A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: May 17, 2016
Date of Addendum: May, 13 2016

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
011	57-1001-105	BRIDGE NEW - PPCB	LINN	NHSX-100-1(93)--3H-57 NHSX-100-1(94)--3H-57 NHSX-100-1(95)--3H-57 NHSX-100-1(96)--3H-57 NHSX-100-1(97)--3H-57 NHSX-100-1(98)--3H-57 NHSX-100-1(104)--3H-57 NHSX-100-1(105)--3H-57 NHSX-100-1(108)--3H-57	17MAY011.A03

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

Change Proposal Line No. 1800:
From: 2312-8260201 GRANULAR SURFACING ON ROAD, CLASS C GRAVEL
To: 2312-8260051 GRANUALR SURFACING ON ROAD, CLASS A CRUSHED STONE

Change Proposal Line No. 1810:
From: 2315-8275030 SURFACING DRIVEWAY, CLASS C GRAVEL
To: 2315-8275025 SURFACING, DRIVEWAY, CLASS A CRUSHED STONE

Add Proposal Line No. 2931 2107-3825025 GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN; 71,758.000 CY

If the above changes are not made, they will be made as shown here.

Make the following changes to the NHSX-100-1(95)--3H-57 plans:

Replace plan sheets C.1, C.2, C.3, C.4, C.5, C.6, C.7, C.8, C.9, C.19, CS.3, Q.5, Q.8, Q.14, Q.27, Q.31, Q.41, Q.45, & Q.47 with the attached.

- Note allowing for the substitution of modified subbase in lieu of granular subbase for local roadway construction and paving
- Revision in bid items to reflect Class A aggregate surfacing rather than the Class C originally specified due to local availability considerations
- Added bid item and updated plan notes for optional granular working blankets
- An update to Tabulation 104-3 and Flooded Backfill Quantity to correct a typo we caught on Sheet C.19.

100-1D
10-18-05

PROJECT DESCRIPTION

This project includes the grading of proposed IA 100 between Station 743+75.00 and Station 811+00.00, the removal, grading, and paving of E Avenue, the grading of the E Avenue Interchange ramps, the paving of a portion of E Avenue Interchange ramps, the removal, grading, and paving of 80th Street SW from just south of 1st Avenue to the existing bridge over Morgan Creek north E Avenue, the grading and surfacing of relocated Berger Lane, and the relocation of a Morgan Creek tributary waterway.

Construction of the E Avenue bridges over IA 100 and Morgan Creek, the E Avenue Ramp A and D bridges over Morgan Creek, a tangent pile retaining wall, dual IA 100 mainline bridges over Morgan Creek, a 12' x 4' x 67' RCB Culvert under Berger Lane, and a 8' x 7' x 163' RCB culvert under E Avenue are "By Others" and tied to this contract.

100-1C
04-17-12

ESTIMATED PROJECT QUANTITIES
(UP TO A 5 DIVISION PROJECT)

Division 1: STATE OF IOWA
Division 2: CITY OF CEDAR RAPIDS

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
1	2101-0850001	CLEARING AND GRUBBING	ACRE	75										
2	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT	CY	59385										
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	438657										
4	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	23580										
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS AND ROCK FRAGMENTS	CY	50										
6	2102-4560000	LOCATING TILE LINES	STA	84										
7	2102-5020010	OBLITERATE OLD ROADBED	STA	2.8										
8	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	120437										
9	2107-0875000	COMPACTION WITH MOISTURE AND DENSITY CONTROL	CY	3344										
10	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	373246										
11	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN	CY	71758										
12	2111-8174100	GRANULAR SUBBASE	SY	26229										
13	2115-0100000	MODIFIED SUBBASE	CY	1221										
14	2121-7425010	GRANULAR SHOULDERS, TYPE A	TON	1539										
15	2122-5190008	PAVED SHOULDER, P.C. CONCRETE, 8 IN.	SY	318										
16	2122-5190010	PAVED SHOULDER, P.C. CONCRETE, 10 IN.	SY	757										
17	2122-5190501	PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PANEL FOR BRIDGE END DRAIN)	SY	267										
18	2122-5191005	REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER	SY	243										
19	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	112										
20	2123-7450020	SHOULDER FINISHING, EARTH	STA	3.4										
21	2301-0690203	BRIDGE APPROACH, BR-203	SY	2343										
22	2301-0690210	BRIDGE APPROACH, TWO LANE	SY	278										
23	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C CLASS 3 DURABILITY, 8 IN.	SY	23053.4										
24	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C CLASS 3 DURABILITY, 10 IN.	SY	2434.4										
25	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES	LS	1										
26	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	3278										
27	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	112										
28	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1										
29	2402-0425030	GRANULAR BACKFILL	CY	3344										
30	2402-0425040	FLOODED BACKFILL	CY	2803										
31	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	2651										
32	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE	SY	6255										
33	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EA	3										
34	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EA	1										
35	2416-0100021	APRONS, CONCRETE, 21 IN. DIA.	EA	1										
36	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EA	22										
37	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EA	7										
38	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EA	2										
39	2416-0102242	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.	EA	4										
40	2416-0102254	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 54 IN.	EA	4										
41	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	822										
42	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.	LF	464										
43	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.	LF	198										
44	2416-1200242	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.	LF	164										
45	2416-1200254	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 54 IN.	LF	112										
46	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	156										
47	2416-1245024	CULVERT, 3750D CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	226										
48	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.	EA	8										
49	2422-0360036	APRONS, UNCLASSIFIED, 36 IN. DIA.	EA	6										
50	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	150										
51	2422-1723036	CULVERT, UNCLASSIFIED ROADWAY PIPE, 36 IN. DIA.	LF	126										
52	2435-0250802	INTAKE, SW-508, WELL ONLY	EA	4										
53	2435-0251002	INTAKE, SW-510, WELL ONLY	EA	8										
54	2435-0254600	INTAKE, SW-546	EA	2										
55	2435-0254602	INTAKE, SW-546, WELL ONLY	EA	3										
56	2435-0254900	BARRIER INTAKE, SW-549	EA	3										
57	2435-0600010	MANHOLE ADJUSTMENT, MINOR	EA		1									
58	2435-0600020	MANHOLE ADJUSTMENT, MAJOR	EA		2									
59	2435-0900000	BRIDGE END DRAIN, SW-538	EA	6										
60	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	12312										
61	2502-8212204	SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA.	LF	457										
62	2502-8212208	SUBDRAIN, PERFORATED PLASTIC PIPE, 8 IN. DIA.	LF	432										
63	2502-8221304	SUBDRAIN OUTLET, DR-304	EA	87										

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(UP TO A 5 DIVISION PROJECT)

Division 1: STATE OF IOWA
Division 2: CITY OF CEDAR RAPIDS

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
64	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 15 IN.	LF	1659										
65	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 18 IN.	LF	1199										
66	2503-0114221	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 21 IN.	LF	36										
67	2503-0114415	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 3000D (CLASS IV), 15 IN.	LF	40										
68	2503-0500401	BRIDGE END DRAIN, DR-401	EA	10										
69	2504-0136012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, (DIP), 12 IN.	LF		222									
70	2504-0136036	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, (DIP), 36 IN.	LF		566									
71	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	141										
72	2505-4008300	STEEL BEAM GUARDRAIL	LF	319										
73	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION	EA	7										
74	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EA	7										
75	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EA	5										
76	2506-4984000	FLOWABLE MORTAR	CY	177										
77	2507-3250005	ENGINEERING FABRIC	SY	6327.5										
78	2507-6800061	REVETMENT, CLASS E	TON	3376.8										
79	2507-8029000	EROSION STONE	TON	1903.9										
80	2510-6745850	REMOVAL OF PAVEMENT	SY	8880.7										
81	2513-0001040	CONCRETE BARRIER, BA-104	LF	415.5										
82	2513-0001070	CONCRETE BARRIER RAIL, BA-107	EACH	2										
83	2513-0475000	CONCRETE BARRIER TRANSITION SECTION	EA	3										
84	2513-2350010	CONCRETE BARRIER (PEDESTRIAN/TRAFFIC)	LF	81.7										
85	2518-6891810	PERMANENT ROAD CLOSURE, RURAL, SI-181	LF	24										
86	2518-6910000	SAFETY CLOSURE	EA	41										
87	2519-4200140	REMOVAL OF FENCE, FIELD	LF	926										
88	2520-3350010	FIELD LABORATORY	EA	1										
89	2520-3350015	FIELD OFFICE	EA	1										
90	2523-0000100	LIGHTING POLE	EA	6										
91	2523-0000200	ELECTRICAL CIRCUIT	LF	1730										
92	2523-0000310	HANDHOLE+JUNCTION BOX	EA	15										
93	2523-0000400	CONTROL CABINET	EA	1										
94	2524-6765110	REMOVAL OF TYPE A SIGN	EA	3										
95	2524-9275222	WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN.	LF	80										
96	2524-9325100	TYPE A SIGNS, SHEET ALUMINUM	SF	37										
97	2524-9325150	INSTALL TYPE A SIGN	EACH	5										
98	2526-8285000	CONSTRUCTION SURVEY	LS	1										
99	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	299										
100	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EA	8										
101	2528-8445110	TRAFFIC CONTROL	LS	1										
102	2533-4980005	MOBILIZATION	LS	1										
103	2538-6970000	SALVAGE, REMOVAL, AND DISPOSAL OF OBSTRUCTIONS ON PARCEL NO. 35	LS	1										
104	2551-0000230	PERMANENT CRASH CUSHION, SEVERE USE (SU)	EA	1										
105	2551-0000300	PERMANENT CRASH CUSHION SPARE PARTS KIT	EA	1										
106	2554-0112024	WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN.	LF		448									
107	2554-0122024	WATER MAIN, TRENCHLESS, DUCTILE IRON PIPE (DIP), 24 IN.	LF		186									
108	2554-0132024	WATER MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN.	LF		744									
109	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 45 DEGREE BEND	EA		3									
110	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 22.5 DEGREE BEND	EA		1									
111	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 11.25 DEGREE BEND	EA		5									
112	2554-0210201	FIRE HYDRANT ASSEMBLY, WM-201	EA		3									
113	2554-0212020	VALVE BOX EXTENSION	EA		14									
114	2590-0000020	PROJECT MANAGEMENT	LS	1										
115	2599-9999003	RETAINING WALL BACKFILL, CLAY	CY	606										
116	2599-9999005	TAPPING VALVE ASSEMBLY, 24 IN.	EA		1									
117	2599-9999005	VALVE, AIR RELEASE, DIP	EA		2									
118	2599-9999005	TRANSMISSI0N MAIN HOT TAPS	EA		2									
119	2599-9999009	WATER MAIN ABANDONMENT, 24 IN.	LF		1310									
120	2599-9999009	BOULDER TOE PROTECTION	LF	491										
121	2599-9999010	CATHODIC PROTECTION	LS		1									
122	2599-9999014	INTEGRAL THIN VENEER BRICK FOR STRUCTURAL CONCRETE	SF	91.6										
123	2601-2634100	MULCHING	AC	51.3										
124	2601-2636015	NATIVE GRASS SEEDING	AC	7.5										
125	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	AC	47										
126	2602-0000020	SILT FENCE	LF	8240.2										
127	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	16647										
128	2602-0000050	SILT BASINS	EA	44										
129	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	8845										
130	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	1769										
131	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE	LF	1900										
132	2602-0000160	ROCK CHECK DAM	LF	1664.7										
133	2602-0000170	MAINTENANCE OF ROCK CHECK DAM	EACH	315										
134	2602-0000180	REMOVAL OF ROCK CHECK DAM	EACH	105										
135	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	1000										
136	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	1000										
137	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	2000										
138	2602-0010010	MOBILIZATION, EROSION CONTROL	EA	1										
139	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL	EA	1										

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING Refer to Standard Specification 2101. Includes removal of approximately 3121 feet of field fence. Grubbing operations shall include removal of stumps and downed timber in these areas. Clearing of all trees shall be completed in accordance with Standard Notation 232-10 on Sheet C.12. Refer to Standard Specification 1104.09. The Contractor may salvage cut and felled timber if desired but the salvaging operations will not be considered for payment. Burning and/or burying of clearing and grubbing spoils will not be allowed unless approval from the Engineer is received prior to operations. Clearing and grubbing spoils shall be removed from the project site and properly disposed of by the contractor.
2	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT Item is for furnishing and placing select material for IA 100 mainline subgrade treatment. Refer to Standard Specification 2102. Approval of materials for use as Contractor Furnished Select Treatment materials will be in accordance with Standard Specification 2102.02.D.1. The Contractor may elect to substitute select treatment material with special backfill or modified subbase material as shown in contract documents at no additional cost to the Contracting Authority, refer to typical section G_4D_Grade_Delay_S on Sheet B.13 for details. If special backfill or modified subbase material is used in lieu of select material the Contractor shall provide for suitable surface and subsurface drainage of the treatment material per Typical G_4D_Grade_Delay_S on Sheet B.14 and provide suitable soils in the lower portion of the original subgrade treatment layer at no additional cost to the Contracting Authority. If the Contractor elects to substitute select treatment material with special backfill or modified subbase, the Contractor shall notify the Engineer no later than 2 months after the start of roadway grading operations. An estimated 121,075 cy of select loam material is available within the roadway cut template and can be used for select subgrade treatment construction. Excavation of this material within the roadway template will be paid for separately as Class 10 excavation. Refer to T Sheets for additional information on estimated locations and quantities of select loam available within the roadway cut template. On-Site stockpiling of Select Loam is only allowed within proposed ROW limits. Stockpiles may not be placed in areas designated as not to be disturbed in the contract documents. The Contractor may stockpile material at an appropriate off-site location if desired. Identifying a suitable off-site stockpile location and hauling operations to and from the project site will not be paid for separately. The Contractor is responsible for finding off-site borrow location(s), obtaining necessary environmental clearances and permits, and all equipment, materials, labor, and operations to excavate and haul material to the project site without additional cost to the Contracting Authority. Overhaul will not be paid for separately.
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW Item is for the excavation of the proposed roadway template within the project corridor and roadway embankment construction. An estimated 438,657 cy of Class 10 material is available for embankment construction within the project corridor. Refer to Standard Specification 2102. An estimated 313,861 cy of template fill material is needed for roadway embankment construction. Compaction with Moisture Control and wasting excess material will be paid for separately. Refer to T Sheets for additional details. Overhaul will not apply or be paid for. The Contractor may choose to use automated machine guidance (AMG) for this project. Refer to Standard Specification 1105.17 for details.
4	2102-2710090	EXCAVATION, CLASS 10, WASTE Item is for wasting approximately 23,580 cy of excess Class 10 material. Refer to Standard Specification 1106.07. Quantity based on a shrinkage factor for 30% for excavated materials used to construct roadway embankments. Prior to wasting material, the Contractor shall verify adequate Class 10 volume remains within the project corridor to complete all roadway embankment and grading construction as defined in the contract documents. Overhaul will not be paid for.
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS AND ROCK FRAGMENTS Refer to Standard Specification 2102. Item is a provision for encountering unexpected boulders and rock fragments during roadway Class 10 excavation operations.
6	2102-4560000	LOCATING TILE LINES Refer to Standard Specification 2102. Quantity assumed to be the length of mainline grading through agricultural land use plus 25%.
7	2102-5020010	OBLITERATE OLD ROADBED Item is for the obliteration of existing 80th Street north of E Avenue. Refer to typical 4302 on Sheet B.13 for additional details. See Sheet E.3 for limits of obliteration. Removal of existing pavement will be paid for separately.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
8	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD Item is for stripping, salvaging, and spreading topsoil for slope dressing as defined in the contract documents. Refer to T Sheets for details. Topsoil is to be stripped and salvaged from all areas within the footprint of the roadway fill and cut templates for use as slope dressing. Quantity estimate assumes 12" of topsoil strip at all locations. The Contractor shall spread topsoil at a minimum thickness of 12" on all disturbed areas. Excess topsoil stripped and excavated shall be wasted on the project site as additional dressing. Excess topsoil is not eligible for use in roadway embankment construction. Topsoil replacement volumes in the T Sheets assume a slope dressing depth of 14.5" and a 40% shrinkage factor. On-Site stockpiling of stripped topsoil is only allowed within proposed ROW limits. Stockpiles may not be placed in areas designated as not to be disturbed in the contract documents. The Contractor may stockpile material at an appropriate off-site location if desired. Identifying a suitable off-site stockpile location and hauling operations to and from the project site will not be paid for separately.
9	2107-0875000	COMPACTION WITH MOISTURE AND DENSITY CONTROL Refer to Tabulation 103-1 "Embankment with Moisture and Density Control" on Sheet CS.1 for details. Item is for placement of Granular Backfill behind Retaining Wall 3010.
10	2107-0875100	COMPACTION WITH MOISTURE CONTROL Refer to Notation 103-6 "Embankment with Moisture Control" on Sheet CS.1 for details. Item is for construction of roadway embankments and placement of select subgrade treatment.
11	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN Item is for optional granular working blankets that may be needed depending on field conditions encountered during construction. Working blankets may be deleted or the limits may be extended or reduced as field conditions dictate at the time of construction. Refer to Tabulation 104-5C “List of Subdrain Work” on Sheet CS.3 for possible blanket locations. If used, moisture control for construction of the granular blankets will not be required. Since the granular working blankets are not required per plan documents, earthwork T Sheet calculations and quantity estimates are based on proposed final grade and do not account for the optional working blankets.
12	2111-8174100	GRANULAR SUBBASE Item is for the construction of E Avenue, Relocated 80th Street, 1st Avenue, and the 80th Street Connector Road. Refer to Typical 2P and 3P "2 Lane PCC Paving" on Sheets B.7-B.9 for details. The Contractor may choose to substitute modified subbase for granular subbase. If used, modified subbase will be paid for at the contract unit price for granular subbase and shall not be at additional cost to the contracting authority.
13	2115-0100000	MODIFIED SUBBASE Item is for E Avenue ramp paving. Refer to Typical 1RP_ "1 Lane PCC Ramp Paving" and 2RP_"2 Lane PCC Ramp Paving on Sheets B.10-B.11 for details.
14	2121-7425010	GRANULAR SHOULDERS, TYPE A Item includes furnishing materials, equipment, tools, and labor to place granular shoulders along E Avenue. See Tabulation 112-9 "Shoulders" on Sheet C.24. Estimated quantity of granular shoulder material assumes a material density of 140 lb/cf.
15	2122-5190008	PAVED SHOULDER, P.C. CONCRETE, 8 IN. Item is for paved shoulders along E Avenue. See Tabulation 112-9 "Shoulders" on Sheet C.24 for locations and details.
16	2122-5190010	PAVED SHOULDER, P.C. CONCRETE, 10 IN. Item is for paved shoulders along E Avenue Interchange ramps. See Tabulation 112-9 "Shoulders" on Sheet C.24 for locations and details.
17	2122-5190501	PAVED SHOULDER, PORTLAND CEMENT CONCRETE (PAVED SHOULDER PANEL FOR BRIDGE END DRAIN) Item is for the construction of Paved Shoulder Panels at End Drain Locations. 183 linear feet of integral curb shall be considered incidental to bid item. Item includes placement of Polymer Grid and Modified Subbase for panel construction. See Tabulation 104-8A "Scour Protection or Rock Flume for Bridge End Drain" and Tabulation 104-8 "Bridge End Drain" on Sheet C.22 for additional information.
18	2122-5191005	REINFORCED PAVED SHOULDER FOR CONCRETE BARRIER Item is for paved shoulders next to concrete barrier rail along E Avenue and E Avenue Ramps A and C. See Tabulation 112-9 "Shoulders" on Sheet C.24 for locations and details. Includes 90.4 sy of reinforced 8" PCC shoulder for concrete barrier along E Avenue and 152.8 sy of reinforced PCC shoulder for concrete barrier along E Avenue interchange Ramps A and C. Concrete barrier will be measured and paid for separately.
19	2123-7450000	SHOULDER CONSTRUCTION, EARTH Item is for construction of shoulders along E Avenue, Relocated 80th Street, the 80th Street Connector Road, intersection returns, and E Avenue interchange ramps. See Tabulation 112-9 "Shoulders" on Sheet C.24 for details. Refer to Typical Sections 2P_ and 3P_ "2 Lane PCC Paving" on Sheets B.7-B.9, Typical 1RP_"1 Lane PCC Ramp Paving" on Sheet B.10, and Typical 2RP_ "2 Lane PCC Ramp Paving" on Sheet B.11 for details. An estimated 1096 cy of material is needed for Earth Shoulder Construction of earth shoulders and adjacent to paved and granular shoulders. Approximately 73 cy of material is needed for earth shoulder construction along paved shoulder panels for bridge end drains.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
20	2123-7450020	SHOULDER FINISHING, EARTH Item is for placing approximately 12 cy of earth shoulder finishing material for behind curb construction along 1st Avenue. Refer to typical 2P_ "2 Lane PCC Paving" on Sheet B.7. Slope dressing adjacent to earth shoulder finishing is incidental to this item.
21	2301-0690203	BRIDGE APPROACH, BR-203 Item includes placement, finishing, curing, and texturing of approach pavement to the proposed E Avenue bridges over IA 100 and Morgan Creek and the E Avenue Ramp A bridge over Morgan Creek. Item includes the approach pavement, steel reinforcement and joints. Refer to Tabulation 112-6 "Bridge Approach Section" on Sheet C.22 for details. Measurement and payment for bridge approach pavement construction will be per Standard Specification 2301. Concrete barrier, longitudinal grooving, crash cushions, guardrail within or adjacent to bridge approach pavement limits per contract documents will be paid for separately. Refer to Sheets U.4-U.19 for bridge approach details.
22	2301-0690210	BRIDGE APPROACH, TWO LANE Item includes placement, finishing, curing, and texturing of approach pavement to the existing south approach to the 80th Street Bridge over Morgan Creek. Item includes the approach pavement, steel reinforcement and joints. Refer to Tabulation 112-6 "Bridge Approach Section" on Sheet C.22 for details. 24' linear feet of integral sloped curb shall be considered incidental to this bid item for construction of bridge end drains. Measurement and payment for bridge approach pavement construction will be per Standard Specification 2301. Longitudinal Grooving and guardrail within the bridge approach pavement limits per contract documents will be paid for separately. Refer Sheets U.37-U.38 for bridge approach details.
23	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN. Item is for construction of Relocated 80th Street SW, E Avenue, 1st Avenue, and the 80th Street Connector Road. Longitudinal tinning and 330' of integral 6" Standard curb are considered incidental to this item. Removal of temporary granular surfacing prior to paving is incidental.
24	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN. Item is for construction of E Avenue Interchange Ramps. Longitudinal Tinning is required and considered incidental to this item.
25	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES Item is for coring and testing proposed PCC pavements as determined by the Engineer in the field. Refer to Standard Specification 2301.
26	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE Item is for final surfacing of Berger Lane and temporary surfacing of E Avenue, Relocated 80th Street, and the 80th Street Connector Road for maintenance of traffic during construction. Refer to J Sheets for sequence of construction, maintenance of traffic, and limits of temporary granular surfacing details. Item assumes an application rate of 2330 tons per mile for Berger Lane and 2220 tons per mile for E Avenue, Relocated 80th Street, and the 80th Street Connector Road. 1523 Tons of material is estimated for the temporary surfacing.
27	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE Apply at a rate of 40 tons per station. See Tabulation 102-3 "Access Points and Safety Ramps" on Sheet C.21.
28	2401-6745650	REMOVAL OF EXISTING STRUCTURES Item is for removal of an existing 10’ x 6’ x 42.7' RCB culvert under E Avenue and two concrete slabs on Parcel 35 just south of E Avenue and east of Morgan Creek. Refer to Tabulation 110-2 "Removal of Existing Structures" on Sheet C.25 for location details. Materials removed as part of this item shall become the property of the Contractor, removed from the project site, and disposed of properly without additional cost to the Contracting Authority.
29	2402-0425030	GRANULAR BACKFILL Item is for placement of granular backfill behind retaining wall 3010. Refer to Sheets V.25-V.28 for details. Granular backfill material shall be per Standard Specification 4133. Compaction with Moisture and Density Control is required and will be paid for separately. Item includes 846 sy of Engineering Fabric.
30	2402-0425040	FLOODED BACKFILL Item is for construction of Concrete Roadway Pipes and includes Floodable Backfill and Porous Backfill quantities. See Tabulation 104-3 "Drainage Structures by Road Contractor" on Sheet C.19.
31	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT Item is for excavation beyond that required for the construction of the roadway template for the purposes of constructing roadway culverts. See Tabulation 104-3 "Drainage Structures by Road Contractor" on Sheet C.19. Excavated material becomes property of the contractor.

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32	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE Item is for longitudinal grooving of proposed E Avenue over IA 100, E Avenue over Morgan Creek, and E Avenue Ramp A over Morgan Creek approach pavements and bridge decks constructed by others; see NHSX-100-1(93)--3H-57, NHSX-100-1(94)--3H-57, and NHSX-100-1(97)--3H-57. See Tabulation 100-28 "Longitudinal Grooving" on Sheet C.20, and Sheets V.1-V.4 and V.11-12 for additional details. Limits of Longitudinal Grooving on bridge decks and approaches shall be per Standard Specification 2412.03.D.
33	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.
34	2416-0100021	APRONS, CONCRETE, 21 IN. DIA.
35	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.
36	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
37	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
38	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.
39	2416-0102242	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 42 IN.
40	2416-0102254	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 54 IN.
41	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
42	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
43	2416-1180048	CULVERT, CONCRETE ROADWAY PIPE, 48 IN. DIA.
44	2416-1200242	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 42 IN.
45	2416-1200254	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 54 IN.
46	2416-1240024	CULVERT, 3000D CONCRETE ROADWAY PIPE, 24 IN. DIA.
47	2416-1245024	CULVERT, 3750D CONCRETE ROADWAY PIPE, 24 IN. DIA. Items include payment for Apron Guards, Elbows, “D” Sections, Joint Wrapping, and Connected Pipe Joints. Joint Wrapping Engineering Fabric shall meet requirements of Standard Specification 4196.01.B.2. See Tabulation 104-3 "Drainage Structure by Road Contractor" on Sheet C.19 for pipe culvert details. Includes 3-15" Dia., 1-18" Dia., and 1-21" Dia. aprons for storm sewer outlet locations. Refer to Tabulation 104-5B "Storm Sewer" on Sheet M.1 for storm sewer outlet details.
48	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.
49	2422-0360036	APRONS, UNCLASSIFIED, 36 IN. DIA.
50	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.
51	2422-1723036	CULVERT, UNCLASSIFIED ROADWAY PIPE, 36 IN. DIA. Refer to Tabulation 102-3 "Access Points and Safety Ramps" on Sheet C.21 and Tabulation 104-3 "Drainage Structure by Road Contractor" on Sheet C.19 for details.
52	2435-0250802	INTAKE, SW-508, WELL ONLY
53	2435-0251002	INTAKE, SW-510, WELL ONLY
54	2435-0254600	INTAKE, SW-546
55	2435-0254602	INTAKE, SW-546, WELL ONLY
56	2435-0254900	BARRIER INTAKE, SW-549 See Tabulation 104-5B "Storm Sewer" on Sheet M.1.
57	2435-0600010	MANHOLE ADJUSTMENT, MINOR
58	2435-0600020	MANHOLE ADJUSTMENT, MAJOR Item is for adjustment of existing sanitary sewer manholes. Refer to Standard Specification 2435. Refer to Tabulation 104-10 "Adjustment of Fixtures" on Sheet C.24 for locations.
59	2435-0900000	BRIDGE END DRAIN, SW-538 Item are for construction of Intakes for Bridge End Drains. See Tabulation 104-8 "Bridge End Drains" on Sheet C.22 for additional information. 156.1 sy of polymer grid and 103.0 tons of modified subbase are incidental to this item.
60	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.
61	2502-8212204	SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA.
62	2502-8212208	SUBDRAIN, PERFORATED PLASTIC PIPE, 8 IN. DIA.
63	2502-8221304	SUBDRAIN OUTLET, DR-304 Item includes payment for Porous Backfill and Class A Crushed Stone. See Tabulation 104-9 "Subdrain Shoulder and Backslope" on Sheets CS.1-CS.3 and Tabulation 104-5C "List of Subdrain Work" on Sheet CS.3. 830 sy of Engineering Fabric is considered incidental to the 4" and 8" Perforated Plastic Subdrain. Engineering Fabric shall meet the requirements of Standard Specification 4196.01.B.2.
64	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 15 IN.
65	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 18 IN.
66	2503-0114221	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 21 IN.
67	2503-0114415	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 3000D (CLASS IV), 15 IN. Refer to Standard Specification 2503 and see Tabulation 104-5B "Storm Sewer" on Sheet M.1 for details. Backfill under primary roadways applies to the full pavement width section including the travelway, shoulders, curb, and barrier. Wrap joints with Engineering Fabric meeting requirements of Standard Specification 4196.01.B.2. Trench excavation, bedding, joint wrapping, and backfill for storm sewer placement will be considered incidental to the Storm Sewer Gravity Main Trenched items.
68	2503-0500401	BRIDGE END DRAIN, DR-401 Items are for construction of Sod Flumes at Bridge End Drains. See Tabulation 104-8A "Scour Protection or Rock Flume for Bridge End Drain" on Sheet C.22 for additional information.

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69	2504-0136012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, (DIP), 12 IN. Item is for installation of 30" outside diameter Sanitary Sewer steel casing pipe only. Casing shall meet requirements of Standard Specification 2553 and have a minimum thickness of 0.344 inches. Item includes furnishing and installing casing pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, and end seals. Refer to Sheet O.2 for additional design details. Casing pipe to be sealed on each end per Standard Specification 2553. Payment will be for the linear feet of casing pipe satisfactorily installed. The encasing pipe shall be clean and coated, on the outside, with two coats of coal tar paint, Kopper “Bitumastic Super Service Black”, Mobile “High-Build Bituminous Coating 35-J-10”, Tnemec “46-465 HB Tnemecol”, or equivalent. 4-mil coat thickness. Welder certification required per Iowa DOT Materials I.M. 560. Quantity assumes 1:1 temporary trench slopes from proposed ROW to bottom of casing. If conditions don't allow for stable temporary 1:1 slopes use temporary shoring. Temporary shoring shall be at no additional cost to the Contracting Authority.
70	2504-0136036	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, (DIP), 36 IN. Item is for installation of 62" outside diameter Sanitary Sewer steel casing pipe only. Casing shall meet requirements of Standard Specification 2553 and have a minimum thickness of 0.625 inches. Item includes furnishing and installing casing pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, and end seals. Refer to Sheet O.2 for additional design details. Casing pipe to be sealed on each end per Standard Specification 2553. Payment will be for the linear feet of casing pipe satisfactorily installed. The encasing pipe shall be clean and coated, on the outside, with two coats of coal tar paint, Kopper “Bitumastic Super Service Black”, Mobile “High-Build Bituminous Coating 35-J-10”, Tnemec “46-465 HB Tnemecol”, or equivalent. 4-mil coat thickness. Welder certification required per Iowa DOT Materials I.M. 560. Quantity assumes 1:1 temporary trench slopes from proposed ROW to bottom of casing. If conditions don't allow for stable temporary 1:1 slopes use temporary shoring. Temporary shoring shall be at no additional cost to the Contracting Authority. Video inspection of existing 8" and 15" sanitary sewer mains that cross E Avenue and 80th Street will be conducted before and after construction and is considered incidental. Any damages resulting from construction will be the responsibility of the contractor to repair at his own expense.
71	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL Item is for removal of existing guardrail on the south approach to the existing 80th Street SW bridge over Morgan Creek. Guardrail removed shall become the property of the Contractor. Refer to Tabulation 110-7A "Removal of Steel Beam Guardrail" on Sheet C.25 for details.
72 73 74 75	2505-4008300 2505-4008401 2505-4021010 2505-4021720	STEEL BEAM GUARDRAIL STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION STEEL BEAM GUARDRAIL END ANCHOR, BOLTED STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205 See Tabulation 108-8A "Steel Beam Guardrail at Concrete Barrier or Bridge End Post" on Sheet C.19. Refer to Sheet U.21 for guardrail details at the E Avenue and E Avenue Ramp D intersection.
76	2506-4984000	FLOWABLE MORTAR Item is for construction of concrete roadway pipe culverts. See Tabulation 104-3 "Drainage Structure by Road Contractor" on Sheet C.19 for details.
77	2507-3250005	ENGINEERING FABRIC Includes 750.7 SY for construction of rock splash basins, 130.2 SY for construction of rock slope protection, and 2939.8 SY for construction of rock ditches and rock flumes. See Tabulation 100-23 "Rock Erosion Control" on Sheet C.25. Includes 2506.8 SY for rock riffle structures, rock grade control, and rock slope protection along the Mitigation Channel. See Sheet U.25-U.28 for rock riffle, rock grade control, and rock slope protection locations and details.
78	2507-6800061	REVETMENT, CLASS E Item includes revetment for rock ditches, rock splash basins, rock riffle structures, rock grade control, and rock slope protection. Refer to Tabulation 100-23 "Rock Erosion Control" on Sheet C.25 and Sheets U.25-U.28 for additional details. Engineering fabric to be used with Class E Revetment will be measured and paid for separately.
79	2507-8029000	EROSION STONE Includes 1660.5 tons for construction of rock slash basins, rock flumes, rock slope protection and rock ditches. Includes 243.4 tons for construction of backfill at Retaining Wall 3010. See Tabulation 100-23 "Rock Erosion Control" on Sheet C.25 and retaining wall detail sheets V.25-V.28 for additional information. Engineering fabric to be used with erosion stone per plan documents will be measured and paid for separately.
80	2510-6745850	REMOVAL OF PAVEMENT See Tabulation 110-1 "Removal of Pavement" on Sheet C.25 for details. Removed pavement shall become the property of the Contractor and removed from the project site. Existing pavements are generally in poor surface condition. Item includes removal of existing bridge approach pavements at the existing E Avenue and 80th Street SW bridges over Morgan Creek.

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81	2513-0001040	CONCRETE BARRIER, BA-104 Item is for construction of concrete barrier along E Avenue at locations identified in the contract documents. Refer to Tabulation 108-18B "Concrete Barrier at Side Locations" on Sheet C.21 for details. Concrete barrier transition sections will be measured and paid for separately.
82	2513-0001070	CONCRETE BARRIER RAIL, BA-107 Item is for modified pedestrian/traffic concrete barrier end section with provisions for guardrail attachment. Refer to Tabulation 108-18B "Concrete Barrier at Side Locations" on Sheet C.21 and Sheet U.31 for details. Item includes all materials and operations necessary to construct modified barrier transition sections including concrete, reinforcing steel, and expansion joints. Payment will be full compensation for all work involved per Standard Specification 2513.05.
83	2513-0475000	CONCRETE BARRIER TRANSITION SECTION Item is for modified concrete barrier transition sections between typical BA-104 barrier sections and aesthetic bridge barrier and pedestrian/traffic barrier rails. Refer to Tabulation 108-18B "Concrete Barrier at Side Locations" on Sheet C.21 and Sheets U.32-U.33 for details. Item includes all materials and operations necessary to construct modified barrier transition sections including concrete, reinforcing steel, and expansion joints. Payment will be full compensation for all work involved per Standard Specification 2513.05.
84	2513-2350010	CONCRETE BARRIER (PEDESTRIAN/TRAFFIC) Item is for construction of concrete pedestrian separation barrier along E Avenue. See Tabulation 108-18B "Concrete Barrier at Side Locations" on Sheet C.21 and Sheets U.29-U.30 for details. Construction of Pedestrian/Traffic barrier rail will be limited to approach roadways; barrier on the E Avenue Bridges over Morgan Creek and IA 100 mainline will be constructed by others (refer to NHSX-100-1(93)--3H-57 and NHSX-100-1(94)--3H-57) and will not be considered for payment as part of NHSX-100-1(105)--3H-57. This item includes all materials and operations necessary to complete the Pedestrian/Traffic barrier construction with the exception of aesthetic treatments. Integral Thin Brick Veneer Brick aesthetic treatments will be paid for separately.
85	2518-6891810	PERMANENT ROAD CLOSURE, RURAL, SI-181 Item is for permanent closure of Existing 80th Street SW just south of E Avenue. Refer to Tabulation 102-4 "Locations of Road Closure Barricades" on Sheet C.21 for details. Confirm location of closure in the field with the Engineer prior to installation. Field adjust the location of barricade installation as directed by the Engineer considering access needs to adjacent parcels. Location adjustments in the field shall be completed at no additional cost to the Contracting Authority.
86	2518-6910000	SAFETY CLOSURE See Tabulation 108-13A "Safety Closure" on Sheet C.22 for locations and details. Safety Closures placed at E Avenue interchange ramps following completion of E Avenue reconstruction shall remain in place and become the responsibility of the Contracting Authority. Includes 23 hazard closures and 18 road closures for construction staging needs; refer to J Sheets for additional staging and maintenance of traffic details. Includes all material and operations to place, maintain, and remove closures unless specified otherwise in contract documents.
87	2519-4200140	REMOVAL OF FENCE, FIELD Item is for removal of existing field fence located outside the limits of roadway template construction and as directed by the Engineer. Obliteration of existing fence ridges and seeding of disturbed areas shall at the discretion of the Engineer and completed at no additional cost to the Contracting Authority. Field fence removed shall become the property of the Contractor and removed from the project site.
88 89	2520-3350010 2520-3350015	FIELD LABORATORY FIELD OFFICE Refer to Standard Specification 2520.
90	2523-0000100	LIGHTING POLE Refer to Tabulation 108-11A "Highway Lighting Data" on Sheet C.26 for additional information on light poles and luminaires. Item includes all materials and operations necessary to construct lighting pole foundations.
91	2523-0000200	ELECTRICAL CIRCUIT Refer to Tabulations 108-2 and 108-12 on Sheet C.26 for quantities and types of electrical ducts and conductors to be included. Provision and installation of (12)L-1, (18)L-2, (12)Y-1, and (2)Y-3 cable connectors shall be included with and considered incidental to the installation of Electrical Circuits. Provide 600 Volt fuses rated at 5 Amps for luminaire circuit supply L-1 connectors located in base of each pole, and at 20 Amps for tap circuit protection Y-1 connectors located in each handhole near the base of each pole.
92	2523-0000310	HANDHOLE+JUNCTION BOX All handholes shall be LI-103, Type I, unless noted otherwise on the plans.
93	2523-0000400	CONTROL CABINET Each control cabinet shall be constructed per Standard Road Plan LI-152 and Standard Specifications. Refer to the One-Line diagram(s) on the P-Sheets for additional control cabinet construction details.
94 95 96 97	2524-6765110 2524-9275222 2524-9325100 2524-9325150	REMOVAL OF TYPE A SIGN WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 6 IN. TYPE A SIGNS, SHEET ALUMINUM INSTALL TYPE A SIGN Item is for providing and installing STOP signs at local road intersections per plan documents. STOP signs should measure 36x36 inches on 80th Street SW and 30"x30" on all other roadways. Refer to Standard Specification 2524 and Standard Road Plans SI Series. Contractor may reuse existing sign and post assembly where applicable as approved by the Engineer. Refer to Tabulations 190-51 and 190-62 on Sheet C.18 for details.

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98	2526-8285000	CONSTRUCTION SURVEY Prior to construction, perform a survey to lay out the proposed grading design per Standard Specification 2526. The contractor may choose to use automated machine guidance construction. Refer to Standard Specification 1105.17. If automated machine grading is used, after finished grading and prior to seeding, the Contractor shall prepare a topographic survey, using the established baselines to show conformance to the proposed grades. The survey shall include the established baselines and the finished grades shown in 0.5 foot contours. Survey all grading areas, including stockpile areas. The Contractor shall provide the Engineer with the electronic file (TIN file or ASCII file). Survey right-of-way line between permanent right-of-way corners at 100 foot intervals or less if needed. Mark these points by placement of lath to clearly identify the right-of-way line. Permanent right-of-way corners will be surveyed and marked in the field by the Engineer. Includes surveying and staking Mitigation ROW for construction and overseeding as needed to complete construction per plan documents.
99	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
100	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED See Tabulation 108-22 "Pavement Marking Line Types" and Tabulation 108-29 "Pavement Marking Symbols and Legends" on Sheet C.23 for details. See Sheets U.22-U.24 for E Avenue pavement marking details. Refer to Iowa DOT PM Standard Road Plans for details for marking Relocated 80th Street, the 80th Street Connector Road, and Berger Lane.
101	2528-8445110	TRAFFIC CONTROL Refer to the traffic control plan on Sheet J.2. Payment for traffic control will be the contract unit price. See Standard Specification 2528. For additional information refer to Part 6 of the Manual of Uniform Traffic Control Devices (MUTCD), current Iowa DOT TC Standard Road Plans, and Standard Specification 2528.
102	2533-4980005	MOBILIZATION Payment will be based on the contract unit price per Standard Specification 2533. A temporary construction crossing of Morgan Creek, if needed, will be considered incidental to Mobilization per Standard Specification 2547.05. The temporary crossing of Morgan Creek shall meet the requirements of Standard Specification 2547. All materials and operations to construct, maintain, and remove the temporary crossing and return the Morgan Creek channel and over-bank areas to their natural conditions are incidental to mobilization. Dredging is not allowed. See Notations "STREAM" and 281-1 on Sheet C.12 for additional details, requirements, and restrictions.
103	2538-6970000	SALVAGE, REMOVAL, AND DISPOSAL OF OBSTRUCTIONS ON PARCEL 35 Item is for the removal and disposal of an existing shed on Parcel 35 located just south of E Avenue and east of Morgan Creek. Refer to Tabulation 110-10 "Salvage and Removal of Buildings" on Sheet C.25. The Contracting Authority has evaluated the structure and no indications of lead based paint or asbestos were identified. The removed materials shall become the property of the of the Contractor and removed from the project site at no additional cost to the Contracting Authority.
104	2551-0000230	PERMANENT CRASH CUSHION, SEVERE USE (SU)
105	2551-0000300	PERMANENT CRASH CUSHION SPARE PARTS KIT Refer to Tabulation 108-30 "Crash Cushions" on Sheet C.22, Standard Specification 2551, and "Crash Cushion Details" on Sheet U.20 for additional Details.
106	2554-0112024	WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN. Item is for construction of relocated 24" water main at E Avenue. Refer to Iowa DOT Standard Specification 2554 and "Special Provisions for Water Mains". Water main is to be Locking Joint Ductile Iron Pipe; McWane Ductile 'TR Flex', Griffin Pipe 'Snap-Lok', or approved equivalent. Water main shall be of Class 52 or Pressure Class 350 thickness and installed with tracer wire and polyethylene wrap. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. Item includes furnishing and installing water main pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, tracer wire, polyethylene wrap, thrust blocks, testing and disinfection, and temporary shoring as needed for trench excavation. Payment will be full compensation for all material, equipment, and operations necessary to complete water main construction. Fittings, valves, and cathodic protection will be paid for separately. Refer to Sheet O.3-O.4 for design details. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item.

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Item No.	Item Code	Description
107	2554-0122024	WATER MAIN, TRENCHLESS, DUCTILE IRON PIPE (DIP), 24 IN. Item is for trenchless construction of relocated 24" water main at and near Morgan Creek. Refer to Iowa DOT Standard Specification 2554 and "Special Provisions for Water Mains". Refer to Iowa DOT Standard Specification 2553 for trenchless construction material and construction requirements. Water main is to be Locking Joint Ductile Iron Pipe; McWane Ductile 'TR Flex', Griffin Pipe 'Snap-Lok', or approved equivalent. Water main shall be of Class 52 or Pressure Class 350 thickness and installed with tracer wire and polyethylene wrap. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. Item includes pit excavation, dewatering, backfill material, tracer wire, polyethylene wrap, thrust blocks, testing and disinfection, and temporary shoring as needed for pit excavation. Payment will be full compensation for all material, equipment, and operations necessary to complete the trenchless water main construction. Fittings, valves, and cathodic protection will be paid for separately. Refer to Sheet O.3-O.4 for design details. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item.
108	2554-0132024	WATER MAIN WITH CASING PIPE, TRENCHED, DUCTILE IRON PIPE (DIP), 24 IN. Item is for construction of relocated 24" water main with a 40" outside diameter steel casing pipe south of E Avenue. Refer to Iowa DOT Standard Specification 2554 and "Special Provisions for Water Mains." Water main is to be Locking Joint Ductile Iron Pipe; McWane Ductile 'TR Flex', Griffin Pipe 'Snap-Lok', or approved equivalent. Water main shall be of Class 52 or Pressure Class 350 thickness and installed with tracer wire and polyethylene wrap. The encasing pipe shall be clean and coated, on the outside, with two coats of coal tar paint, Kopper “Bitumastic Super Service Black”, Mobile “High-Build Bituminous Coating 35-J-10”, Tnemec “46-465 HB Tnemecol”, or equivalent. 4-mil coat thickness. The casing pipe shall be steel pipe with a minimum thickness of 0.344 inches and meet the requirements of Iowa DOT Standard Specification 2554. Welder certification required per Iowa DOT Materials I.M. 560. Length of casing pipe assumes 1:1 temporary trench slopes. If conditions don't allow for stable temporary 1:1 slopes, flatten temporary slopes if possible or use temporary shoring to complete construction. Temporary shoring shall be at no additional cost to the Contracting Authority and all excavation must remain with the project's ROW limits and avoid mitigation areas as per contract documents. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. Item includes furnishing and installing water main and casing pipe, trench excavation, dewatering, furnishing and placing bedding and backfill material, thrust blocks, casing spacers, annular space fill material, end seals, tracer wire, polyethylene wrap, testing and disinfection, and temporary shoring as needed for trench excavation. Payment will be full compensation for all material, equipment, and operations necessary to complete water main and casing pipe construction. Fittings, valves, and cathodic protection will be paid for separately. Refer to Sheet O.3-O.4 for design details. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item.
109	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 45 DEGREE BEND
110	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 22.5 DEGREE BEND
111	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, 11.25 DEGREE BEND Items are for fittings necessary to construct the relocated 24" water main south of E Avenue. Refer to Sheet O.3 for additional details. Payment will be for providing and installing all ductile iron pipe fittings per construction documents. Refer to Iowa DOT Standard Specification 2554 and "Special Provisions for Water Mains" for material, construction, cleaning, inspecting, and testing requirements. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item.

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Item No.	Item Code	Description
112	2554-0210201	FIRE HYDRANT ASSEMBLY, WM-201 Item is for the installation or relocation of fire hydrant assemblies per contract documents. Refer to Sheets E.10 and O.3 for locations and details. Refer to Iowa DOT Standard Specification 2504 and "Special Provisions for Water Mains". The City of Cedar Rapids Water Department will determine whether existing hydrants can be reused or whether new hydrants should be installed at the locations specified in contract documents. If it is determined that new hydrants are needed, the City of Cedar Rapids will provide new hydrant units to the Contractor. Take existing hydrants out of service by shutting down the existing hydrant auxiliary valves. Remove the existing hydrants and leave the hydrant auxiliary valves in place. Relocate or install new hydrants at locations shown on Sheet E.10 or as approved by the Engineer. Connect relocated or new hydrants to existing hydrant auxiliary valves with 6" diameter ductile iron pipe that meet the requirements of "Special Provisions for Water Mains." Ductile iron pipe and any fittings necessary to connect the new hydrant locations to existing hydrant auxiliary valve locations is incidental to this item. An estimated total of 60' of 6" ductile iron pipe will be needed to complete the hydrant unit and valve connections. Thrust blocking is required; see Iowa DOT Standard Road Plan WM-101 for details. Thrust blocking is considered incidental to the Fire Hydrant Assembly. For the flushing hydrant to be installed with the Relocated 24" Water Main, the City of Cedar Rapids will provide the contractor the hydrant unit and valve. Service interruptions to the existing north-south 24" and 48" water transmission mains near existing 80th Street is not allowed. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item. Method of Measurement: Each hydrant assembly constructed or relocated will be counted. Basis of Payment: The Contractor will be paid the contract unit price for each installation successfully completed. Payment will be full compensation for providing all necessary materials to complete the work that are not provided to the Contractor by the City of Cedar Rapids as defined in the contract documents and all equipment and operations for installation, testing, and disinfection of the hydrant assemblies.
113	2554-0212020	VALVE BOX EXTENSION Item is for extending existing water main valve boxes to match new proposed finished grade elevations. Refer to Iowa DOT Standard Specification 2554 and "Special Provisions for Water Mains". Refer to Tabulation 104-10 "Adjustment of Fixtures" on Sheet C.24 for existing valve locations. The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06.
114	2590-0000020	PROJECT MANAGEMENT Refer to SS-15002, Supplemental Specifications for Project Management for details.
115	2599-9999003	RETAINING WALL BACKFILL, CLAY Item is for backfilling the upper 3' behind retaining wall 3010 with clay material to form a clay cap over areas of granular backfill. The upper 3' of backfill behind the retaining wall shall be comprised of lean clay (CL); the use of fat clay (CH) is not allowed. The lean clay shall consist of cohesive materials having at least 50% passing the U.S. Standard 200 mesh sieve size, have a Plasticity Index of 10 or greater, and fall between the "U" line and the "A" line on Figure 3 in ASTM D 2487 - Standard Tests for Classifications of Soils Engineering Purposes. Moisture and density control shall be based on the standard Proctor compaction test, see Iowa DOT Materials I.M 309. Cohesive materials shall be compacted to a density of at least 95% of the maximum dry density and be within -1% to +4% of the optimum moisture content at the time compactive effort is applied, which may require the addition of water or aeration of the material. Sampling and testing of borrow material shall be in accordance with Iowa DOT Materials I.M. 204 for roadway and borrow excavation and embankments. Care is to be taken when placing the clay backfill to avoid damage to the retaining wall and subdrains. Any damage shall be repaired to the satisfaction of the Engineer at no additional cost to the Contracting Authority. Method of Measurement Volume (cy) of clay backfill material successfully placed. Basis of Payment Payment for this item will be full compensation for finding and testing material that meets the requirements of plan documents and for all operations necessary to construct the clay backfill cap. Adding water or aeration of material to meet the moisture content requirements of the plan documents will be considered incidental to this item. Payment will be the contract unit price for the volume of clay backfill material successfully placed.

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ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
116	2599-9999005	TAPPING VALVE ASSEMBLY, 24 IN. Item is for construction of a tapping valve along the 24" relocated water main. Refer to Sheet O.3. Refer to "Special Provisions for Water Mains". Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. Method of Measurement Each 24" Tapping Assembly installed will be counted for payment. Basis of Payment Payment will be the contract unit price for each 24" Tapping Assembly installed. Payment will be full compensation for all materials and work involved.
117	2599-9999005	VALVE, AIR RELEASE, DIP Item is for construction of Air Release Valves as part of the 24" water main relocation south of E Avenue. Refer to "Special Provisions for Water Mains". The Contractor shall coordinate all construction and testing inspection activities with the City of Cedar Rapids Water Department for this item. Buy America specifications are required for this project, refer to Iowa DOT Standard Specification 1107.06. Method of Measurement: Each air release valve will be counted. Basis of Payment: Payment will be the contract unit price for each air release valve successfully installed and be full compensation for all materials, equipment, and operations necessary to construct, test, and disinfect each air release valve installed.
118	2599-9999005	TRANSMISSI0N MAIN HOT TAPS Refer to "Special Provisions for Transmission Main 'Hot-Tap'" for details. Item includes 2 hot taps to the existing 24" diameter east-west water main south of E Avenue for completion of the water main relocation through the E Avenue interchange. Refer to Sheets O.3-O.4 for details. Qualifications of proposed specialty contractors are to be submitted for review and approval by the City of Cedar Rapids Water Department. The Contractor shall also perform material submittals for the tapping sleeves, valves, and any other hardware proposed to the City of Cedar Rapids Water Department for review and approval. Minimal service interruptions are allowed along the east-west 24" water main as noted in "Special Provisions for Transmission Main 'Hot-Tap'". Service interruptions shall be coordinated with the City of Cedar Rapids Water Department and the Poweshiek Water Association (Chad Colburn, 125 Industrial Drive, PO Box 504, Brooklyn, Iowa 52211; Phone - 641-522-7416). Payment is full compensation for all materials, equipment, and operations necessary to complete the hot taps.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
119	2599-9999009	WATER MAIN ABANDONMENT, 24 IN. This item is for abandonment or removal of approximately 1275 feet of existing 24-inch diameter ductile iron water main pipe and appurtenances along E Avenue from approximately Station 2563+25 to Station 2576+00. The location of the existing water main is expected to be a minimum of 5'-6" below existing grade. Refer "Special Provisions for Water Mains". The Contractor shall cut and remove the existing water main pipe and appurtenances as needed at locations where proposed or temporary excavation exposes the existing pipe or where the existing water main will be within 48 inches for the proposed finished grade. Areas of the removal shall be backfilled with suitable Class 10 material as part of roadway embankment construction at no additional cost to the Contracting Authority. Water main removal includes the removal of any appurtenances such as valves, valve boxes, hydrants, elbows/bends, air release valve risers, sleeves, fittings, and pipe restraining structures and equipment that are located along the section of water main being removed. The existing water main is ductile iron pipe with lock joints. Locations where the existing pipe remains a minimum of 48-inches below proposed finished grade and does not conflict with future roadway, bridge, or drainage structure features can be abandoned in place. Sections abandoned shall be capped and grouted solid. All appurtenances located above existing grade along the section of abandoned water main shall be removed. Fill the water main being abandoned with flowable mortar or CLSM per SUDAS Standard Specification 3010 by gravity flow or pumping. The existing 24-inch water main cannot be removed from service until the relocated water main is constructed and operational. The Contractor shall coordinate with the City of Cedar Rapids and the Poweshiek Water Association (Chad Colburn, 125 Industrial Drive, PO Box 504, Brooklyn, Iowa 52211; Phone - 641-522-7416) on sequence of construction and planned service interruptions. Refer to Sheet O.4 for sequence of construction and additional details regarding allowable service interruptions. Once the existing water main is taken out of service, all other above ground appurtenances no longer needed to maintain service are to be removed. In areas of water main abandonment, removal of these appurtenances shall be to a minimum depth of 48-inches below existing or proposed finished grade. Method of Measurement: Lump Sum Basis of Payment: The Contractor will paid the lump sum contract unit price for this item. The lump sum payment will be full compensation for all materials, equipment, and operations necessary to complete the removal and abandonment of the existing water main and appurtenances including water valves and valve boxes, air release risers, bends/ elbows, sleeves, fittings, and pipe restraining structures and equipment. Backfill in the case of water main removal and grout for water main abandonment are considered incidental to the removal or abandonment of the existing water main pipe.
120	2599-9999009	BOULDER TOE PROTECTION Item is for placement of Class B Revetment along the Mitigation Channel and Mitigation Ditches toe of bank locations as per construction documents. Refer to Tabulation 100-23 "Rock Erosion Control" on Sheet C.25 and Sheets U.25-U.28 for details. Class B Revetment shall meet the requirements of Standard Specification 4130. Excavation and bank shaping required for placement of Class B Revetment is considered incidental to this item. Item includes providing all material, equipment, and operations to complete boulder toe protection construction per contract documents. Method of Measurement Boulder toe protection will be measured by the linear feet of protection successfully constructed. Basis of Payment Payment will be the contract unit price for this item.
121	2599-9999010	CATHODIC PROTECTION Item is for the relocated 24" water transmission main south of E Avenue. Refer to "Special Provisions for Cathodic Protection". Payment is full compensation for all materials, equipment, and operations necessary for cathodic protection.
122	2599-9999014	INTEGRAL THIN VENEER BRICK FOR STRUCTURAL CONCRETE Refer to "Special Provisions for Integral Thin Veneer Brick for Structural Concrete". Item is to be applied to the roadway side of the separation concrete barrier. Construction of the separation concrete barrier will be paid for separately. Refer to Sheets U.29-U.30 for details. Aesthetic features for concrete barriers on bridge structures constructed by others (see NHSX-100-1(93)--3H-57 and NHSX-100-1(94)--3H-57) will not be considered for payment as part NHSX-100-1(105)--3H-57.
123	2601-2634100	MULCHING Item is for mulching per Article 2601.03, E, 2. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Mulch to be applied to all disturbed areas seeded with Native Grass Seeding or Stabilizing Crop Seeding. InclMulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.

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Item No.	Item Code	Description
124	2601-2636015	NATIVE GRASS SEEDING Item is for seeding the Mitigation Channel and Mitigation Ditch construction disturbed areas, and a minimum of 50' from the top of bank locations. Undisturbed areas within 50' of top of bank locations shall be cleared of existing vegetation and undesirable growth and prepared for seeding per Standard Specification 2601.03.B.4.a prior to seeding as deemed necessary by the Engineer. Ditch and Channel bottoms within Mitigation ROW Limits and areas of revetment and rock protection shall not be seeded. Seed bed preparation, seed mix, and application shall be per Standard Specification 2601.03.C.5. Item also includes overseeding undisturbed areas within Mitigation ROW boundaries as per contract documents. See Standard Specification 2601.03.D for overseeding details; fertilizer is not required. Seed area with native grass seed mix per Standard Specification 2601.03.C.5b. Mitigation ROW corners will be clearly marked in the field by the Contracting Authority. Any additional ROW survey and staking required to clearly delineate the Mitigation ROW area in the field to complete overseeding operations will be paid for as part of bid item 2526-8285000 Construction Survey.
125	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING Included for disturbed areas as directed by the Engineer. Prepare seedbed according to 2601.03, B, 4, a. Seed mixture shall be: Oats 50 lbs. per acre Grain rye 50 lbs. per acre *Canada wildrye (Elymus canadensis) 5 lbs. PLS per acre *Big bluestem (Andropogon geradii) 3 lbs. PLS per acre *Little bluestem (Schizachyrium scoparium) 3 lbs. PLS per acre Sideoats grama (Bouteloua curtipendula) 3 lbs. PLS per acre Switchgrass (Panicum virgatum) 1 lbs. PLS per acre Partridge Pea (Chamaecrita fasciculate) 2 lbs. PLS per acre *Note: Canada wildrye, Big bluestem and Little bluestem shall be debearded or equal to facilitate the application of seed. Source Identified Class (Yellow Tag) Source G0-Iowa seed will be required. Seed may be applied by broadcasting or with a Native Grass Drill. Broadcasted seed will require one complete rolling of the area seeded with a cultipacker within 24 hours after seeding and prior to mulching or hydromulching. Native Grass Drilled seed must meet Article 2601.03, A, 11 and be completed per Article 2601.03, C, 5. prior to mulching. All seed shall be mixed off-site by a seed conditioner approved by the Iowa Crop Improvement Association or or other state's Crop Improvement Association. Bags shall arrive onsite from seed conditioner in sealed/unopened bags. All disturbed areas shall be fertilized per Article 2601.03, C, 1 unless specified otherwise in contract documents.
126	2602-0000020	SILT FENCE Refer to Tabulation 100-17 "Tabulation of Silt Fence" on Sheet C.18. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Slash mulch berms may be placed where perimeter silt fence is indicated on plans in lieu of perimeter silt fence at no additional cost to the contracting authority. See Iowa DOT Detail 570-1 on Sheet U.34 for details. Upon completion of the project, all slash mulch berms shall be left in place. Slash mulch berms will be measured and paid as ‘Silt Fence’.
127	2602-0000030	SILT FENCE FOR DITCH CHECKS Refer to Tabulation 100-18 "Tabulation of Silt Fence for Ditch Checks" on Sheets C.13-C.17. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
128	2602-0000050	SILT BASINS Refer to Tabulation 100-14 "Silt Basins" on Sheet C.13. The tabulation includes estimated locations for placement of "Silt Basins" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100% additional quantity for field adjustments and maintenance.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
129	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
130	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the grading project. Bid item assumes 10% of the tabulated quantity of Silt Fence and Silt Fence for Ditch Checks. Maintenance on slash mulch berms will be required when the berm height is less than 30 inches or the base is less than 6 feet wide The Contractor shall be responsible for all labor, materials, equipment and services that may be necessary for, and incidental to, the maintenance of the slash mulch berms. Any maintenance of the slash mulch berms shall be paid as 'Maintenance of Silt Fence or Silt Fence for Ditch Check".
131	2602-000150	STABILIZED CONSTRUCTION ENTRANCE Stabilized construction entrances shall be used at locations where construction traffic enters and exits the project work site at a paved public roadway. Quantity assumes each stabilized construction entrance measures 100 feet in length. When no longer needed, as approved by the Engineer, stabilized entrances shall be removed. Use aggregate meeting Gradation No. 13. Use engineering fabric for Embankment Erosion Control per Standard Specification 4196. Install engineering fabric prior to placing aggregate. Install aggregate at a minimum depth of 6 inches and minimum width of 20 feet. Locations and lengths shall be as approved by the Engineer. Method of Measurement Measurement will be in linear feet measured along the length of the entrance at the entrance centerline. Basis of Payment Payment will be full compensation for furnishing all materials and work necessary for installation, maintenance, and removal of stabilized construction entrance.
132	2602-0000160	ROCK CHECK DAM This bid quantity is assumed to be 10 percent of the silt fence for ditch checks tabulated quantity to reflect possible replacement needs should some silt fence for ditch check locations fail during the grading project. Rock check dams shall be installed perpendicular to the flow of water. Refer to Iowa DOT Detail 570-2 on Sheet U.35 for details.
133	2602-0000170	MAINTENANCE OF ROCK CHECK DAM Quantity assumes 3 cleanouts of each rock check dam installed. Each rock check dam is assumed to measure 16 feet in length. See Iowa DOT Detail 570-2 on Sheet U.35 for details.
134	2602-0000180	REMOVAL OF ROCK CHECK DAM Bid item is for the removal of rock check dams as directed by the Engineer. See Iowa DOT Detail 570-2 on Sheet U.35 for details.
135	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.
136	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Refer to Standard Specification 2602. These temporary erosion control devices can be used when weather, site conditions, or contractor staging do not lend themselves to silt fence placement. Prior to placement, the Engineer shall approval placement of these devices in lieu of silt fence. All perimeter and slope sediment control devices shall be removed and replaced with silt fence prior to the end of construction unless approved by the Engineer. Quantity estimated using 10% of the silt fence quantity up to a maximum of 1000 feet for each of the 12-inch and 20-inch perimeter and slope sediment control devices. Installation of silt fence in place of these devices will be paid for at the contract unit price for Silt Fence and per Standard Specification 2602. Perimeter and slope sediment control devices will be required to be constructed out of wood excelsior.
137	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE Included for removal of perimeter and sediment control devices. All material shall become the property of the contractor and removed from the project within 24 hours.
138	2602-0010010	MOBILIZATION, EROSION CONTROL
139	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL See Standard Specification 2602.

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
2.6	748+57.33	DR-611	24	RCP	198	B	10.0		1	1		1							Type 3		799.20	790.13	791.40		98.1	112.1				12	LT	748+70.00	800.90	M	43.4	13.6	262.3	16.3	278.6	(1)
3.0	752+50.00	DR-611	24	RCP	80	B	4.1		1	1	1	1							Type 3		791.50	788.65	789.77		38.1	54.1					MED	752+80.00	793.50	M	105.8	12.8	65.9	6.5	72.4	(2)
2.8	766+50.00	DR-611	24	RCP	74	B	3.5		1	1	1				1				Type 3		764.82	762.47	763.90		38.1	48.1					MED	766+85.00	766.70	M						F=80.13'
1.2	771+25.00	DR-611	24	RCP	74	B	3.7		1	1	1	1							Type 3		760.38	759.05	759.47		38.1	48.1									88.9	11.2	56.1	6.7	62.8	(3)
1.6	777+50.00	DR-611	24	RCP	86	B	6.1		1	1	1	1							Type 3		762.59	766.94	762.99		56.1	42.1					MED	777+25.00	768.50	M					0.0	(4)
3.0	785+75.00	DR-611	24	RCP	108	B	3.9		1	1	1				2				Type 3		777.89	780.22	778.54		82.1	38.1					MED	785+45.00	782.20	M	96.5	18.9	85.5	9.3	94.8	F=114.13'
54.8	800+20.29	DR-601	48	RCP	198	B	8.9		1	1									Type 3		792.14	788.83			102.0	112.0				8					36.0		567.5	21.8	589.3	
3.0	800+75.00	DR-611	24	RCP	86	B	8.0		1	1	1	1							Type 3		792.97	799.44	793.51		60.1	38.1					MED	800+45.00	801.40	M	0.9		153.3	7.6	160.9	(5)
8.7	807+87.89	DR-601	30	RCP	312	B	8.2		1	1									Type 3		807.60	798.39			150.2	174.2			50						85.3	22.5	418.0	27.2	445.2	
3.6	23768+25.00	DR-601	24	RCP	156	B	18.0		1	1									Type 3		759.81	761.83			76.1	92.1									369.2		139.7	13.0	152.7	
6.7	2571+25.00	DR-601	24	RCP	226	B	25.0		1	1									Type 3		759.29	761.30			114.1	124.1									570.5		305.6	18.5	324.1	
396.9	2575+23.00	RCB	8x7		163		11.3														760.22	760.62			80.0	83.0														See Sht V.16
45.9	2580+00.00	DR-601	42	LCP	82	B	2.2		2	2									Type 3		766.65	766.96			44.0	54.0									242.7	28.0	151.6	19.9	171.5	Dual Pipes
111.4	4060+41.26	DR-601	54	LCP	56	B	2.0		2	2									Type 3		760.22	759.90			34.0	38.0				2					243.7	24.7	163.8	16.5	180.3	Dual Pipes
36.8	4066+76.70	DR-601	36	UNCL	42	B	3.4		2	2											767.01	765.78			28.0	30.0			6						211.3					Dual Pipes
44.1	4069+23.47	RCB	12x4		67		3.6														769.26	769.04			34.0	33.0			52											By Others
18.4	4091+89.15	DR-601	36	UNCL	42	B	2.9		1	1											814.53	813.12			28.0	30.0			17						134.9					
3.8	3062+05.82	DR-601	24	RCP	64	B	5.2		1	1									Type 3		785.05	786.09			38.1	38.1			14						92.0	14.1	84.8	5.8	90.6	
35.5	3069+55.11	DR-601	30	RCP	76	B	3.7		2	3									Type 3		779.25	780.86			46.2	42.2				22					225.4	18.8	106.9	13.8	120.7	(6)
1.1	3201+26.00	DR-601	24	RCP	52	B	3.7		1	1									Type 3		781.10	779.25			30.1	34.1				12					104.9	12.1	53.7	4.9	58.6	

Notes:
(1) F=130.13', 1-5° Elbow
(2) F=84.13', 1-15° Elbow
(3) F=76.13', 1-4° Elbow
(4) F=80.13', 1-12° Elbow
(5) F=66.13', 1-10° Elbow
(6) Dual Pipes. Remove 94' of existing RCP pipe from outlet end to F.L. Elev 780.93 and add 1 DR-201 Apron to oulet end.

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Refer to BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-250, LS-625, LS-630, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.

No.	Location (1) Direction of Traffic	Location Side O = Outside M = Median	Location Station	Location Offset	Layout Lengths BA-250 or LS-630 VT1 (40.625' min.)	VF	VT2	ET (37.5' or 50.0')	Long-Span System BA-211 STATION	Long-Span System BA-211 TYPE	Delineators and Object Markers SI-211 TYPE	Delineator SI-172 Type 1 White	Object Marker SI-173 Type 2 OM2-2	Object Marker SI-173 Type 3 OM3-L	Object Marker SI-173 Type 3 OM3-R	Bid Items Bolted End Anchor BA-202 TYPE	Bolted End Anchor BA-202 EACH	Barrier Transition Section BA-201	Steel Beam Guardrail BA-200	End Terminal Standard BA-205	End Terminal Flared BA-206	Post Adapter BA-210	Remarks
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	EACH	EACH	EACH	EACH	TYPE	EACH	EACH	LF	EACH	EACH	EACH	
1	EB	O	2563+51.97	30.0	40.625			50.0							1	B	1	1	0.0	1			
3	EB	O	2568+07.02	30.0	40.625			50.0							1	B	1	1	0.0	1			
4	WB	O	2571+18.18	30.0	90.625	56.25								1		B	1	1	106.3				Modified layout - See U.21 for details
5	NB	M	24772+74.22	20.8	87.500	128.13								1		A	1	1	175.0				Modified layout - See U.21 for details
6	NB	O	24772+83.68	6.8	53.125	25.00		50.0							1	A	1	1	37.5	1			
7	NB	O	3094+72.36	16.7	40.625			50.0					3		1	C	1	1	0.0	1			
8	SB	O	3094+54.87	16.8	40.625			50.0					3	1		C	1	1	0.0	1			

104-9B
Modified

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

(1) Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Location						Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks
Line No.	Road or Lane Ident.	Station to Station		Side	Depth D	Shoulder		Backslope		Bridge Berm (1)			DR-303, DR-304, or DR-305				
						Size	Length	Size	Length	Size	Type	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT	IN		FT			CY	CY	
1	IA 100 EB	768+23.00	771+10.00	RT	52.0					4.0	B	293.5	771+10.00	DR-304	34.7	0.2	Refer to EW-204
2	IA 100 WB	768+95.00	771+60.00	LT	52.0					4.0	C	276.4	771+60.00	DR-304	32.7	0.2	Refer to EW-204
	Totals:											569.9	DR-304	2	67.4	0.4	

104-5C
04-21-15

LIST OF SUBDRAIN WORK

Refer to DR-121, DR-201, DR-203, DR-301, DR-302, DR-303, DR-304, and DR-305.

* Not a bid item

Location				Pipe			Aprons		Outlets				Connected Pipe Joints*		Trench Drain	Granular Material	Porous Backfill*	Class "A" Crushed Stone*	Remarks
No.	Station to Station		Type of Installation	Concrete C.M.P., C.M.P. Coated, or Plastic	Dia.	Length	DR-201	DR-203	DR-304	DR-305			DR-121			Blanket			
			DR-301, DR-302, DR-303		IN	LF	No.	No.	No.	Type	No.		Type	No.	LF	CY	CY	CY	
1	53011+00.00	53015+31.62	See Sheets V.26-V.28	Perforated	4.0	390											57.8		
2	53011+00.00	53015+31.62	See Sheets V.26-V.28	Perforated	8.0	432			2								66.7	0.4	
3	2565+49.01	2565+91.93	See Sheets V.26-V.28	Perforated	4.0	67			1								2.1	0.2	
	758+00.00	762+25.00														9169.6			Optional Working Blanket
	763+00.00	766+00.00														7162.2			Optional Working Blanket
	767+00.00	773+50.00														10136.1			Optional Working Blanket
	775+95.00	781+00.00														7425.2			Optional Working Blanket
	798+50.00	808+50.00														11396.1			Optional Working Blanket
	2565+00.00	2568+75.00														6082.6			Optional Working Blanket
	2570+85.00	2576+35.00														9805.2			Optional Working Blanket
	4060+05.00	4064+00.00														2564.8			Optional Working Blanket
	23766+00.00	23769+25.00														3780.2			Optional Working Blanket
	21773+50.00	21777+90.00														4236.1			Optional Working Blanket
	Totals:				4.0	457			3							71758.1	126.6	0.6	
					8.0	432													

OPTIONAL WORKING BLANKET NOTES:

1. WORKING BLANKET SHOWN IS TO FACILITATE CONSTRUCTION AT THE IDENTIFIED AREA.
2. IF CONTRACTOR DOES NOT FIND THE WORKING BLANKET NECESSARY, IT CAN BE DELETED WITH APPROVAL FROM THE ENGINEER.
3. WORKING BLANKET WILL BE PAID FOR AS "GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN."
4. WORKING BLANKET SHALL BE FOR A MINIMUM 2 FT AND SHALL CONSIST OF GRANULAR MATERIAL AS PER THE REQUIREMENTS OF SECTION 4133 OF THE IOWA DOT STANDARD SPECIFICATIONS.
5. IF THE CONTRACTOR FINDS IT NECESSARY, THE EXTENTS/THICKNESS OF THE WORKING BLANKETS CAN BE MODIFIED AT NO EXTRA COST TO THE DOT.

Removed from Note 4 "The material shall be placed with moisture control."

CLINTON TWP.
T-83N R-8W
SEC.28

SB-1034
℄ CONSTRUCTION
755
760
765
E AVENUE RAMP C
CH-01
RB-532
WESTBOUND IA 100
RB-528
RB-530
RB-533
IA 100 (ML100)
SB-1035
SB-1036
RB-527
EASTBOUND IA 100
CH-02
CH-03
OPTIONAL WORKING BLANKET
E AVENUE RAMP B
OPTIONAL WORKING BLANKET
OPTIONAL WORKING BLANKET
0 FEET 50
IA 100 MAINLINE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.5

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CLINTON TWP.
T-83N R-8W
SEC.21

OPTIONAL WORKING BLANKET NOTES:
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Removed from Note 4 "The material shall be placed with moisture control."

RETAINING WALL 3010

EX. MORGAN CREEK

E AVENUE RAMP C

E AVENUE RAMP A

770

775

780

℄ CONSTRUCTION

WESTBOUND IA 100

IA 100 (ML100)

EASTBOUND IA 100

RB-533

RB-534

SB-1037

RB-540

RB-539

CH-05

SB-1038

CH-03

NHSX-100-1(96)--3H-57

OPTIONAL WORKING BLANKET

E AVENUE

OPTIONAL WORKING BLANKET

E AVENUE RAMP D

E AVENUE RAMP B

EX. MORGAN CREEK

0 FEET 50

SEC.28

IA 100 MAINLINE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.8

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OPTIONAL WORKING BLANKET NOTES:
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Removed from Note 4 "The material shall be placed with moisture control."

CLINTON TWP.
T-83N R-8W
SEC.21

STA. 811+00.00
END GRADING 5 PROJECT
BEGIN GRADING 6 PROJECT

CH-10
SB-1042
SB-1044
SB-1043
SB-1045
SB-1047
RB-548
RB-549
RB-552
RB-553
RB-555
RB-556
805
810
℄ CONSTRUCTION
WESTBOUND IA 100
IA 100 (ML100)
EASTBOUND IA 100
OPTIONAL WORKING BLANKET
EX. 80TH ST. NW (U.A.C.)
EX. BERGER LANE (CLOSED)
EX. ENT
EX. WORCESTER RD. (U.A.C.)
0 FEET 50
SEC.22

IA 100 MAINLINE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.14

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CLINTON TWP.
T-83N R-8W
SEC.21

E AVE. RAMP A

E AVE. RAMP D

EX. 80TH ST. NW (REMOVE)

RETAINING WALL 3010

2565

2570

2575

RB-1078

NHSX-100-1(93)--3H-57

RB-1076

5-01

E AVE. (SREAVE)

℄ CONSTRUCTION

SB-1075

NHSX-100-1(94)--3H-57

EX. MORGAN CK.

OPTIONAL WORKING BLANKET

E AVE. RAMP C

WESTBOUND IA 100

IA 100 (ML100)

EASTBOUND IA 100

E AVE. RAMP B

OPTIONAL WORKING BLANKET

EX. 80TH ST. SW (U.A.C.)

Removed from Note 4 "The material shall be placed with moisture control."

OPTIONAL WORKING BLANKET NOTES:
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SEC.27

E AVENUE

0 FEET 50

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.27

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Changed by Addenda

SEC.28

CLINTON TWP.
T-83N R-8W
SEC.21

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Removed from Note 4 "The material shall be placed with moisture control."

EX. E AVE. (U.A.C.)

E AVENUE

STA. 4060+13.95 (BERGER LN.)
STA. 2559+91.93, 22.00' LT. (E AVE.)
BEGIN CONSTRUCTION

4060

4065

4070

℄ CONSTRUCTION

BERGER LANE (SRBERGR)

RB-1082

RB-1084

RB-1086

RB-1088

OPTIONAL WORKING BLANKET

G2

0 FEET 50

BERGER LANE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.31

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OPTIONAL WORKING BLANKET NOTES:
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Removed from Note 4 "The material shall be placed with moisture control."

CLINTON TWP.
T-83N R-8W
SEC.21

21770

21775

RETAINING WALL 3010

OPTIONAL WORKING BLANKET

NHSX-100-1(97)--3H-57

E AVENUE RAMP C

E AVENUE

EX. MORGAN CK.

B CONSTRUCTION

E AVENUE RAMP A (EAVEA)

RB-1140

STA. 21769+34.85 (RAMP A)
STA. 2566+55.05, 19.89' LT. (E AVE.)
BEGIN RAMP A CONSTRUCTION

WESTBOUND IA 100

EASTBOUND IA 100

E AVENUE RAMP B

E AVENUE RAMP D

0 FEET 50

E AVENUE RAMP A

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.41

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CLINTON TWP.
T-83N R-8W
SEC.21

WESTBOUND IA 100

EASTBOUND IA 100

22760

22765

22770

E AVENUE

RB-800

RB-801

RB-802

RB-803

RB-805

RB-807

E AVENUE RAMP B (EAVEB)

E AVENUE RAMP D

℄ CONSTRUCTION

OPTIONAL WORKING BLANKET

STA. 22757+75.00 (RAMP B)
STA. 757+75.00, 98.00' RT. (IA 100)
BEGIN RAMP B CONSTRUCTION

STA. 22770+21.66 (RAMP B)
STA. 2572+88.29, 20.00' RT. (E AVE.)
END RAMP B CONSTRUCTION

Removed from Note 4 "The material shall be placed with moisture control."

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0 50
FEET

E AVENUE RAMP B

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.45

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Removed from Note 4 "The material shall be placed with moisture control."

CLINTON TWP.
T-83N R-8W
SEC.21

STA. 23758+58.54 (RAMP C)
STA. 758+56.77, 95.69' LT. (IA 100)
BEGIN RAMP C CONSTRUCTION

STA. 23769+41.38 (RAMP C)
STA. 2566+52.88, 19.83' RT.
END RAMP C CONSTRUCTION

23760

23765

OPTIONAL WORKING BLANKET

RB-1165

RB-810

SB-1133

SB-1132

B CONSTRUCTION

E AVENUE RAMP C (EAVEC)

ROCK PROTECTION

ROCK SPLASH BASIN

E AVENUE

WESTBOUND IA 100

IA 100 (ML 100)

EASTBOUND IA 100

E AVENUE RAMP B

G2

0 FEET 50

E AVENUE RAMP C

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/CH2MHILL	LINN COUNTY	PROJECT NUMBER NHSX-100-1(105)--3H-57	SHEET NUMBER Q.47

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