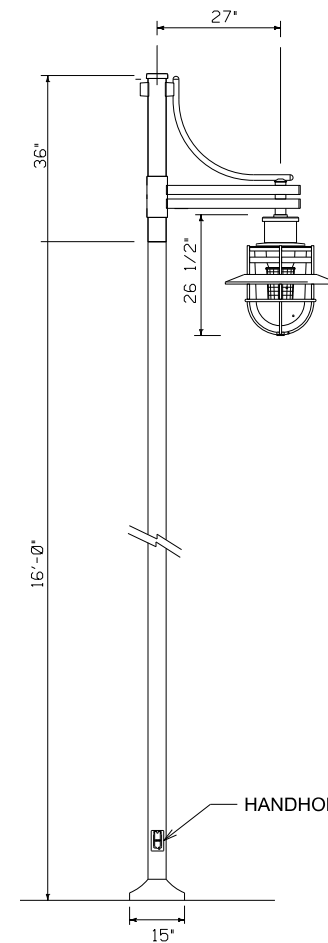
TYPE 1 LUMINARIES SHALL BE AMERICAN ELECTRIC LIGHTING ATB2-40BLEDE70MVOLTR3BKSH OR ENGINEER APPROVED EQUIVALENT MEETING THE FOLLOWING REQUIREMENTS:
 -LED, 120-277 MULTI-TAP
 -TYPE III LIGHT DISTRIBUTION
 -90-110 LUMENS/WATT
 -4000 K LIGHT TEMPERATURE
 -LIGHTS SHALL NOT REQUIRE SEPARATE POWER SUPPLY OR DRIVER
 -SHALL BE FINISHED TO MEET POLE COLOR
 -MINIMUM 50,000 HOURS AT 70% LUMEN MAINTENANCE

TYPE 1 POLE SHALL BE MILLERBERND EA8-310-A607-GV/BSG OR ENGINEER APPROVED EQUIVALENT.



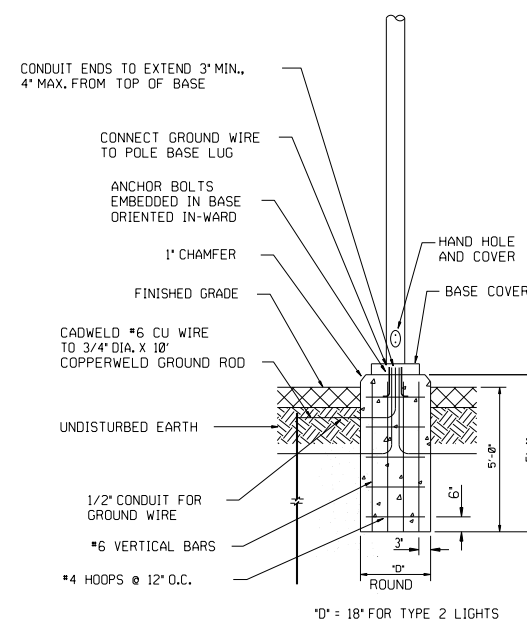
NOTE:

1. POLE MATERIAL- HIGH STRENGTH LOW ALLOY STEEL 50,000 PSI MIN YIELD PER ASTM A572 OR A607 (A588 OR A606 IF SELF-WEATHERING) BASE PLATE MATERIAL 36,000 PSI MIN YIELD PER ASTM A36 (A588 IF SELF-WEATHERING)
2. DO NOT GROUT BETWEEN THE BASE PLATE AND FOUNDATION. AIR MUST BE ALLOWED TO FLOW THROUGH THE POLE TO PREVENT MOISTURE INSIDE THE POLE.
3. THE POLE, ARM & THE FOLLOWING PARTS ARE SHIPPED UNASSEMBLED: (4) 6P PLASTIC NUT COVER, (1) 500B44-2 LATCH, (1) 500B45 HH COVER, 5/16-18NC X 2 1/2 LG HX SCKT FL HD SCREW (18-8 SS) & (2 OR 4 FOR TWIN) 1/2-13NC X 1/2 LG HX SCKT CUP PT SET SCREW (18-8 SS).
4. FINISH: HOT DIP GALVANIZED/FINISH PAINTED
BLACK SEMI-GLOSS (FTU-017)



TYPE 2 LUMINARIES SHALL BE LUMEC CAND1-40W-42LED4K-G2-0C-C-RL3-240-BKTX OR ENGINEER APPROVED EQUIVALENT MEETING THE FOLLOWING REQUIREMENTS:
 -LED, 120-277 MULTI-TAP
 -TYPE III LIGHT DISTRIBUTION
 -90-110 LUMENS/WATT
 -4000 K LIGHT TEMPERATURE
 -LIGHTS SHALL NOT REQUIRE SEPARATE POWER SUPPLY OR DRIVER
 -SHALL BE FINISHED TO MEET POLE COLOR
 -MINIMUM 50,000 HOURS AT 70% LUMEN MAINTENANCE

TYPE 2 POLE SHALL BE LUMEC APR4U-16-LBC4C-BKTXCNIA-BKTX AND SHALL MATCH EXISTING PEDESTRIAN LIGHTS.



PEDESTRIAN FOOTING DETAIL

TYPE II PEDESTRIAN LIGHT FIXTURE

LIGHTING NOTES

THE CONTRACTOR SHALL SUBMIT A LIST OF LIGHTING EQUIPMENT THAT IS PROPOSED FOR INSTALLATION. SHOP DRAWINGS WILL BE REQUIRED FOR LIGHT POLES AND LUMINAIRES

FOR REMOVAL OF STREET LIGHTS, CONTRACTOR TO REMOVE CONCRETE FOOTING AND LIGHT POLE. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF CONDUIT AND CABLE TO POWER SOURCE FOR EACH LIGHT THAT IS TO BE REMOVED. CONTRACTOR SHALL COORDINATE WITH CITY FOR POSSIBLE STOCKPILE OF REMOVED LIGHTING POLES.

ALL LIGHTS SHALL BE FED FROM UNDERGROUND.

INDIVIDUAL LUMINAIRES SHALL BE PROVIDED WITH A MOLDED IN-LINE FUSE CONNECTOR WITHIN THE POLE BASE AND BE SIZED TO FIT THE CONDUCTORS. FUSES SHALL BE 10-AMPRE CARTRIDGE. THE NEUTRAL CONDUCTOR SHALL NOT BE FUSED.

ALL PVC CONDUITS UNDER EXISTING OR PROPOSED PAVING SHALL BE SCH80.

ALL ELECTRICAL HANDHOLES SHALL BE IDOT LI-103, TYPE 1, 48" DEPTH.

LOCATIONS OF LIGHT POLES SHALL BE REVIEWED IN THE FIELD AT TIME OF CONSTRUCTION, AND SHALL BE MODIFIED AS NECESSARY TO AVOID UNNECESSARY IMPACTS TO EXISTING AND/OR PROPOSED UTILITIES.

LIGHT POLES SHALL BE FINISHED WITH A BLACK GALVANIZED POWDER TOP COAT.

ALL LIGHT POLE BASES SHALL HAVE MINIMUM OF 2 CONDUIT STUBOUTS.

LIGHT BASES SHALL BE 2 INCHES ABOVE MAXIMUM ADJACENT SIDEWALK GRADES.

ANY REMOVAL OF EXISTING CONDUIT SHALL BE INCIDENTAL TO THE ELECTRICAL CIRCUIT BID ITEM.

TYPE 1 FOOTINGS SHALL BE IDOT LI-201

TYPE 2 FOOTINGS SHALL BE AS SHOWN ON SHEET P.2.

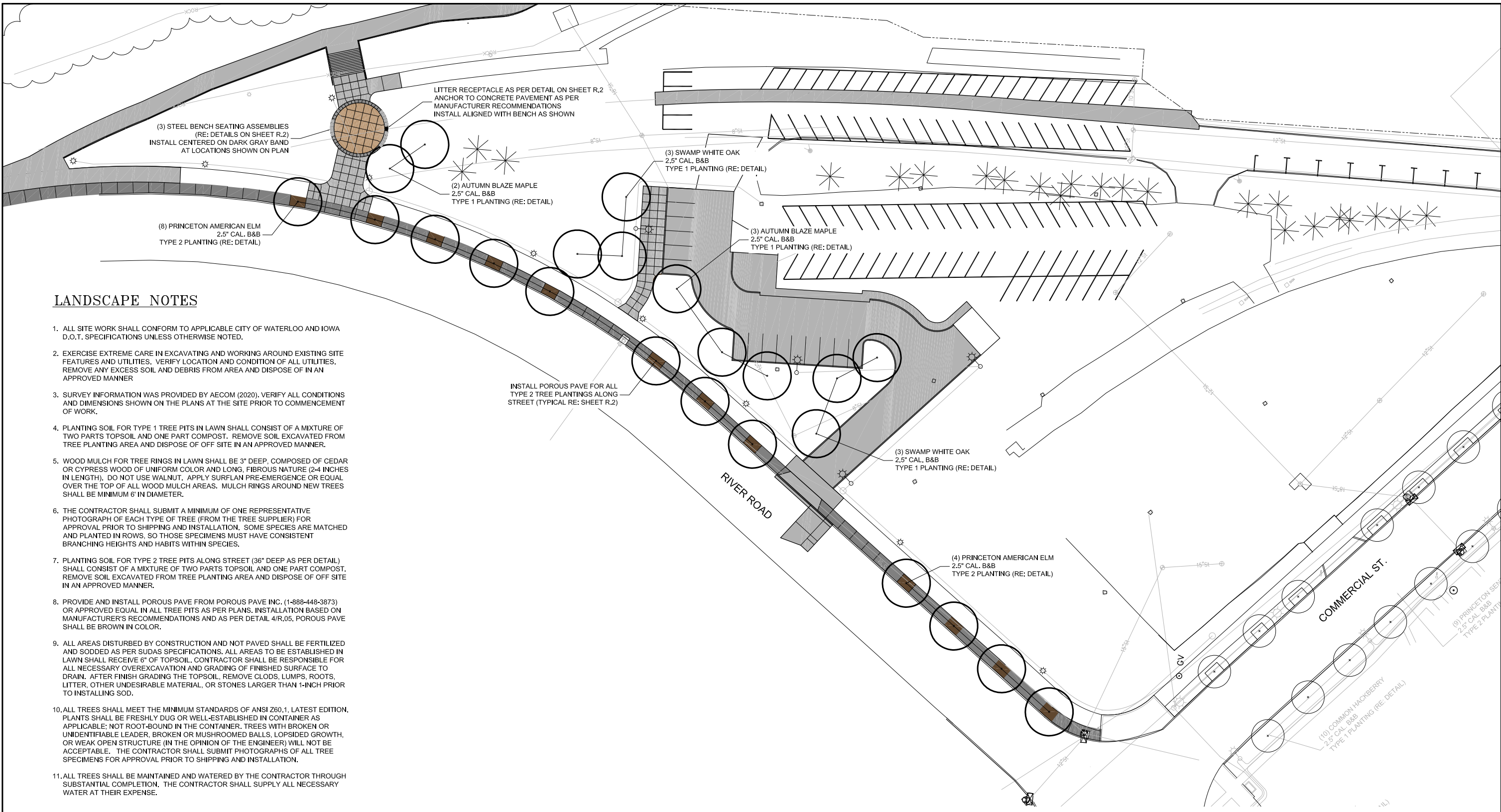
ESTIMATED QUANTITIES INCLUDED IN ELECTRICAL CIRCUIT BID ITEM:

2" PVC CONDUIT	1311 LF
3C6 CABLE IN NEW CONDUIT	1476 LF
GROUND AND TRACER CABLE, PULL ROPE	1476 LF
ELECTRICAL CONDUIT AND WIRING REMOVAL	335 LF

ESTIMATED PROJECT QUANTITIES

LUMINAIRE TYPE 1	4 EA
LUMINAIRE TYPE 2	9 EA
ELECTRIC HANDHOLE	4 EA
LIGHT POLE FOUNDATION REMOVAL	5 EA

QUANTITIES ARE FOR INFORMATIONAL AND ESTIMATING PURPOSES ONLY. VARIATIONS FROM THE QUANTITIES SHOWN SHALL NOT BY ITSELF BE CONSIDERED GROUNDS FOR CHANGE ORDER. CONTRACTOR SHALL BE PAID THE UNIT PRICE PER LINEAL FOOT OF ELECTRICAL CIRCUIT PLACE, MEASURED BETWEEN CABINETS, POLES AND/OR HANDHOLES, AND SHALL NOT INCLUDE MEASUREMENT FOR LENGTH OF CONNECTIONS TO LUMINAIRES IN POLES.



LANDSCAPE NOTES

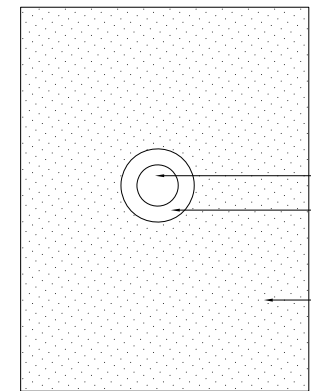
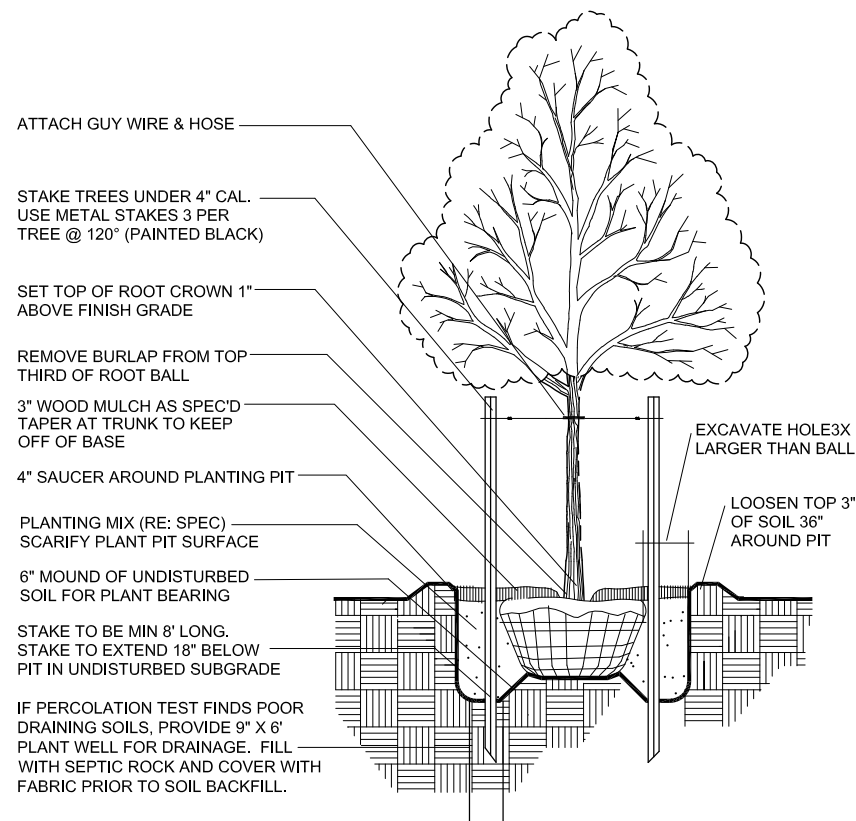
1. ALL SITE WORK SHALL CONFORM TO APPLICABLE CITY OF WATERLOO AND IOWA D.O.T. SPECIFICATIONS UNLESS OTHERWISE NOTED.
2. EXERCISE EXTREME CARE IN EXCAVATING AND WORKING AROUND EXISTING SITE FEATURES AND UTILITIES. VERIFY LOCATION AND CONDITION OF ALL UTILITIES. REMOVE ANY EXCESS SOIL AND DEBRIS FROM AREA AND DISPOSE OF IN AN APPROVED MANNER
3. SURVEY INFORMATION WAS PROVIDED BY AECOM (2020). VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AT THE SITE PRIOR TO COMMENCEMENT OF WORK.
4. PLANTING SOIL FOR TYPE 1 TREE PITS IN LAWN SHALL CONSIST OF A MIXTURE OF TWO PARTS TOPSOIL AND ONE PART COMPOST. REMOVE SOIL EXCAVATED FROM TREE PLANTING AREA AND DISPOSE OF OFF SITE IN AN APPROVED MANNER.
5. WOOD MULCH FOR TREE RINGS IN LAWN SHALL BE 3" DEEP, COMPOSED OF CEDAR OR CYPRESS WOOD OF UNIFORM COLOR AND LONG, FIBROUS NATURE (2-4 INCHES IN LENGTH). DO NOT USE WALNUT. APPLY SURFLAN PRE-EMERGENCE OR EQUAL OVER THE TOP OF ALL WOOD MULCH AREAS. MULCH RINGS AROUND NEW TREES SHALL BE MINIMUM 6" IN DIAMETER.
6. THE CONTRACTOR SHALL SUBMIT A MINIMUM OF ONE REPRESENTATIVE PHOTOGRAPH OF EACH TYPE OF TREE (FROM THE TREE SUPPLIER) FOR APPROVAL PRIOR TO SHIPPING AND INSTALLATION. SOME SPECIES ARE MATCHED AND PLANTED IN ROWS, SO THOSE SPECIMENS MUST HAVE CONSISTENT BRANCHING HEIGHTS AND HABITS WITHIN SPECIES.
7. PLANTING SOIL FOR TYPE 2 TREE PITS ALONG STREET (36" DEEP AS PER DETAIL) SHALL CONSIST OF A MIXTURE OF TWO PARTS TOPSOIL AND ONE PART COMPOST. REMOVE SOIL EXCAVATED FROM TREE PLANTING AREA AND DISPOSE OF OFF SITE IN AN APPROVED MANNER.
8. PROVIDE AND INSTALL POROUS PAVE FROM POROUS PAVE INC. (1-888-448-3873) OR APPROVED EQUAL IN ALL TREE PITS AS PER PLANS. INSTALLATION BASED ON MANUFACTURER'S RECOMMENDATIONS AND AS PER DETAIL 4/R.05. POROUS PAVE SHALL BE BROWN IN COLOR.
9. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT PAVED SHALL BE FERTILIZED AND SODDED AS PER SUDAS SPECIFICATIONS. ALL AREAS TO BE ESTABLISHED IN LAWN SHALL RECEIVE 6" OF TOPSOIL. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY OVEREXCAVATION AND GRADING OF FINISHED SURFACE TO DRAIN. AFTER FINISH GRADING THE TOPSOIL, REMOVE CLOUDS, LUMPS, ROOTS, LITTER, OTHER UNDESIRABLE MATERIAL, OR STONES LARGER THAN 1-INCH PRIOR TO INSTALLING SOD.
10. ALL TREES SHALL MEET THE MINIMUM STANDARDS OF ANSI Z60.1, LATEST EDITION. PLANTS SHALL BE FRESHLY DUG OR WELL-ESTABLISHED IN CONTAINER AS APPLICABLE; NOT ROOT-BOUND IN THE CONTAINER. TREES WITH BROKEN OR UNIDENTIFIABLE LEADER, BROKEN OR MUSHROOMED BALLS, LOPSIDED GROWTH, OR WEAK OPEN STRUCTURE (IN THE OPINION OF THE ENGINEER) WILL NOT BE ACCEPTABLE. THE CONTRACTOR SHALL SUBMIT PHOTOGRAPHS OF ALL TREE SPECIMENS FOR APPROVAL PRIOR TO SHIPPING AND INSTALLATION.
11. ALL TREES SHALL BE MAINTAINED AND WATERED BY THE CONTRACTOR THROUGH SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER AT THEIR EXPENSE.

1 LANDSCAPE PLAN
SCALE IN FEET 0 30 60 90



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct personal supervision and responsible charge. I am a duly licensed Professional Landscape Architect in the State of Iowa.

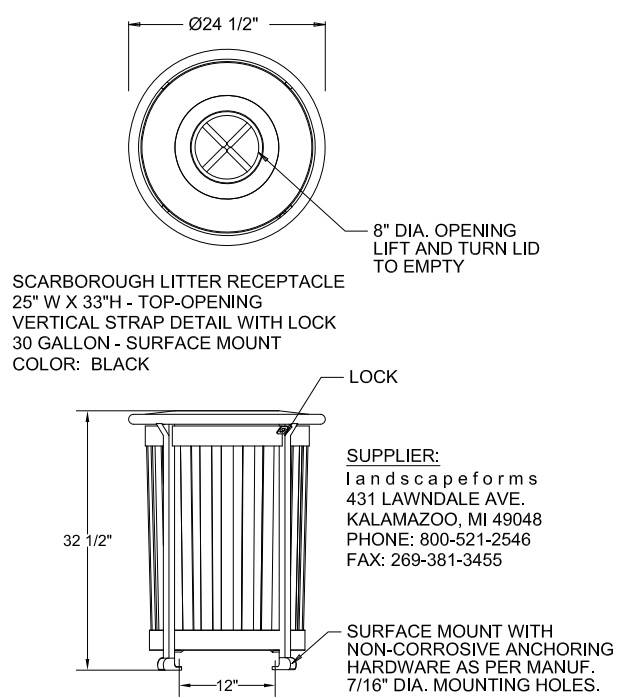
Mark G. Kuiper 08/13/21
 Mark G. Kuiper, ASLA, LEED AP Date
 License Number 00413
 My license renewal date is June 30, 2023.
 Pages or sheets covered by this seal:
 ALL R-SERIES PLAN SHEETS



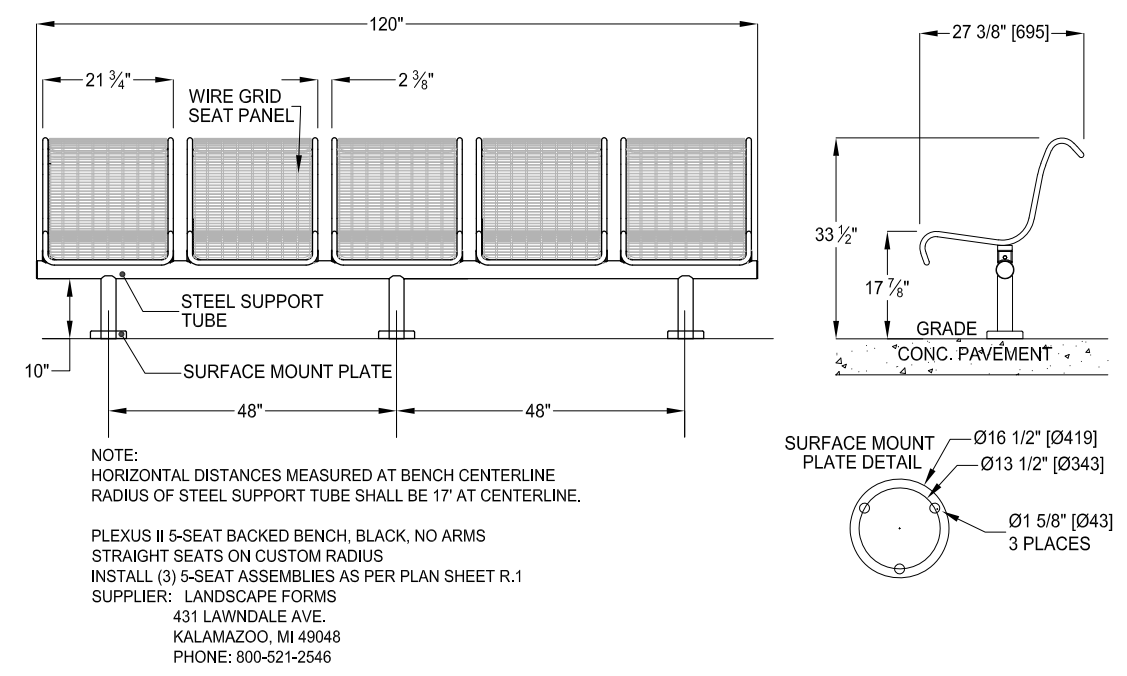
- NOTES**
1. DURING SIDEWALK REMOVAL, IF TREE ROOTS OF AN EXISTING NEARBY TREE 2" IN DIAMETER OR LARGER ARE FOUND, THE CONTRACTOR SHALL REQUEST A TREE ROOT INSPECTION BY THE CITY FORESTER (319-291-4370). ONLY THE CITY FORESTRY CREW SHALL PERFORM ANY NECESSARY WORK ON TREE ROOTS LARGER THAN 2" IN DIAMETER. THE CITY OF WATERLOO LEISURE SERVICES DEPARTMENT DOES ALLOW CONTRACTORS TO REMOVE TREE ROOTS IF THE TREE ROOTS ARE LESS THAN 2" IN DIAMETER.
 2. THE CONTRACTOR SHALL NOT DISTURB EXISTING VEGETATION UNLESS NECESSARY FOR CONSTRUCTION.
 3. NOTIFY OWNER'S REPRESENTATIVE IN ANY CASE WHERE THE CONTRACTOR FEELS GRADING OR OTHER CONSTRUCTION CALLED FOR BY THE CONTRACT DOCUMENTS MAY DAMAGE EXISTING TREES.
 4. POROUS PAVE MUST BE INSTALLED BY A CERTIFIED INSTALLER. SUBMIT MANUFACTURER CERTIFICATION TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

1 TYPE 1 TREE PLANTING - LAWN
NOT TO SCALE

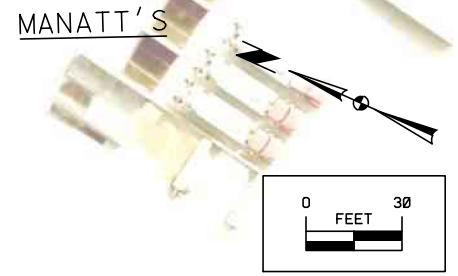
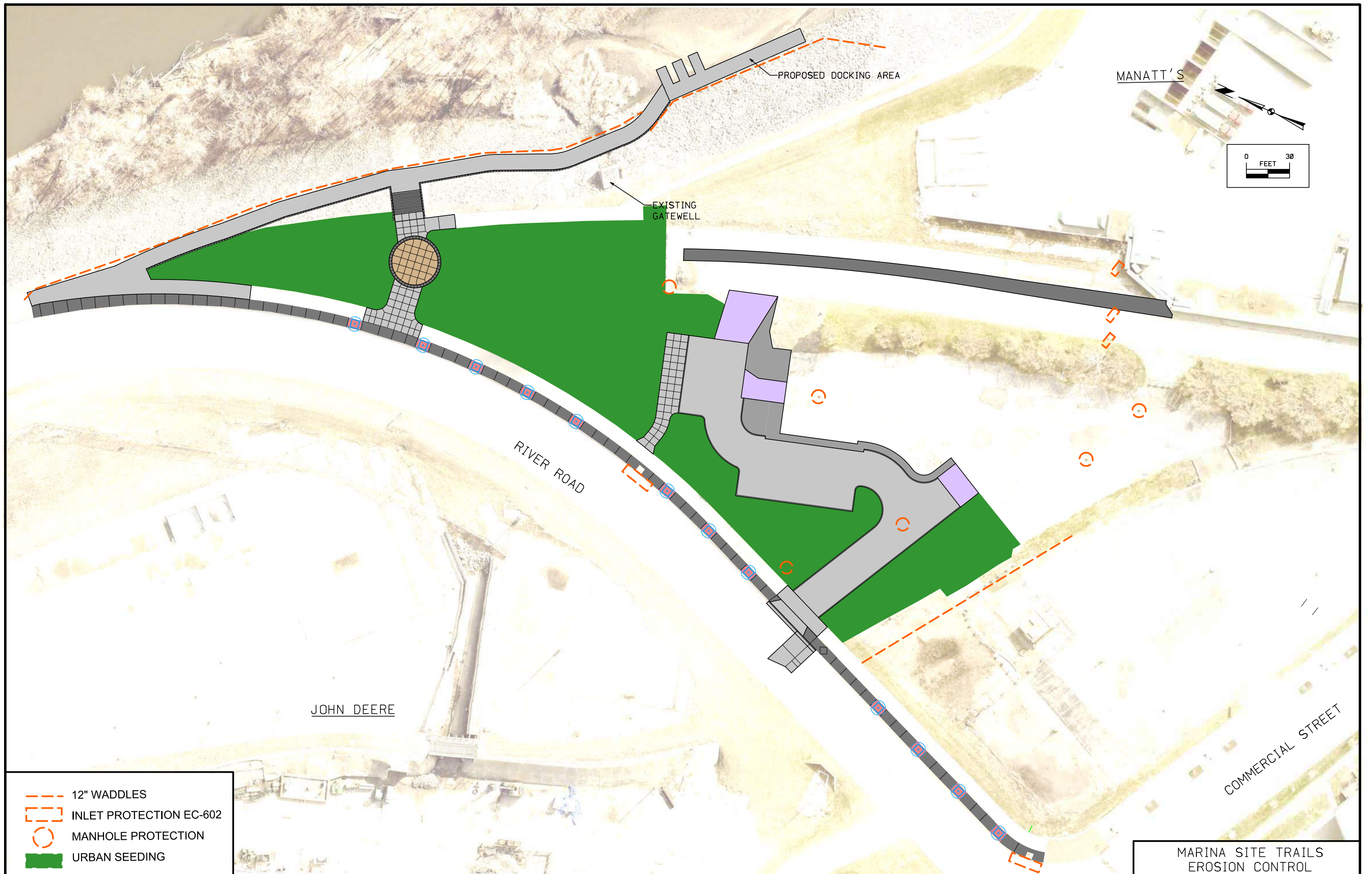
2 TYPE 2 TREE PLANTING - PLANTER IN CONCRETE WALK
NOT TO SCALE



3 LITTER RECEPTACLE
NOT TO SCALE



4 STEEL BENCH SEATING ASSEMBLY - SURFACE MOUNT
NOT TO SCALE



- - - 12" WADDLES
- [] INLET PROTECTION EC-602
- MANHOLE PROTECTION
- URBAN SEEDING

**MARINA SITE TRAILS
EROSION CONTROL**



- 12" WADDLES
- INLET PROTECTION EC-602
- MANHOLE PROTECTION
- FLOATING SILT CURTAIN EC-202
- URBAN SEEDING

MARINA SITE TRAILS
EROSION CONTROL

KAYAK Launch System

1. Provide launch capabilities for water elevations between 840.0 and 841.5 (Normal summer water levels).
2. No protrusions (railings/grab bars) above top of dock elevation.
3. Floating system shall be restrained to prevent floating above top of dock during times of high water. Attachment to dock walls shall be adequate to resist uplift of system during flooding.
4. Dock Dimension of 5' may be adjusted to accommodate selected kayak launch system.
5. Potential vendors of kayak launch system include, but are not limited to:
 - a. FWM Docks
 - b. The Dock Doctors
 - c. Yakport
 - d. EZ-Dock
6. Shop Drawings/Catalog Cuts shall be submitted for approval by Engineer.

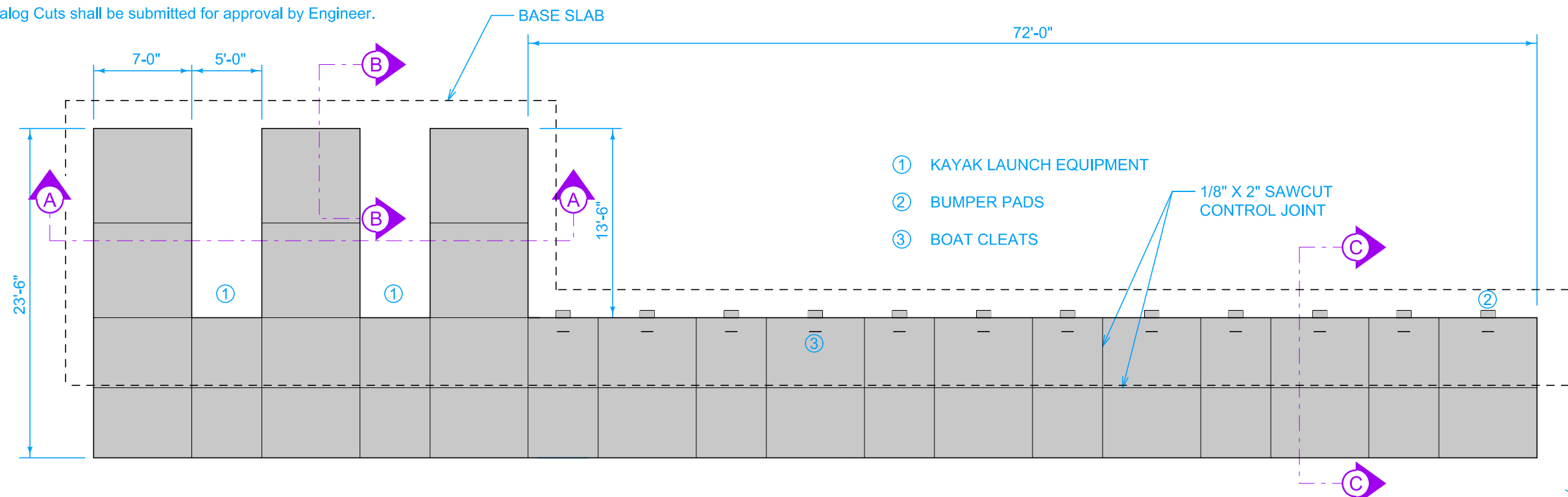
Stainless Steel Dock Cleats

1. Cleats shall be Type 316 Stainless Steel.
2. Cleats shall be 8".
3. Cleats shall have minimum of 2 attachment points into concrete dock, with minimum 2000 lbs pullout strength.
4. Cleats shall be open base.
5. Shop Drawings/Catalog Cuts shall be submitted for approval by Engineer.

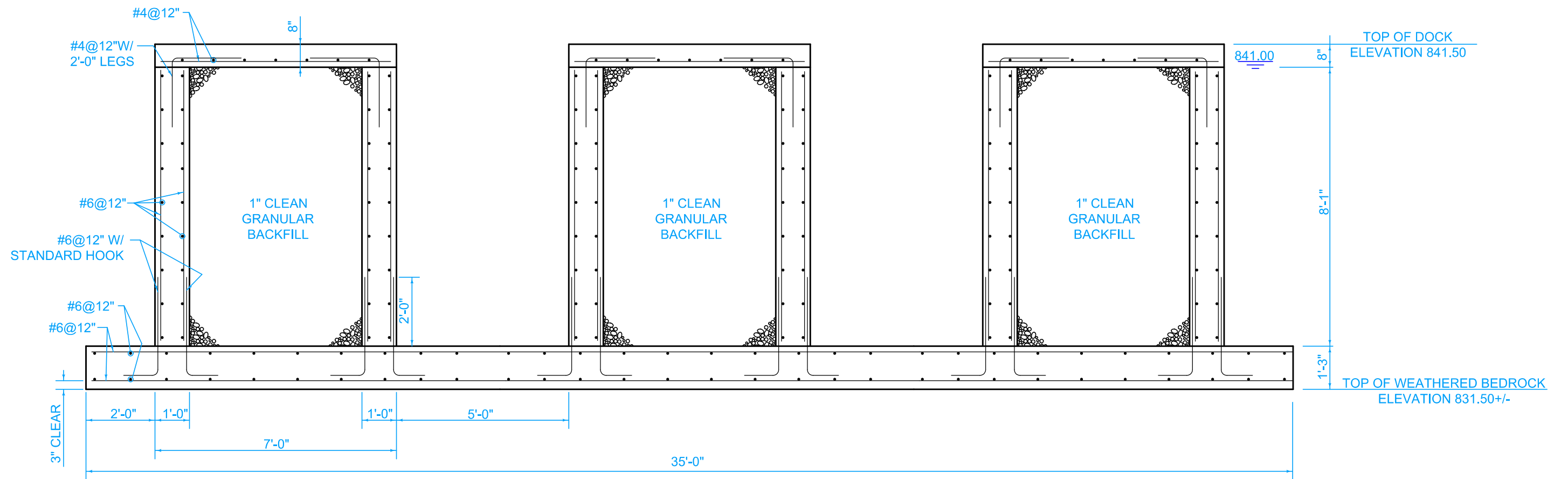
Bumper Pads

1. Bumper pads shall be 3"x4"x4".
2. Bumper pads shall be UV-Resistant, heavy duty rubber, intended for permanent installation.
3. Bumper pads shall be mounted vertically, 1" below top of dock.
4. Minimum of 3 attachment points into concrete dock, with minimum 2000 lbs pullout strength each.
5. Shop Drawings/Catalog Cuts shall be submitted for approval by Engineer.

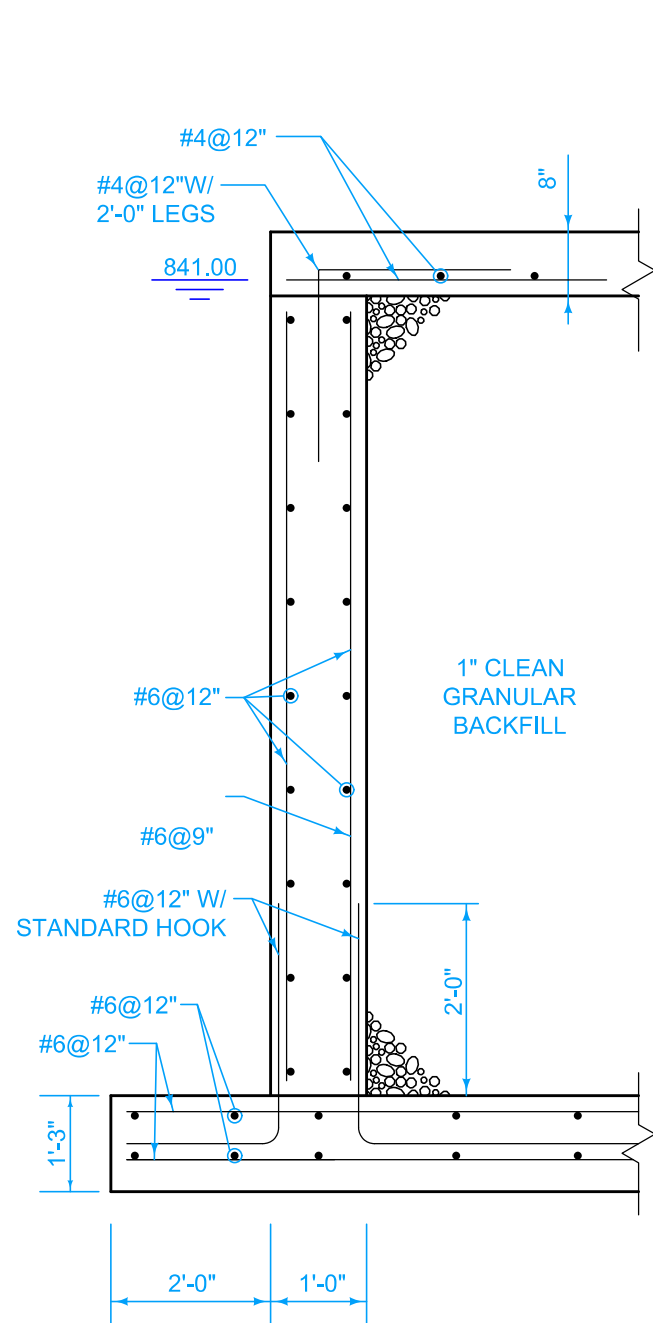
1. ALL STEEL 2" CLEAR UNLESS OTHERWISE NOTED.
2. STRUCTURAL CONCRETE SHALL BE CLASS C, IDOT SPEC 2403, F_c=3500 PSI. USE CLASS 3 AGGREGATE.
3. BAR CHAIRS SPACED AT NOT OVER 3' C-C IN EITHER DIRECTION ARE TO BE USED TO SUPPORT ALL FOOTING REINFORCING.
4. PROPOSED BOTTOM FOOTING ELEVATIONS ARE BASED ON ANTICIPATED TOP OF ROCK ELEVATIONS AND SHALL BE ADJUSTED BASED ON ACTUAL ROCK ELEVATIONS.
5. THE WEATHERED BED ROCK SHALL HAVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 3500 PSF. CONTRACTOR SHALL UTILIZE INDEPENDENT CONSULTANT TO CONFIRM BEARING CAPACITY.
6. GRANULAR BACKFILL TO MEET GRADATION 13A.
7. REINFORCING STEEL SHALL BE ASTM A615 GRADE 60



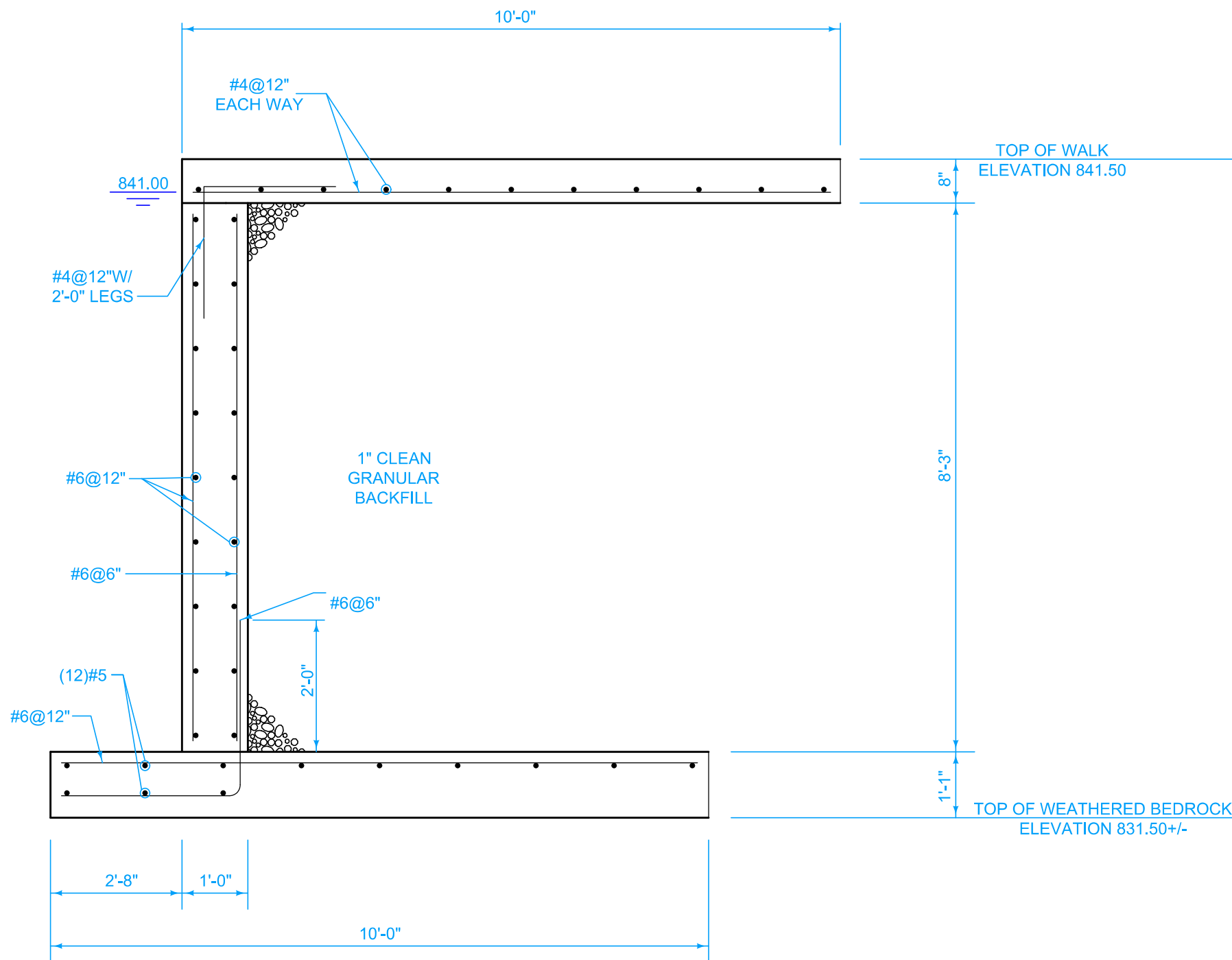
PLAN VIEW: KAYAK TRAIL DOCK



SECTION A-A

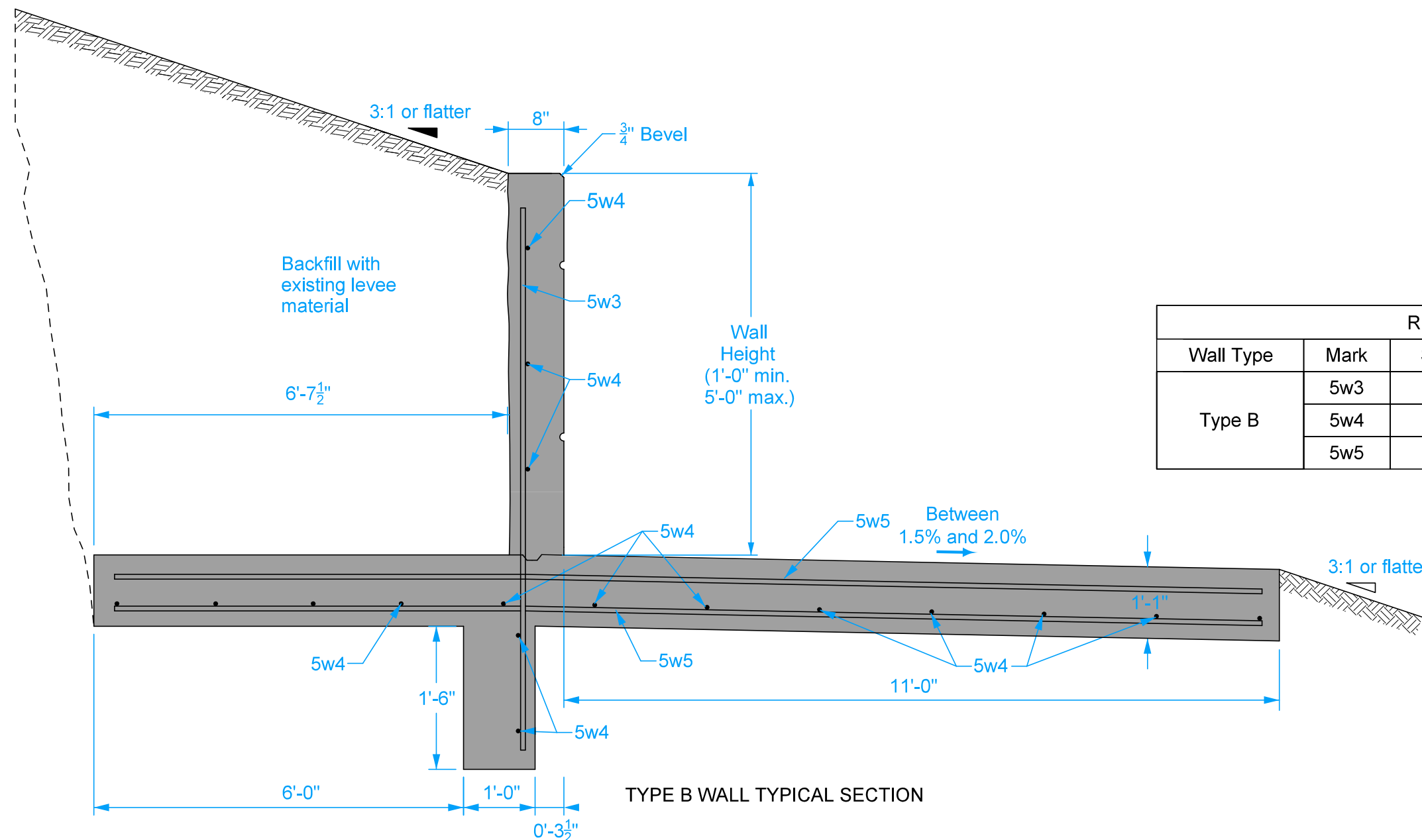


SECTION B-B



SECTION C-C

Provide a minimum concrete cover to near reinforcement of 2 inches, except at bottom of footing provide 4 inches. Provide 2 inches minimum cover at the ends of bars.

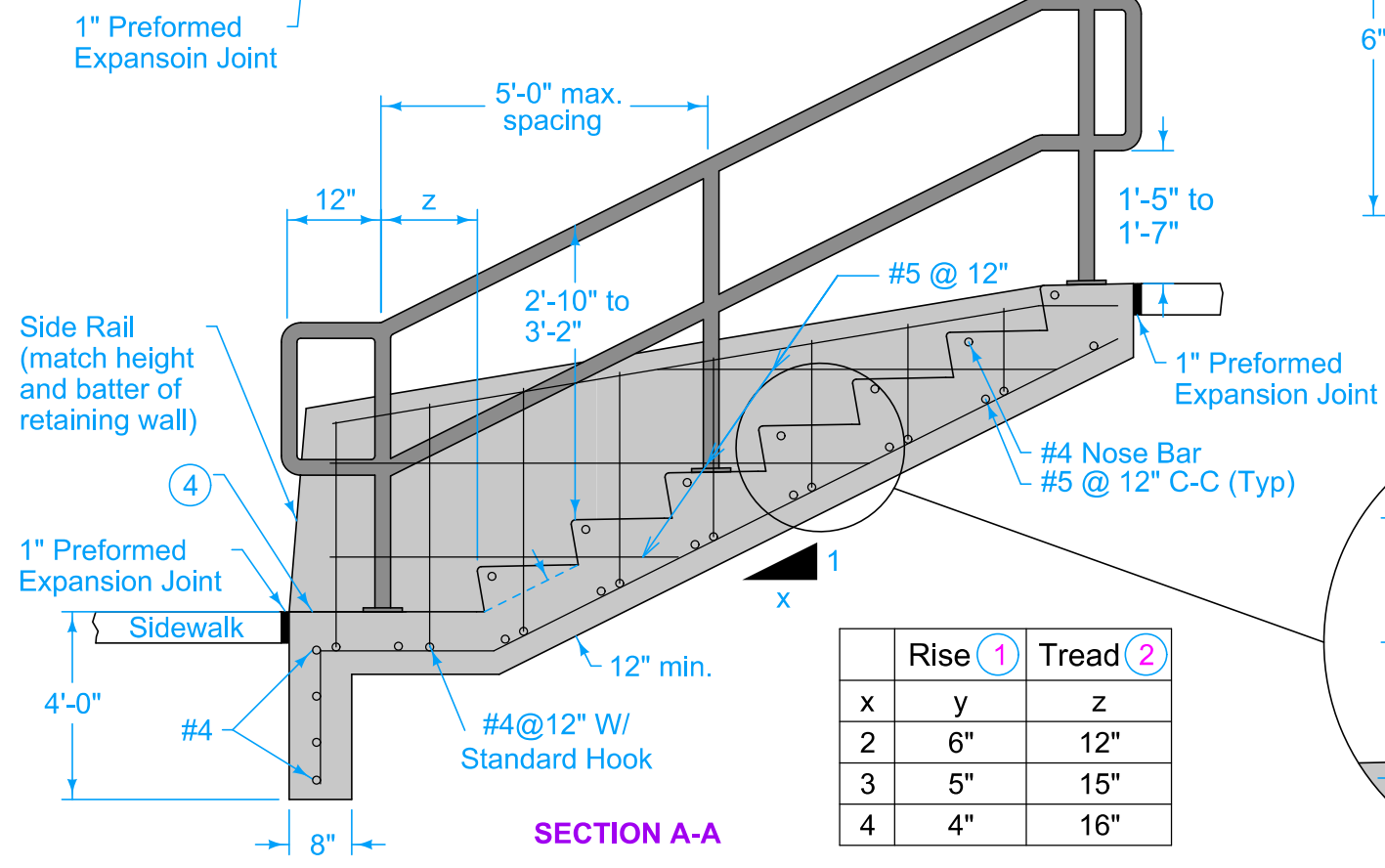
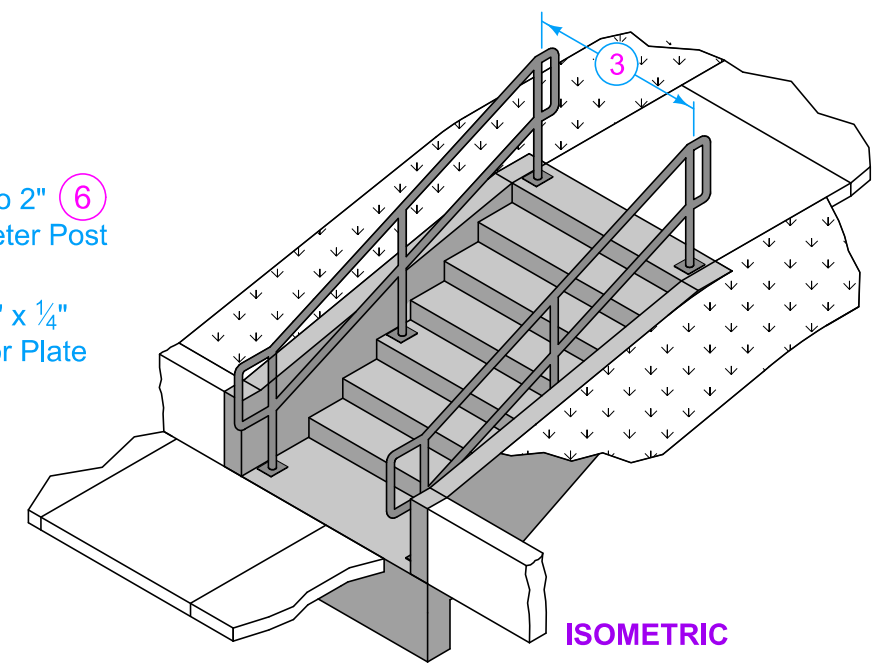
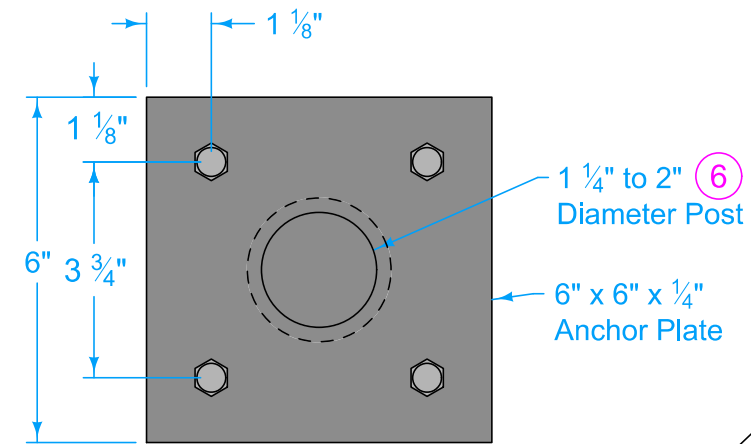
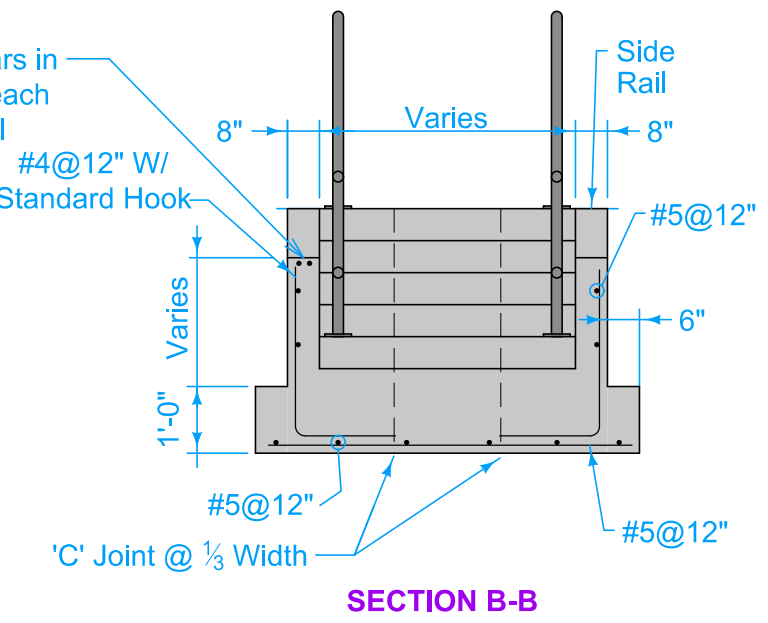
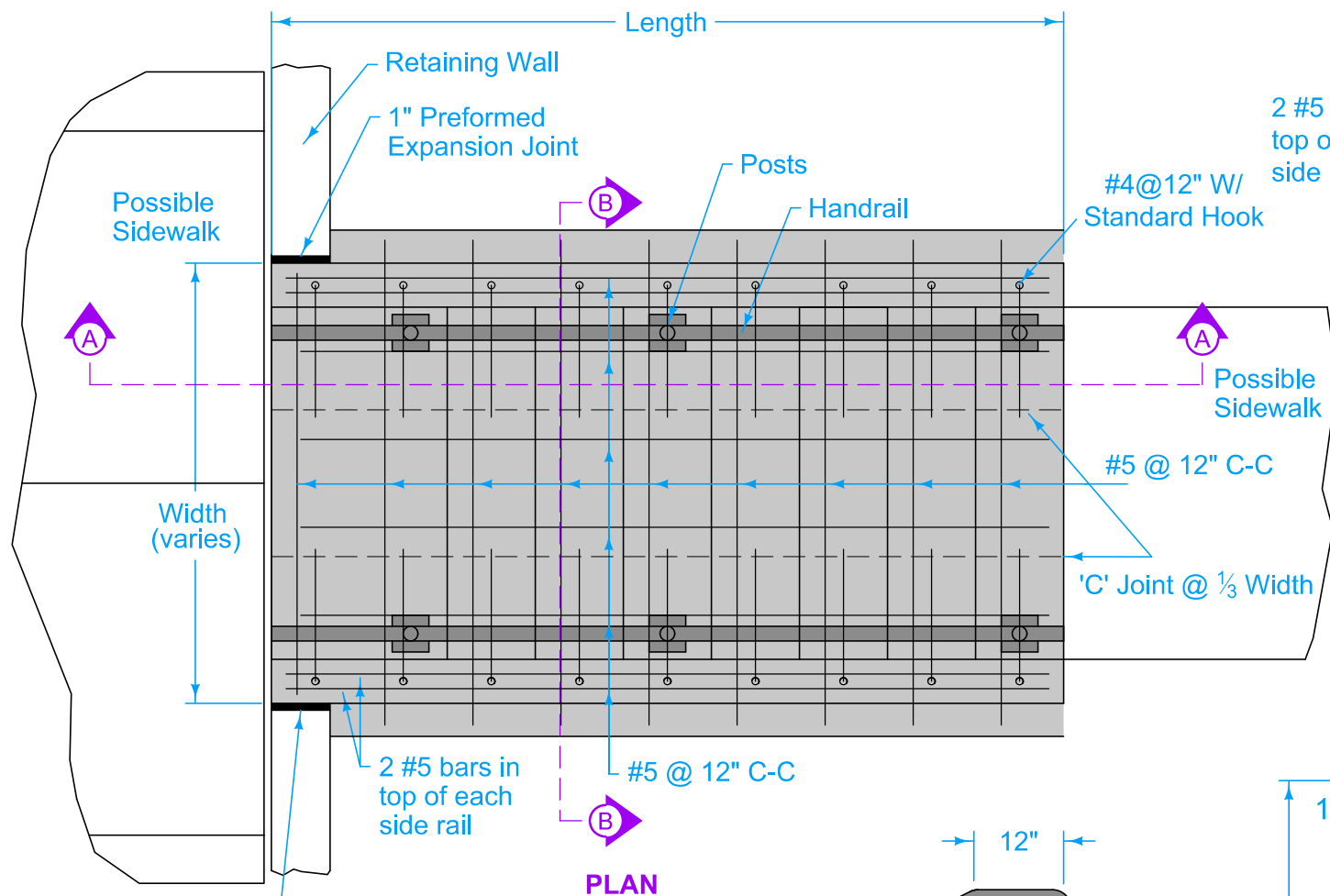


REINFORCING BAR LIST					
Wall Type	Mark	Size	Shape	Length	Spacing
Type B	5w3	5	—	Wall Height + 2'-0"	9"
	5w4	5	—	Variable	12"
	5w5	5	—	17'-11 1/2"	18"

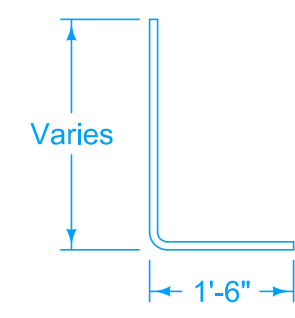
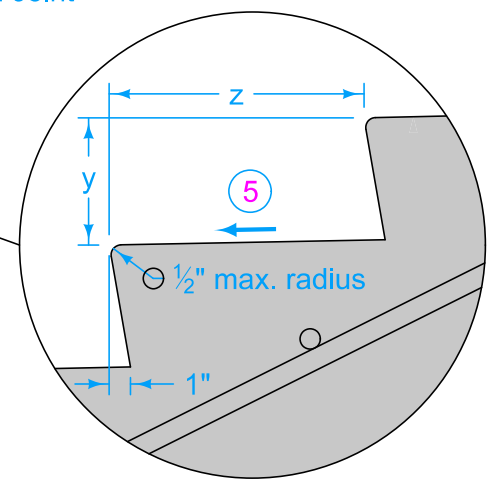
TYPE B WALL TYPICAL SECTION

MODIFIED STANDARD ROAD PLAN	REVISION	
	2	10-20-15
	MI-221	
SHEET 2 of 2		
MODIFICATIONS: Dimensions and rebars changed to meet U.S. COE Standards.		
COMBINED RETAINING WALL - SIDEWALK		

FIGURE 9072.221 SHEET 2 OF 2



	Rise ①	Tread ②
x	y	z
2	6"	12"
3	5"	15"
4	4"	16"



- Provide a minimum of 2 inches of cover for all reinforcing.
- Ensure all risers are an equal height and all treads are an equal depth within a flight of stairs.
- ① Minimum riser height is 4 inches. Maximum riser height is 7 inches.
 - ② Minimum tread depth is 11 inches.
 - ③ Match existing sidewalk width.
 - ④ Construct cross slope of landing to match adjacent sidewalk.
 - ⑤ Slope tread 1% minimum to 2% maximum in any direction.
 - ⑥ Weld post to anchor plate with 1/4 inch weld. Grind weld to provide smooth surface, free of burrs.

FIGURE 9080.102 SHEET 2 OF 2

<h1>MODIFIED STANDARD ROAD PLAN</h1>	REVISION
	2 10-16-18
	9080.102
SHEET 2 of 2	
MODIFICATIONS: Side rail dimension changed and reinforcing changed.	
<h2>TYPE B CONCRETE STEPS WITH HANDRAIL</h2>	

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- · — · — · — Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- · · · · Additional Topsoil Removal
- Subgrade Treatment
- Granular Shoulder
- Pavement
- - - - - Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS —— Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10 —— Class 10 Materials
- SEL LO —— Select Loams And Clay-Loams
- SEL SA —— Select Sand
- UNS A —— Unsuitable Type A Disposal
- UNS B —— Unsuitable Type B Disposal
- UNS C —— Unsuitable Type C Disposal
- SHALE —— Shale
- WASTE —— Waste
- B&W LS —— Broken and Weathered Rock
- ROCK —— Solid Rock
- BLDRS —— Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

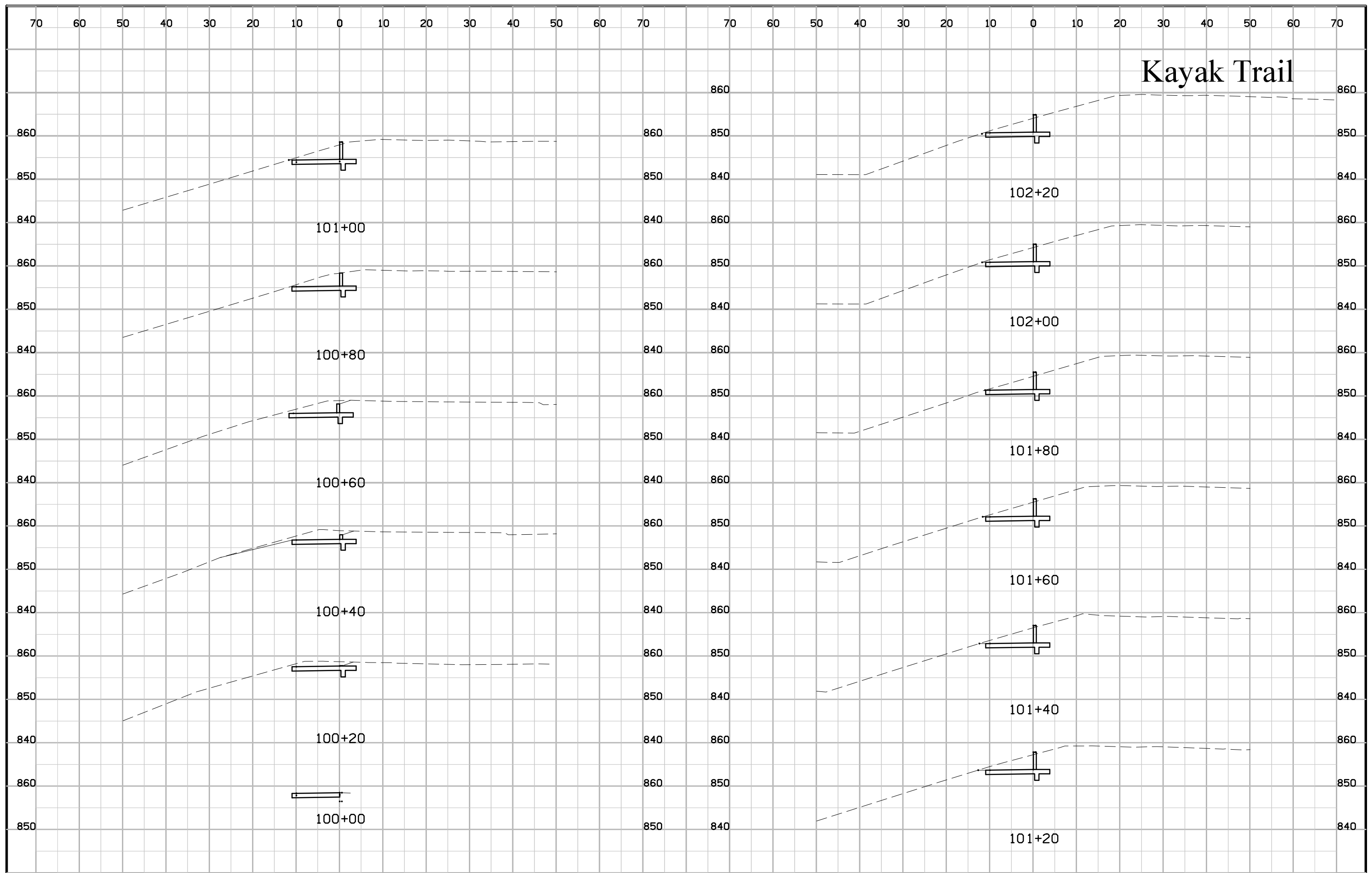
SYMBOL LEGEND OF CROSS SECTION SHEETS

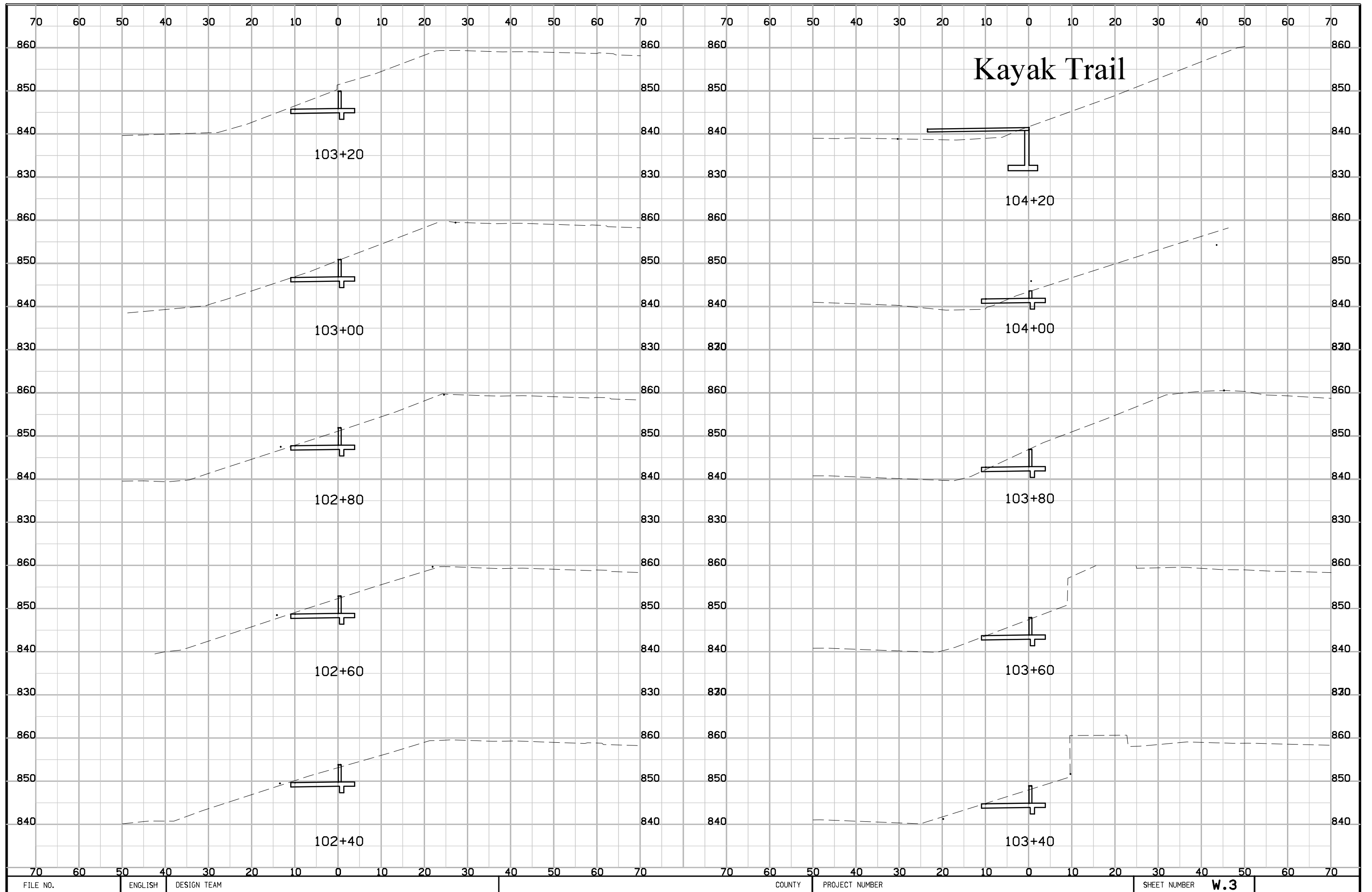
- Existing ROW
|
Existing Right-of-Way Limit
- Proposed ROW
|
Proposed Right-of-Way Limit
- Temporary ROW
|
Temporary Right-of-Way Limit

**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

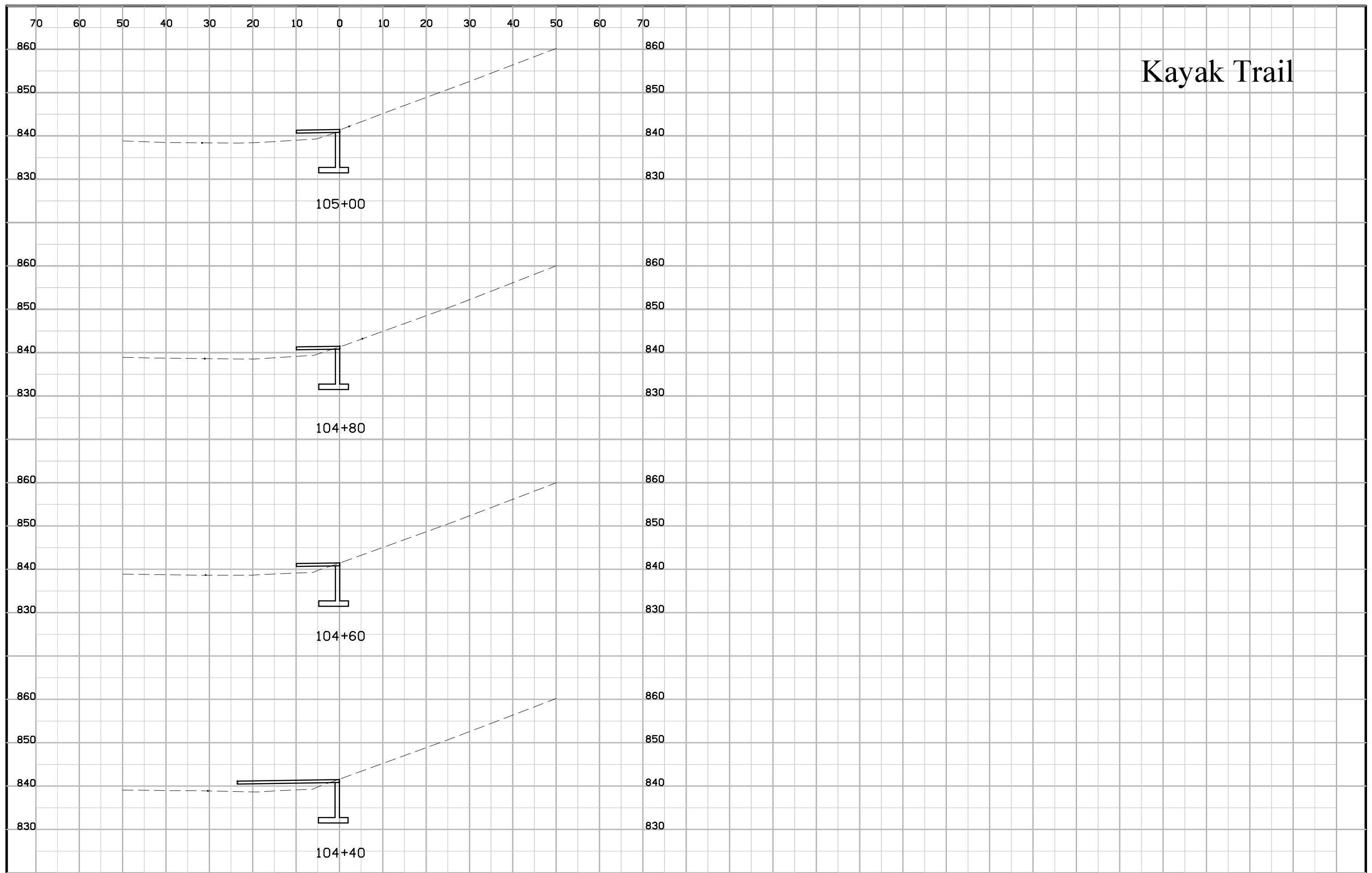
(COVERS SHEET SERIES W, X, Y, & Z)

Kayak Trail





Kayak Trail



FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER	W.4
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