FA96 (Form 650019)
05-13

CONTRACT

Letting Date: August 18, 2015 Contract ID: 78-0801-366 Bid Order No.: 303
County: POTTAWATTAMIE Project Engineer: COUNCIL BLUFFS RCE
Cost Center: 601000 Object Code: 890 DBE Commitment: $0.00
Contract Work Type: GRADING

This agreement made and entered by and between the IOWA DEPARTMENT OF TRANSPORTATION, CONTRACTING AUTHORITY, AND
AMES CONSTRUCTION, INC. OF BURNSVILLE, MN, (AM193), CONTRACTOR

It is agreed that the notice and instructions to bidders, the proposal filed by the Contractor, the specifications, the plan, if any, for project(s) listed below, together with Contractor's performance bond, are made a part hereof and together with this instrument constitute the contract. This contract contains all of the terms and conditions agreed upon by the parties hereto. A true copy of said plan is now on file in the office of the Contracting Authority under date of 08/13/2015.

PROJECT: IMN-029-3(127)48--0E-78 COUNTY: POTTAWATTAMIE
WORK TYPE: RCB CULVERT NEW - SINGLE BOX ACCOUNTING ID: 32831
ROUTE: I-29 LENGTH (MILES): 0
LOCATION: COUNCIL BLUFFS INTERSTATE SYSTEM UNDER CBEC R.R.
NON-FEDERAL AID - PREDETERMINED WAGES ARE NOT IN EFFECT
PROJECT AMOUNT: $476,937.80

PROJECT: IMN-080-1(366)4--0E-78 COUNTY: POTTAWATTAMIE
WORK TYPE: GRADING ACCOUNTING ID: 32832
ROUTE: I-80 LENGTH (MILES): 0
LOCATION: IAIS R.R. IN COUNCIL BLUFFS
NON-FEDERAL AID - PREDETERMINED WAGES ARE NOT IN EFFECT
PROJECT AMOUNT: $12,765,595.97

The specifications consist of the Standard Specifications for Highway and Bridge Construction, Series 2012 of the Iowa Department of Transportation plus the following Supplemental Specifications, Special Provisions, and addendums: DS-12066, GS-12006, SP-120316, SP-120317, SP-120318, SP-120319A, SP-120320, SP-120321, SP-120322A, SP-120323, SP-120324, SP-120326A, SP-120332, SP-120333, SP-120335, SP-120341, SP-120343, ADDENDUMS: 18AUG303.A01, 18AUG303.A02, 18AUG303.A03

Contractor, for and in considerations of $13,242,533.77 payable as set forth in the specifications constituting a part of this contract, agrees to construct various items of work and/or provide various materials or supplies in accordance with the plans and specifications therefore, and in the locations designated in the Notice to Bidders.

Contractor certifies by signature on this contract, under pain of penalties for false certification, that the Contractor has complied with Iowa Code Section 452A.17(8) as amended, if applicable, and Iowa Code Section 91C.5 (Public Registration Number), if applicable.

In consideration of the foregoing, Contracting authority hereby agrees to pay the Contractor promptly and according to the requirements of the specifications the amounts set forth, subject to the conditions as set forth in the specifications.

It is further understood and agreed that the above work shall also be commenced or completed in accordance with Page 1B of this Contract and assigned Proposal Notes.

To accomplish the purpose herein expressed, the Contracting authority and Contractor have signed this and one other identical instrument.

For Federal-Aid contracts the Contractor certifies that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the contract.

By _____, _____
Contractor — Contractor (if joint venture)

By _____
Contracting Authority

SEP 22 2015
Contract Award Date

Iowa DOT Concurrence _____ _____

Letting Date: August 18, 2015 Contract ID: 78-0801-366 Bid Order No. : 303

It is further understood and agreed that the above work shall be commenced or completed in accordance with the following schedule:

SITE NUMBER	CONTRACT PERIOD /SITE DESCRIPTION	LIQUIDATED DAMAGES
CONTRACT	CONTRACT COMPLETION DATE: 01/30/2017	$2,000.00
01	CONTRACT COMPLETION DATE: 04/30/2016	$2,000.00
02	CONTRACT COMPLETION DATE: 08/02/2016	$2,000.00
03	APPROX START DATE 11/23/2016 14 CALENDAR DAYS	$2,000.00

CONTRACT NOTES

SEE NOTE 656.0199

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Primary County: POTTAWATTAMIE

Line No	Item Number / Item Description	Item Quantity and Unit	Unit Price Dollars	Unit Price Cts	Bid Amount Dollars	Bid Amount Cts
SECTION 0001	DESIGN NO. 1612; 14' X 8' X 40'-0 REINFORCED CONCRETE BOX CULVERT IMN-029-3(127)48--0E-78					
0010	2402-2720000 EXCAVATION, CLASS 20	82.000 CY	70.00000		5,740.00	
0020	2403-0100020 STRUCTURAL CONCRETE (RCB CULVERT)	307.900 CY	525.00000		161,647.50	
0030	2404-7775000 REINFORCING STEEL	32,588.000 LB	0.95000		30,958.60	
0040	2519-1001000 FENCE, CHAIN LINK, VINYL COATED	133.000 LF	42.50000		5,652.50	
0050	2533-4980005 MOBILIZATION	LUMP	LUMP		20,000.00	
SECTION 0002	DESIGN NO. 1712; TWIN 6'-0 X 4'-0 REINFORCED CONCRETE BOX CULVERT EXTENSION IMN-029-3(127)48--0E-78					
0060	2401-6750001 REMOVALS, AS PER PLAN	LUMP	LUMP		22,000.00	
0070	2402-2720000 EXCAVATION, CLASS 20	70.000 CY	50.00000		3,500.00	
0080	2403-0100020 STRUCTURAL CONCRETE (RCB CULVERT)	323.600 CY	525.00000		169,890.00	
0090	2404-7775000 REINFORCING STEEL	10,598.000 LB	0.95000		10,068.10	
0100	2501-8400172 TEMPORARY SHORING	LUMP	LUMP		16,000.00	

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0110	2507-3250005 ENGINEERING FABRIC	25.700 SY	3.00000		77.10	
0120	2507-6800061 REVETMENT, CLASS E	73.400 TON	60.00000		4,404.00	
0130	2533-4980005 MOBILIZATION	LUMP	LUMP		22,000.00	
0140	2595-0005110 RAILROAD PROTECTIVE LIABILITY INSURANCE FOR CBEC RAILWAY INC.	LUMP	LUMP		5,000.00	
SECTION 0003	ROADWAY ITEMS IMN-080-1(366)4--0E-78					
0150	2101-0850001 CLEARING AND GRUBBING	43.900 ACRE	3,200.00000		140,480.00	
0160	2102-2710070 EXCAVATION, CLASS 10, ROADWAY AND BORROW	164,196.000 CY	8.50000		1,395,666.00	
0170	2102-2710090 EXCAVATION, CLASS 10, WASTE	35,762.000 CY	9.50000		339,739.00	
0180	2102-2712015 EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	1,700.000 CY	20.00000		34,000.00	
0190	2105-8425015 TOPSOIL, STRIP, SALVAGE AND SPREAD	32,874.000 CY	6.00000		197,244.00	
0200	2107-0875000 COMPACTION WITH MOISTURE AND DENSITY CONTROL	131,315.000 CY	2.60000		341,419.00	

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0210	2111-8174100 GRANULAR SUBBASE	3,801.000 SY	9.00000		34,209.00	
0220	2123-7450020 SHOULDER FINISHING, EARTH	19.600 STA	850.00000		16,660.00	
0230	2301-1033080 STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	3,196.800 SY	65.00000		207,792.00	
0240	2304-0100000 DETOUR PAVEMENT	243.100 SY	95.00000		23,094.50	
0250	2315-8275030 SURFACING, DRIVEWAY, CLASS C GRAVEL	1,232.300 TON	25.00000		30,807.50	
0260	2401-6745650 REMOVAL OF EXISTING STRUCTURES	LUMP	LUMP		35,000.00	
0270	2401-6745910 REMOVAL OF SIGN	7.000 EACH	1,000.00000		7,000.00	
0280	2402-2720100 EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	6,433.000 CY	10.00000		64,330.00	
0290	2416-0100015 APRONS, CONCRETE, 15 IN. DIA.	4.000 EACH	1,000.00000		4,000.00	
0300	2416-0100018 APRONS, CONCRETE, 18 IN. DIA.	1.000 EACH	1,200.00000		1,200.00	
0310	2416-0102224 APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 24 IN.	2.000 EACH	1,200.00000		2,400.00	

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0320	2416-1200224 CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 24 IN.	18.000 LF	200.00000		3,600.00	
0330	2417-0225012 APRONS, METAL, 12 IN. DIA.	2.000 EACH	400.00000		800.00	
0340	2417-0225018 APRONS, METAL, 18 IN. DIA.	2.000 EACH	425.00000		850.00	
0350	2417-0225021 APRONS, METAL, 21 IN. DIA.	2.000 EACH	450.00000		900.00	
0360	2417-0225036 APRONS, METAL, 36 IN. DIA.	30.000 EACH	650.00000		19,500.00	
0370	2417-1007000 CORRUGATED PIPE CULVERT, 12 IN DIA.	31.000 LF	24.00000		744.00	
0380	2417-1060018 CULVERT, CORRUGATED METAL ROADWAY PIPE, 18 IN. DIA.	32.000 LF	28.00000		896.00	
0390	2417-1060021 CULVERT, CORRUGATED METAL ROADWAY PIPE, 21 IN. DIA.	32.000 LF	30.00000		960.00	
0400	2417-1060036 CULVERT, CORRUGATED METAL ROADWAY PIPE, 36 IN. DIA.	1,017.000 LF	46.00000		46,782.00	
0410	2422-0360024 APRONS, UNCLASSIFIED, 24 IN. DIA.	2.000 EACH	500.00000		1,000.00	
0420	2422-0360030 APRONS, UNCLASSIFIED, 30 IN. DIA.	2.000 EACH	550.00000		1,100.00	

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0430	2422-1723024 CULVERT, UNCLASSIFIED ROADWAY PIPE, 24 IN. DIA.	32.000 LF	32.00000		1,024.00	
0440	2422-1723030 CULVERT, UNCLASSIFIED ROADWAY PIPE, 30 IN. DIA.	40.000 LF	42.00000		1,680.00	
0450	2435-0140160 MANHOLE, STORM SEWER, SW-401, 60 IN.	6.000 EACH	5,000.00000		30,000.00	
0460	2435-0250100 INTAKE, SW-501	1.000 EACH	3,400.00000		3,400.00	
0470	2435-0250700 INTAKE, SW-507	5.000 EACH	6,500.00000		32,500.00	
0480	2435-0251224 INTAKE, SW-512, 24 IN.	1.000 EACH	3,000.00000		3,000.00	
0490	2435-0254100 INTAKE, SW-541	1.000 EACH	9,000.00000		9,000.00	
0500	2435-0700020 CONNECTION TO EXISTING INTAKE	1.000 EACH	1,500.00000		1,500.00	
0510	2502-8212034 SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	1,760.000 LF	11.00000		19,360.00	
0520	2502-8221303 SUBDRAIN OUTLET, DR-303	16.000 EACH	200.00000		3,200.00	
0530	2503-0114212 STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 12 IN.	8.000 LF	100.00000		800.00	

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0540	2503-0114215 STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	353.000 LF	55.00000		19,415.00	
0550	2503-0114218 STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.	15.000 LF	135.00000		2,025.00	
0560	2503-0114236 STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 36 IN.	93.000 LF	150.00000		13,950.00	
0570	2503-0200036 REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	308.000 LF	12.00000		3,696.00	
0580	2510-6745850 REMOVAL OF PAVEMENT	2,478.000 SY	16.00000		39,648.00	
0590	2510-6750600 REMOVAL OF INTAKES AND UTILITY ACCESSES	4.000 EACH	500.00000		2,000.00	
0600	2511-0300000 REMOVAL OF RECREATIONAL TRAIL	1,386.000 SY	8.00000		11,088.00	
0610	2511-0301600 RECREATIONAL TRAIL, HOT MIX ASPHALT, 6 IN.	1,581.000 SY	39.00000		61,659.00	
0620	2511-0310100 SPECIAL COMPACTION OF SUBGRADE FOR RECREATIONAL TRAIL	14.300 STA	600.00000		8,580.00	

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0630	2511-6745900 REMOVAL OF SIDEWALK	103.500 SY	20.00000		2,070.00	
0640	2511-7526004 SIDEWALK, P.C. CONCRETE, 4 IN.	218.300 SY	67.00000		14,626.10	
0650	2511-7526006 SIDEWALK, P.C. CONCRETE, 6 IN.	15.500 SY	115.00000		1,782.50	
0660	2511-7528101 DETECTABLE WARNINGS	96.000 SF	22.00000		2,112.00	
0670	2515-6745600 REMOVAL OF PAVED DRIVEWAY	127.000 SY	36.00000		4,572.00	
0680	2517-4225210 RAILROAD APPROACH SECTION, P.C.C.	333.900 SY	110.00000		36,729.00	
0690	2518-6891820 PERMANENT ROAD CLOSURE, URBAN, SI-182	2.000 EACH	1,900.00000		3,800.00	
0700	2518-6910000 SAFETY CLOSURE	17.000 EACH	115.00000		1,955.00	
0710	2519-1002048 FENCE, CHAIN LINK, 48 IN. HEIGHT	1,407.300 LF	12.50000		17,591.25	
0720	2519-3300600 FENCE, SAFETY	6,750.000 LF	2.50000		16,875.00	
0730	2519-4200120 REMOVAL OF FENCE, CHAIN LINK	1,221.000 LF	2.00000		2,442.00	

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0740	2519-4200190 REMOVAL OF FENCE, SAFETY	300.000 LF	3.00000		900.00	
0750	2520-3350010 FIELD LABORATORY	1.000 EACH	12,000.00000		12,000.00	
0760	2523-0000200 ELECTRICAL CIRCUITS	1,040.000 LF	40.00000		41,600.00	
0770	2523-0000310 HANDHOLES AND JUNCTION BOXES	3.000 EACH	3,250.00000		9,750.00	
0780	2524-9276010 PERFORATED SQUARE STEEL TUBE POSTS	81.000 LF	32.00000		2,592.00	
0790	2524-9276021 PERFORATED SQUARE STEEL TUBE POST ANCHOR, BREAK-AWAY SOIL INSTALLATION	7.000 EACH	710.00000		4,970.00	
0800	2524-9276027 PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	7.000 EACH	330.00000		2,310.00	
0810	2524-9325150 INSTALL TYPE A SIGN	7.000 EACH	310.00000		2,170.00	
0820	2526-8285000 CONSTRUCTION SURVEY	LUMP	LUMP		65,000.00	
0830	2527-9263109 PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	17.390 STA	225.00000		3,912.75	

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0840	2527-9263137 PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	2.000 EACH	150.00000		300.00	
0850	2528-8445110 TRAFFIC CONTROL	LUMP	LUMP		16,000.00	
0860	2533-4980005 MOBILIZATION	LUMP	LUMP		1,309,000.00	
0870	2595-0005100 RAILROAD PROTECTIVE LIABILITY INSURANCE FOR SIRE	LUMP	LUMP		4,500.00	
0880	2595-0005105 RAILROAD PROTECTIVE LIABILITY INSURANCE FOR BNSF RAILWAY CO.	LUMP	LUMP		4,500.00	
0890	2595-0005110 RAILROAD PROTECTIVE LIABILITY INSURANCE FOR CBEC RAILWAY INC.	LUMP	LUMP		4,500.00	
0900	2595-0005135 RAILROAD PROTECTIVE LIABILITY INSURANCE FOR IOWA INTERSTATE RAILROAD LTD.	LUMP	LUMP		4,500.00	
0910	2595-0450079 RAILROAD SUBBALLAST, FURNISH AND PLACE	46,885.600 TON	32.00000		1,500,339.20	
0920	2595-7400200 REMOVAL OF RAILROAD TRACK	863.000 TLF	23.00000		19,849.00	
0930	2599-9999003 ('CUBIC YARDS' ITEM) IMPERVIOUS FILL	39,400.000 CY	21.00000		827,400.00	

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0940	2599-9999003 ('CUBIC YARDS' ITEM) OVEREXCAVATE, RECONDITION, AND RECOMPACT NATIVE SOIL	39,400.000 CY	3.00000		118,200.00	
0950	2599-9999005 ('EACH' ITEM) CROSSING DIAMOND	1.000 EACH	295,000.00000		295,000.00	
0960	2599-9999005 ('EACH' ITEM) DERAIL	1.000 EACH	4,400.00000		4,400.00	
0970	2599-9999005 ('EACH' ITEM) END OF TRACK BUMPER	9.000 EACH	3,800.00000		34,200.00	
0980	2599-9999005 ('EACH' ITEM) METER POLE	3.000 EACH	8,000.00000		24,000.00	
0990	2599-9999005 ('EACH' ITEM) REMOVAL OF TURNOUT	2.000 EACH	8,054.00000		16,108.00	
1000	2599-9999005 ('EACH' ITEM) TURNOUT, 115 lb No. 9, WOOD TIES (INDUSTRY)	3.000 EACH	70,000.00000		210,000.00	
1010	2599-9999005 ('EACH' ITEM) TURNOUT, 136 lb No. 11, STEEL TIES (INDUSTRY)	1.000 EACH	78,000.00000		78,000.00	
1020	2599-9999005 ('EACH' ITEM) TURNOUT, 136 lb No. 11, WOOD TIES (MAINLINE)	2.000 EACH	98,000.00000		196,000.00	
1030	2599-9999009 ('LINEAR FEET' ITEM) SMOOTH STEEL PIPE, 36 IN. DIA.	114.000 LF	275.00000		31,350.00	

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1040	2599-9999018 ('SQUARE YARDS' ITEM) GEOGRID FOR RAILROADS	183,902.000 SY	1.65000		303,438.30	
1050	2599-9999018 ('SQUARE YARDS' ITEM) HMA UNDERLAYMENT	1,848.000 SY	92.00000		170,016.00	
1060	2599-9999018 ('SQUARE YARDS' ITEM) NON-WOVEN GEOTEXTILE	79,705.000 SY	1.25000		99,631.25	
1070	2599-9999018 ('SQUARE YARDS' ITEM) SUBGRADE PREPARATION FOR RAILROADS	142,750.000 SY	0.50000		71,375.00	
1080	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAIL, 115 LB, WOOD TIES (INDUSTRY)	4,148.000 TLF	141.00000		584,868.00	
1090	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAIL, 136 LB, STEEL TIES (INDUSTRY)	1,768.000 TLF	168.00000		297,024.00	
1100	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAIL, 136 LB, STEEL TIES, REMOVE AND REINSTALL (INDUSTRY)	1,958.000 TLF	115.00000		225,170.00	
1110	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAIL, 136 LB. WOOD TIES (MAINLINE)	8,463.000 TLF	160.00000		1,354,080.00	
1120	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAILROAD CROSSING, PCC 10' WOOD TIES	187.000 TLF	545.00000		101,915.00	

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1130	2599-9999019 ('TRACK LINEAR FEET' ITEM) RAILROAD CROSSING, PCC, STEEL TIES	27.000 TLF	760.00000		20,520.00	
1140	2599-9999019 ('TRACK LINEAR FEET' ITEM) TRACK RESURFACING (INDUSTRY)	1,056.000 TLF	29.00000		30,624.00	
1150	2599-9999020 ('TONS' ITEM) RAILROAD BALLAST (INDUSTRY)	9,295.200 TON	45.00000		418,284.00	
1160	2599-9999020 ('TONS' ITEM) RAILROAD BALLAST (MAINLINE)	9,142.200 TON	45.00000		411,399.00	
1170	2601-2636043 SEEDING AND FERTILIZING (RURAL)	30.600 ACRE	350.00000		10,710.00	
1180	2601-2636044 SEEDING AND FERTILIZING (URBAN)	0.800 ACRE	750.00000		600.00	
1190	2601-2642100 STABILIZING CROP - SEEDING AND FERTILIZING	31.400 ACRE	150.00000		4,710.00	
1200	2601-3000112 MONITORING WELL ABANDONMENT	3.000 EACH	2,500.00000		7,500.00	
1210	2602-0000020 SILT FENCE	22,046.000 LF	1.50000		33,069.00	
1220	2602-0000030 SILT FENCE FOR DITCH CHECKS	528.000 LF	1.75000		924.00	
1230	2602-0000050 SILT BASINS	94.000 EACH	125.00000		11,750.00	

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1240	2602-0000071 REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	11,287.000 LF	0.10000		1,128.70	
1250	2602-0000080 REMOVAL OF SILT BASINS	94.000 EACH	175.00000		16,450.00	
1260	2602-0000101 MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	2,257.000 LF	0.60000		1,354.20	
1270	2602-0010010 MOBILIZATIONS, EROSION CONTROL	1.000 EACH	500.00000		500.00	
1280	2602-0010020 MOBILIZATIONS, EMERGENCY EROSION CONTROL	1.000 EACH	1,000.00000		1,000.00	
	SECTION 0004 ALTERNATE 'AA' OPTION 1: PCC SHOULDER BID THIS SECTION IF ALTERNATE 'AA' OPTION 1 IS CHOSEN (366) ALT GROUP AA1					
1290	2102-0425070 SPECIAL BACKFILL	7.700 TON	400.00000		3,080.00	
1300	2122-5190007 PAVED SHOULDER, P.C. CONCRETE, 7 IN.	25.800 SY	126.00000		3,250.80	
1310	2123-7450000 SHOULDER CONSTRUCTION, EARTH	0.560 STA	970.00000		543.20	
	SECTION 0006 SANITARY SEWER IMN-080-1(366)4--0E-78					
1341	2102-2710070 EXCAVATION, CLASS 10, ROADWAY AND BORROW	120.000 CY	15.00000		1,800.00	

Vendor No.: AM193 Bid Order No.: 303
Contract ID No.: 78-0801-366 Letting Date: August 18, 2015
Primary Work Type: GRADING 10:00 A.M.
Primary County: POTTAWATTAMIE

Line No	Item Number / Item Description	Item Quantity and Unit	Unit Price Dollars	Unit Price Cts	Bid Amount Dollars	Bid Amount Cts
1342	2435-0130200 MANHOLE, SANITARY SEWER, SW-302	3.000 EACH	9,500.00000		28,500.00	
1350	2504-0114012 SANITARY SEWER GRAVITY MAIN, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 12 IN.	78.000 LF	86.00000		6,708.00	
1351	2504-0116018 SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	216.000 LF	105.00000		22,680.00	
1352	2504-0130018 SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.	120.000 LF	425.00000		51,000.00	
1360	2504-0134012 SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, POLYVINYL CHLORIDE PIPE (PVC), 12 IN.	144.000 LF	325.00000		46,800.00	
1370	2504-0240036 REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	489.000 LF	15.00000		7,335.00	
1380	2507-3250005 ENGINEERING FABRIC	80.000 SY	6.00000		480.00	
1381	2510-6750600 REMOVAL OF INTAKES AND UTILITY ACCESSES	2.000 EACH	650.00000		1,300.00	
1382	2549-0006320 URETHANE CHIMNEY SEAL	3.000 EACH	450.00000		1,350.00	
1390	2552-0000210 TRENCH FOUNDATION	100.000 TON	20.00000		2,000.00	

Vendor No.: AM193 Bid Order No.: 303
Contract ID No.: 78-0801-366 Letting Date: August 18, 2015
Primary Work Type: GRADING 10:00 A.M.
Primary County: POTTAWATTAMIE

Line No	Item Number / Item Description	Item Quantity and Unit	Unit Price Dollars	Unit Price Cts	Bid Amount Dollars	Bid Amount Cts
1400	2552-0000220 REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	550.000 CY	5.00000		2,750.00	
1401	2599-9999005 ('EACH' ITEM) CONNECT SANITARY SEWER PIPE	4.000 EACH	1,000.00000		4,000.00	
1410	2599-9999005 ('EACH' ITEM) CONNECT TO EXISTING SANITARY SEWER PIPE	4.000 EACH	1,000.00000		4,000.00	
1420	2599-9999010 ('LUMP SUM' ITEM) BYPASS PUMPING	LUMP	LUMP		20,000.00	
1430	2552-0000210 TRENCH FOUNDATION	40.000 TON	20.00000		800.00	
1440	2552-0000220 REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	80.000 CY	5.00000		400.00	
1450	2554-0112008 WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 8 IN.	50.000 LF	115.00000		5,750.00	
1460	2554-0122008 WATER MAIN, TRENCHLESS, DUCTILE IRON PIPE (DIP), 8 IN.	30.000 LF	1,000.00000		30,000.00	
1470	2554-0142008 WATER MAIN WITH CASING PIPE, TRENCHLESS, DUCTILE IRON PIPE (DIP), 8 IN.	137.000 LF	1,000.00000		137,000.00	
1480	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, MECHANICAL JOINT TEE (DIP) 8INX8INX8IN	1.000 EACH	1,100.00000		1,100.00	

Vendor No.: AM193 Bid Order No.: 303
Contract ID No.: 78-0801-366 Letting Date: August 18, 2015
Primary Work Type: GRADING 10:00 A.M.
Primary County: POTTAWATTAMIE

Line No	Item Number / Item Description	Item Quantity and Unit	Unit Price Dollars	Unit Price Cts	Bid Amount Dollars	Bid Amount Cts
1490	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, MWCHANICAL JOINT (DIP), 8 IN 45 BEND	4.000 EACH	675.00000		2,700.00	
1500	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, MECHANICAL JOINT(DIP), 8IN X 6IN REDUCER	1.000 EACH	775.00000		775.00	
1510	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, SLEEVE 8 IN STANDARD SIZE (DIP)	7.000 EACH	825.00000		5,775.00	
1520	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, SLEEVE 6 IN STNADARD SIZE (DIP)	2.000 EACH	525.00000		1,050.00	
1530	2554-0202200 FITTINGS BY COUNT, DUCTILE IRON, PLUG 6 IN (DIP)	1.000 EACH	650.00000		650.00	
1540	2554-0207008 VALVE, GATE, DIP, 8 IN.	2.000 EACH	2,250.00000		4,500.00	
1550	2555-0000010 DELIVER AND STOCKPILE SALVAGED MATERIALS	LUMP	LUMP		1,000.00	
1560	2599-9999005 ('EACH' ITEM) TRENCHLESS WATER MAIN SETUP	1.000 EACH	8,474.72000		8,474.72	
1570	2599-9999005 ('EACH' ITEM) CUT & CONNECT TO EXISTING 8IN WATER MAIN	4.000 EACH	2,000.00000		8,000.00	
1580	2599-9999005 ('EACH' ITEM) CUT & CONNECT TO EXISTING 6IN WATER MAIN	1.000 EACH	2,000.00000		2,000.00	

Vendor No.: AM193 Bid Order No.: 303
Contract ID No.: 78-0801-366 Letting Date: August 18, 2015
Primary Work Type: GRADING 10:00 A.M.
Primary County: POTTAWATTAMIE

Line No	Item Number / Item Description	Item Quantity and Unit	Unit Price Dollars	Unit Price Cts	Bid Amount Dollars	Bid Amount Cts
1590	2599-9999005 ('EACH' ITEM) CUT & PLUG EXISTING 8IN WATER MAIN	1.000 EACH	1,200.00000		1,200.00	
1600	2599-9999005 ('EACH' ITEM) CUT & PLUG EXISTING 6IN WATER MAIN	1.000 EACH	1,200.00000		1,200.00	
	TOTAL BID				13,242,533.77	

Addendum

Iowa Department of Transportation
Office of Contracts

Date of Letting: August 18, 2015
Date of Addendum: July 29, 2015

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
303	78-0801-366	GRADING	POTTAWATTAMIE	IMN-029-3(127)48--0E-78 IMN-080-1(366)4--0E-78	18AUG303.A01

ADD the following to the PROPOSAL SPECIAL PROVISIONS LIST & TEXT:

660.31 *** SPECIALTY ITEMS CBIS RAILROAD WORK ***

The item 'RAILROAD SUBBALLAST, FURNISH AND PLACE' is considered a specialty item for this project.

The item 'REMOVAL OF RAILROAD TRACK' is considered a specialty item for this project.

The item 'IMPERVIOUS FILL' is considered a specialty item for this project.

The item 'OVEREXCAVATE,RECONDITION, AND RECOMPACT NATIVE SOIL' is considered a specialty item for this project.

The item 'CROSSING DIAMOND' is considered a specialty item for this project.

The item 'DERAIL' is considered a specialty item for this project.

The item 'END OF TRACK BUMPER' is considered a specialty item for this project.

The item 'METER POLE' is considered a specialty item for this project.

The item 'REMOVAL OF TURNOUT' is considered a specialty item for this project.

The item 'TURNOUT, 115 lb No. 9, WOOD TIES (INDUSTRY)' is considered a specialty item for this project.

The item 'TURNOUT, 136 lb No. 11, STEEL TIES (INDUSTRY)' is considered a specialty item for this project.

The item 'TURNOUT, 136 lb No. 11, WOOD TIES (MAINLINE)' is considered a specialty item forthis project.

The item 'SMOOTH STEEL PIPE, 36 IN. DIA.' isconsidered a specialty item for this project.

The item 'GEOGRID FOR RAILROADS' is considered a specialty item for this project.

The item 'HMA UNDERLAYMENT' is considered a specialty item for this project.

The item 'NON-WOVEN GEOTEXTILE' is considered a specialty item for this project.

The item 'SUBGRADE PREPARATION FOR RAILROADS' is considered a specialty item for this project.

The item 'RAIL, 115 LB, WOOD TIES (INDUSTRY)' is considered a specialty item for this project.

The item 'RAIL, 136 LB, STEEL TIES (INDUSTRY)' is considered a specialty item for this project.

The item 'RAIL, 136 LB, STEEL TIES, REMOVE AND REINSTALL (INDUSTRY)' is considered a specialty item for this project.

The item 'RAIL, 136 LB. WOOD TIES (MAINLINE)' is considered a specialty item for this project.

The item 'RAILROAD CROSSING, PCC 10' WOOD TIES' is considered a specialty item for this project.

The item 'RAILROAD CROSSING, PCC, STEEL TIES' is considered a specialty item for this project.

The item 'TRACK RESURFACING (INDUSTRY)' is considered a specialty item for this project.

The item 'RAILROAD BALLAST (INDUSTRY)' is considered a specialty item for this project.

The item 'RAILROAD BALLAST (MAINLINE)' is considered a specialty item for this project.

When performed by subcontract, the cost of the specialty item/s so performed by subcontract may be deducted from the total cost before computing the amount of work required to be performed by the Prime Contractor with his/her own organization. Refer to Article 1108.01 of the Standard Specifications.

A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: August 18, 2015
Date of Addendum: August 11, 2015

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
303	78-0801-366	GRADING	POTTAWATTAMIE	IMN-029-3(127)48--0E-78 IMN-080-1(366)4--0E-78	18AUG303.A02

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

Add Proposal Line No. 1341 2102-2710070 Excavation, Class 10, Roadway and Borrow; 120.000 CY

Add Proposal Line No. 1342 2435-0130200 Manhole, Sanitary Sewer, SW-302, 3.000 EACH

Add Proposal Line No. 1351 2504-0116018 Sanitary Sewer Gravity Main, Trenched, Ductile Iron Pipe (DIP), 18 in., 216.000 LF

Add Proposal Line No. 1352 2504-0130018 Sanitary Sewer Gravity Main with Casing Pipe, Trenched, 18 in., 120.000 LF

Change Proposal Line No. 1370 2504-0240036 Remove Sanitary Sewer Pipe Less Than or Equal to 36 in:
From: 222.000 LF
To: 489.000 LF

Add Proposal Line No. 1381 2510- 6750600 Removal of Intakes and Utility Accesses, 2.000 EACH

Add Proposal Line No. 1382 2549-0006320 Urethane Chimney Seal, 3.000 EACH

Change Proposal Line No. 1390 2553-0000210 Trench Foundation:
From: 50.000 TON
To: 100.000 TON

Change Proposal Line No. 1400 2552-0000220 Replacement of Unsuitable Backfill Material:
From: 450.000 CY
To: 550.000 CY

Add Proposal Line No. 1401 2599-9999005 Connect Sanitary Sewer Pipe, 4.000 EACH

Add Proposal Line No. 1430 2552-0000210 , Trenched Foundation 40.000 EACH

Add Proposal Line No. 1440 2552-0000220 , Replacement of Unsuitable Backfill Material, 80.000 CY

Add Proposal Line No. 1450 2554-0112008, Water Main, Trenched Ductile Iron Pipe (DIP), 8", 50.000 LF

Add Proposal Line No. 1460 2554-0122008, Water Main, Trenchless Ductile Iron Pipe (DIP), 8", 30.000 LF

Add Proposal Line No. 1470, 2554-0142008 Water Main, with 20" Casing Pipe, Trenched (DIP), 8", 137.000 LF

Add Proposal Line No. 1480, 2554-0202200 Fitting by Count, Mechanical Joint Tee (DIP), 8"x8"x8" , 1.000 EACH

Add Proposal Line No. 1490, 2554-0202200 , Fitting by Count, Mechanical Joint (DIP), 8" 45 Bend 4.000 EACH

Add Proposal Line No. 1500, 2554-0202200 , Fitting by Count, Mechanical Joint (DIP), 8"X6 Reducer 1.000 EACH

Add Proposal Line No. 1510, 2554-0202200 Fitting by Count, Sleeve 8" Standard Size (DIP), 7.000 EACH

Add Proposal Line No. 1520, 2554-0202200 Fitting by Count, Sleeve 6" Standard Size (DIP), 2.000 EACH

Add Proposal Line No. 1530, 2554-0202200 Fitting by Count, Plug 6" (DIP), 1.000 EACH

Add Proposal Line No. 1540, 2554-0207008 Gate Valve and Valve Box 8", 2.000 EACH

Add Proposal Line No. 1550, 2555-0000010 Deliver and Stockpile Salvaged Materials, 1.000 LS

Add Proposal Line No. 1560, 2599-9999005 Trenchless Water Main Setup, 1.000 EACH

Add Proposal Line No. 1570, 2599-9999005, Cut and Connect to Existing 8" Water Main 4.000 EACH

Add Proposal Line No. 1580, 2599-9999005, Cut and Connect to Existing 6" Water Main 1.000 EACH

Add Proposal Line No. 1590, 2599-9999005, Cut and Plug Existing 8" Water Main 1.000 EACH

Add Proposal Line No. 1600, 2599-9999005, Cut and Plug Existing 6" Water Main 1.000 EACH

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

Make the following change to the Proposal Special Provisions Text:

Add this note to the work restrictions of 656.0199

Access to Haul Route #4 from South Omaha Bridge Road will not be available until April 1, 2016.

Replace SP 120319 with the attached SP 120319a

Revised language for - EMERGENCY ACTION PLAN that clarifies submittal requirements.

Make the following changes to the plans:

Replace plan sheet A.1 with the attached:

Revised A.1 sheet with updated Index of Sheets table and Index of Seals table.

Replace plan sheet M.6, M.7, & M.8 with the attached:

Add plan sheets M.9 thru M.15 to the plans:

Additional plan sheets M.6 – M.10 and M.11 – M15 for sanitary sewer relocation at 20th Avenue and water main relocation in the area of 8th Street and 12th Avenue.

SP-120319a
(Replaces SP-120319)

Iowa Department of Transportation

SPECIAL PROVISION
FOR
EMERGENCY ACTION PLAN

Pottawattamie County
IMN-080-1(366)4--0E-78

Effective Date
August 18, 2015

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120319a.01 DESCRIPTION.

A. **Levee Unit Name:** Ag Levee L-624, Section 3 (Mosquito Creek Levee)
Missouri River - Council Bluffs Flood Protection

Local Sponsor: City of Council Bluffs, Iowa

River Miles: M0.00 to about M1.69

Levee Stations: 998+45 to 1100+00

Project Name: Council Bluffs Interstate System – Segment 3
Railroad Consolidation
Pottawattamie County, Iowa

B. The Iowa DOT is proceeding with the railroad consolidation as a part of the Council Bluffs Interstate System (CBIS) improvement program. The work for railroad consolidation involves the construction of new railroad embankments. The levee affected by this construction is the Agricultural Levee L-624, which is a part of the Council Bluffs Flood Protection System that was originally designed and constructed by the Omaha District of the U.S. Army Corps of Engineers (USACE) in the early 1950s. A large portion of the railroad consolidation will take place within the "critical area" of the levee, which is defined by the USACE as the area within 300 feet riverward and 500 feet landward of the levee.

The specific work covered by this Emergency Action Plan (EAP) addresses the earthen embankments for the new railroad tracks, excavated shallow ditches along the toes of the railroad embankments, a box culvert for a bike path underpass through the rail embankment near levee Station 1079+00R, and railroad embankment construction at the Mosquito Creek right bank levee tie-in located at the north end of the levee. The majority of this construction will take place within the levee critical area of the subject levee. The levee critical area is considered by the USACE to be the area from 300 feet riverward to 500 feet landward of the flood control project.

C. The purpose of this Special Provision is to identify the submittals required by the Contractor for compliance with the Section 408 submittal to the USACE, state the Section 408 submittal limitations on work in the levee critical area, establish the minimum monitoring requirements, establish the emergency response in case of a flood event, and establish the restoration requirements for damage to the levee critical area. A copy of the Section 408 submittal is available from the Engineer.

120319a.02 CONSTRUCTION.

A. Preparation of Emergency Action Plan.
Prior to construction, the Contractor shall prepare and follow an EAP, which will address the requirements presented in this document and the procedures for high water conditions on either the Missouri River or the Mosquito Creek during construction. The EAP shall include emergency contact information, including cell phone and pager numbers of the project manager, project superintendent and foreman. The numbers provided shall be monitored 24 hours a day, 7 days a week.

B. Submittals.
Any changes proposed by the Contractor for construction activities located in the levee critical area, such as: changes to staging, excavation depths, shoring, haul routes, or levee access; groundwater dewatering; or pumping water from the Mosquito Creek must be submitted to the Engineer for approval. Submittals will be reviewed by the Engineer, the City of Council Bluffs, and the USACE. Allow 9 weeks for review of these submittals. This time frame does not include review of resubmittals.

If any of these changes are anticipated, a description and location of the proposed changes, approximate time frame that the work will occur, any emergency action necessary, and a description of the proposed removal and restoration shall be included in the EAP submittal.

C. Construction Staging.

1. The Iowa DOT, City of Council Bluffs representatives, and the Engineer shall be notified 1 week prior to construction of the track embankment that ties into the levee section at the north end of the right bank of Mosquito Creek at the Iowa Interstate System railroad embankment (levee Station 985+45), and at the completion of construction operations.

2. Determination that the proposed work is considered substantially complete work will include review of:
   a. The earthwork grading and
   b. Satisfactory compaction test results.

D. Limitations.

1. The Contractor must ensure that the proposed construction will not involve any additional landward or riverward excavations in the critical area that may negatively impact the levee at any time during construction except as shown in the approved plans and specifications.

2. The Contractor must ensure that access to the levee crest and area within 15 feet of the levee toe is available to the City of Council Bluffs and USACE at all times. Any required restrictions will require prior approval of the Engineer and the City of Council Bluffs.

120319a.03 EMERGENCY ACTION PLAN.

A. Contents of Emergency Action Plan.

1. The contents of the EAP shall present a detailed staging plan and all provisions in the contract documents so that the integrity of the levee system and its ability to provide flood protection will be maintained throughout the entire duration of construction. A site map shall be provided in the EAP that identifies the location of:
   - Drainage District Right-of-Way (provided by the Engineer),
   - levee centerline with stationing (provided by the Engineer),
   - 500 foot landward critical area (provided by the Engineer),
   - Proposed haul routes,
   - Proposed construction within the levee critical area,
   - Stockpiles that will be available for emergency backfill along with dates that stockpiles will be in-place and type of materials, and
   - Proposed levee access locations.

   The EAP shall include the schedule for activities within the levee critical area such as planned excavations.

   The EAP shall be submitted at least 9 weeks prior to construction within the critical area.

2. The proposed construction will be performed during flood and non-flood event periods. The potential does exist for the river or stream to rise to flood level during the proposed construction. The Contractor shall have the provisions described in this Special Provision in place to address this potential.

B. Procedures.

The following procedures shall be in place to address an emergency situation:

1. **Daily Monitoring.**
   a. The water level in the Missouri River shall be monitored on a daily basis by the Contractor and recorded in the daily construction log. The extended forecast of future river levels and precipitation in the Mosquito Creek drainage basin shall also be monitored and recorded in the daily construction log. The Contractor shall be able to react quickly to the required actions described in this Special Provision, if a heavy precipitation event occurs at any time of the day.
   b. The Engineer and the City of Council Bluffs shall be notified if flood waters in the Mosquito Creek come into contact with the levee or are near the top of the levee within the construction limits.

2. **Monitoring Agencies.**
   a. The river level shall be monitored through USGS and National Weather Service websites for River Gage - 06610000 Missouri River at Omaha, NE.
      - http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06610000&amp
      - http://www.riverwatch.noaa.gov/forecasts/OAXRDOAX.php
   b. The Mosquito Creek basin precipitation forecast shall be monitored through the National Weather Service website.
      - http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml

3. **Ceasing Operation.**
   a. Construction operation involving excavations will cease in the event the river levels are within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet). The 100 year flood elevation at this location is 981.0 feet. The 500 year flood elevation is 983.0 feet.
   b. In the event greater that 1 inch of rainfall in a 24 hour period is forecasted for the Mosquito Creek drainage basin, coordinate the work planned on the levee or riverward of the levee with the Engineer and City of Council Bluffs and take actions to ensure that no material or equipment is located on the levee or riverward of the levee at the end of the shift.

c. Construction operations on the levee or riverward of the levee will cease if an unforeseen precipitation event occurs and the water level in the Mosquito Creek begins to approach bank full of the minor channel. Material and equipment shall be removed from the levee and riverward of the levee within 4 hours of the unforeseen precipitation event.
d. Coordinate with the Engineer, City of Council Bluffs, and USACE to determine timing and sequence of activities, as appropriate for returning to working following the receding of flood waters.

4. **Construction Equipment.**
Provide a list of all construction equipment that will be present throughout the duration of construction within the critical area and will be available for emergency flood fighting activities.

5. **Emergency Backfilling.**
a. Emergency backfilling shall be commenced, if the river level reaches an elevation within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet). The rate of emergency backfilling shall exceed the rate of the rising river. Excavated soil shall be used as emergency backfill.
b. Emergency backfilling shall commence, if the water level in the Mosquito Creek begins to approach bank full of the minor channel. The rate of emergency backfilling shall exceed the rate of the rising water. Excavated soils shall be used as emergency backfill.
c. If excessive seepage is observed in any of the excavations, the City and Engineer shall be notified immediately to determine the appropriate course of action.

120319a.04 EMERGENCY CONTACT INFORMATION.

A. City of Council Bluffs.
Jeff Krist, P.E.
City of Council Bluffs, Public Works Dept.
290 Pearl Street
Council Bluffs, Iowa 51503
Phone: 712-328-4635 (office)
Email: jkrist@councilbluffs-ia.gov

Pat Miller, Operations Manager
Phone: 402-510-2700 (cell)

Jeremy Noel, Levee Superintendent
Phone: 402-968-7301 (cell)

B. Iowa DOT Resident Construction Engineer.
David Dorsett, P.E.
3538 S. Expressway
Council Bluffs, Iowa 51501
Phone: 712-366-0568
Email: David.Dorsett@dot.iowa.gov

C. Iowa DOT District 4 Construction Engineer.
George Feazell, P.E.
2210 East 7th Street
Atlantic, Iowa 50022
Phone: 712-243-3355
Email: George.Feazell@dot.iowa.gov

D. Section 408 Engineer.
Patrick H. Poepsel, P.E.

HDR, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114
Phone: 402-399-1368
Email: Patrick.Poepsel@hdrinc.com

E. USACE – Omaha District.
Ryan Buckley, P.E.
USACE – Readiness Branch
1616 Capitol Avenue, Suite 9000
Omaha, Nebraska 68102-4926
Phone: 402-995-2446
Email: Ryan.M.Buckley@usace.army.mil

F. Contractor.
Provide primary and secondary contact information for project manager, project superintendent, and foreman.

120319a.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.
All costs for complying with this special provision including the preparation of the EAP, inclusion of submittals with the EAP, project coordination, pre- and post-construction surveys, monitoring, emergency actions, and any other item associated with implementation of the EAP shall be considered incidental to the project. No separate payment will be made.

LETTING DATE 8/18/2015

POTTAWATTAMIE Co. RAILROAD CONSOLIDATION IMN-080-1(366)4--0E-78

INDEX OF SHEETS

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

POTTAWATTAMIE COUNTY

RAILROAD CONSOLIDATION

BNSF RAILWAY COUNCIL BLUFFS SUBDIVSION MP 488.60 TO MP 492.80
BNSF RAILWAY BAYARD SUBDIVISION MP 481.02 TO MP 483.39
CBEC RAILWAY 16TH AVENUE TO CBEC JUNCTION
BARTLETT GRAIN ELEVATOR INDUSTRIAL TRACKAGE
SOUTHWEST IOWA RENEWABLE ENERGY (SIRE) INDUSTRIAL TRACKAGE
WESTERN ENGINEERING INDUSTRIAL TRACKAGE

SCALES: 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

IOWA ONE CALL 1-800-292-8989 811

INDEX OF SHEETS

For Project Location Map Refer to Sheet A.2 - A.3

REVISIONS

TOTAL SHEETS
497
PROJECT IDENTIFICATION NUMBER
04-78-029-010-03
PROJECT NUMBER
IMN-080-1(366)4--0E-78
R.O.W. PROJECT NUMBER
IMN-029-3(65)54--0E-78

INDEX OF SHEETS

* Color Plan Sheets

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Benjamin N. Dey	Primary Signature Block
B.7	Craig J. Hunter	Roadway
B.11	John A. Christiansen	Geotechnical
C.19	William E. Davidson	Electrical
M.6	Terrence L. Smith	Sanitary Sewer
M.11	Jared L. Olson	Water Main
R.1	Robert L. Stanley	Geotechnical

LICENSED PROFESSIONAL ENGINEER BENJAMIN N DEY 19333 IOWA

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 7/24/15 Date

Benjamin N. Dey
Printed or Typed Name

My license renewal date is December 31, 2016

Pages or sheets covered by this seal: A.1-9, B.1-B.6, C.1-C.12, D.1-D.43, F.1 G.1-G.26, J.1-J.20, T.1-T.13, U.1-U.41, V.1-V.19, W.1-W.139

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POTTAWATTAMIE COUNTY	PROJECT NUMBER IMN-080-1(366)4--0E-78	SHEET NUMBER A.1

STANDARD ROAD PLANS

105-4
10-18-11

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
SW-103	04-21-09	FLEXIBLE GRAVITY PIPE TRENCH BEDDING
SW-104	04-21-09	PRESSURE PIPE TRENCH BEDDING
SW-302	04-21-09	RECTANGULAR SANITARY SEWER MANHOLE
SW-306	04-17-12	CHIMNEY SEALS FOR SANITARY SEWER MANHOLES
SW-601	04-21-15	CASTINGS FOR SANITARY SEWER MANHOLES

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

110-14
4-16-13

LOCATION Station to Station	Side	DIA. (INCHES)	MATERIAL	LENGTH (Lin. Ft.)	DISPOSAL
11+27.39 TO 12+25.58	CL	12	UNKNOWN	98.0	OFF-SITE
21+89.46 TO 23+13.58	CL	12	UNKNOWN	124.0	OFF-SITE
			TOTAL	222.0	
6013+45.46, 142.26' RT. TO 6012+31.60, 0.00 RT.	RT	18	UNKNOWN	184.0	OFF-SITE
6012+31.60, 0.00 LT. TO 6012+21.82, 62.40' LT.	LT	18	UNKNOWN	83.0	OFF-SITE
			TOTAL	267.0	

REMOVAL OF INTAKES AND UTILITY ACCESSES

110-15
4-16-13

NO.	LOCATION/DESCRIPTION	TYPE	REMARKS
1	6013+44.40, 132.31' RT.	SANITARY MANHOLE	
2	6012+31.77, 1.45' RT.	SANITARY MANHOLE	NOT FOUND

SITE A: 8TH STREET/12TH AVENUE SEWER RELOCATIONS
NON-PARTICIPATING

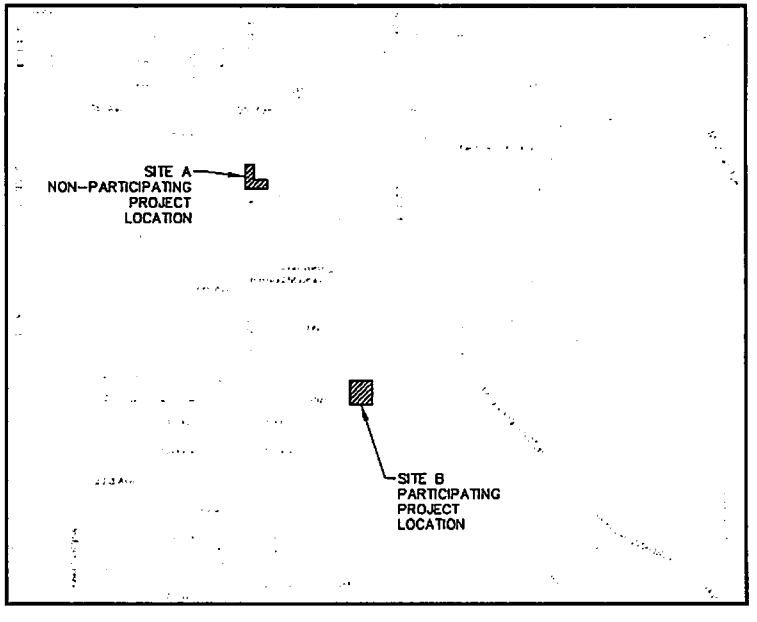
SITE B: 20TH AVENUE SEWER RELOCATION
PARTICIPATING

INTAKES AND UTILITY ACCESSES

104-5A
10-15-13

NO.	LOCATION STATION	TYPE OR STANDARD ROAD PLAN	FORM GRADE ELEV.	BOTTOM WELL ELEV.	EXTENSION LENGTH FT	NOTES
1	6013+44.40, 132.31' RT.	SW-302	979.58	975.73		
2	6013+21.52, 82.94' LT.	SW-302	979.25	978.22		
3	6012+23.00, 72.47' LT.	SW-302	979.45	978.44		

LOCATION MAP - COUNCIL BLUFFS, IOWA



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NO SCALE

INDICATES PROJECT LOCATION

LIST OF SANITARY SEWER PIPE

104-5B
4-21-15

Line Number	Intake/Utility Access No. From	To	Class 'D'	Pipe Diameter Inches	Length of Line Feet	Slope %	Flow Lines Inlet Elevation	Outlet Elevation	Other Elevation	Granular Backfill Tons	Flowable Mortar Cu. Yds.	Pipe Profile Sheet No.	Notes
1	EXISTING	EXISTING		12	98	0.22	975.64	975.42					80 L.F. CASED
2	EXISTING	EXISTING		12	124	0.32	975.89	975.49					84 L.F. CASED
3	EXISTING	MH 1		18	10	0.20	975.73	975.71					
4	MH 1	MH 2		18	217	0.23	976.22	975.73					120 L.F. CASED
5	MH 2	MH 3		18	99	0.22	976.44	976.22					
6	MH 3	EXISTING		18	10	0.20	976.46	976.44					

NOTE:
PARTICIPATING WORK SHALL BE PERFORMED DURING THE (APPROXIMATE) TWO WEEK TIME PERIOD IN WHICH THE BNSF TRACK WILL NO LONGER BE IN SERVICE, BUT BEFORE THE PROPOSED BARTLETT TRACK CONNECTION IS INSTALLED.

NON-PARTICIPATING WORK SHALL BE COORDINATED WITH ROAD CLOSURES AND RAILROAD RELOCATIONS AT THIS LOCATION.

SANITARY SEWER DESIGN

LICENSED PROFESSIONAL ENGINEER — TERRENCE L. SMITH — 13847 — IOWA

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.

TERRENCE L. SMITH — 5/26/15

My license renewal date is December 31, 2015

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M.09-M.10

OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER BRN-080-1(366)4--0E-78	SHEET NO. M.08

S:\Green_Team\Projects\13091415 EBS R3 RELOCATIONS\Engineering\Design\Design\20TH AVE - FOR BID\PLANS\13091415_20TH AVE - FRONT END SHEET.dwg, 5/26/2015 2:43:43 PM, Adobe 11.17 CDLOR.pc3

ESTIMATED PROJECT QUANTITIES

100-1A
07-15-97

Item No.	Item Code	Item	Unit	Estimated Participating	As Built Participating	Estimated Non-Participating	As Built Non-Participating
0010	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	120.0		———	
0020	2435-0130200	MANHOLE, SANITARY SEWER, SW-302	EA	3.0		———	
0030	2504-0114012	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 IN.	LF	———		78.0	
0040	2504-0116018	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	LF	218.0		———	
0050	2504-0130018	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.	LF	120.0		———	
0060	2504-0134012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, PVC, 12 IN.	LF	———		144.0	
0070	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	267.0		222.0	
0080	2507-3250005	ENGINEERING FABRIC	SY	———		80.0	
0090	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EA	2.0		———	
0100	2549-0006320	URETHANE CHIMNEY SEAL	EA	3.0		———	
0110	2552-0000210	TRENCH FOUNDATION	TON	50.0		50.0	
0120	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	CY	100.0		450.0	
0130	2599-9999005	CONNECT SANITARY SEWER PIPE	EA	4.0		———	
0140	2599-9999005	CONNECT TO EXISTING SANITARY SEWER PIPE	EA	———		4.0	
0150	2599-9999010	BYPASS PUMPING	LS	1.0		1.0	

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description

0020 — 2435-0130200

MANHOLE, SANITARY SEWER, SW-302

ALL SANITARY STRUCTURES SHALL CONTAIN AN EPA REGISTERED ANTIMICROBIAL ADDITIVE THAT SHALL RENDER THE CONCRETE UNINHABITABLE FOR BACTERIAL GROWTH.

THE ANTIBACTERIAL ADDITIVE SHALL HAVE SUCCESSFULLY DEMONSTRATED PREVENTION OF MICROBIOLOGICALLY INDUCED CORROSION IN SANITARY SEWERS FOR TEN OR MORE YEARS. THE MIX DESIGN USED SHALL BE APPROVED BY THE MANUFACTURER OF THE ANTIMICROBIAL ADDITIVE TO ASSURE THE COMPATIBILITY WITH ALL OTHER ADMIXTURES, CHEMICALS, AND MINERALS. GRADE RINGS USED IN CONJUNCTION WITH ANTIBACTERIAL ADDITIVE FORTIFIED STRUCTURES SHALL ALSO CONTAIN THE ANTIBACTERIAL ADDITIVE. GROUT FOR FIELD REPAIRS SHALL BE AS RECOMMENDED AND/OR PRODUCED BY THE SAME MANUFACTURER AS THE ANTIBACTERIAL ADDITIVE USED IN THE STRUCTURES.

THE ADDITIVE SHALL BE ADDED INTO THE CONCRETE MIX WATER TO INSURE EVEN DISTRIBUTION OF THE ADDITIVE THROUGHOUT THE CONCRETE MIXTURE. THE AMOUNT TO BE USED SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE ANTIBACTERIAL ADDITIVE. THIS AMOUNT SHALL BE INCLUDED IN THE TOTAL WATER CONTENT OF THE CONCRETE MIX DESIGN. ALL CONCRETE CONTAINING AN ANTIMICROBIAL ADDITIVE SHALL HAVE A COLORANT ADDITIVE ADDED PER MANUFACTURER RECOMMENDATIONS FOR VISUAL VERIFICATION.

ANTIMICROBIAL ADDITIVE WILL NOT BE MEASURED FOR PAYMENT. PAYMENT FOR ANTIBACTERIAL ADDITIVE SHALL BE INCLUDED IN THE UNIT PRICE FOR EACH MANHOLE.

0030 — 2504-0114012

SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 IN.

REFER TO TABULATION ON SHEET M.06.
SHALL BE SOLID WALL PVC PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE.
BEDDING CLASS F-3 OF THE STANDARD ROAD PLAN SW-103 SHALL BE USED.

BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

OR 3/4" CLASS A IDOT GRADATION #11.

0040 — 2504-0116018

SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.

REFER TO TABULATION ON SHEET M.06.
PIPE SHALL HAVE CERAMIC EPOXY LINING.
BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.

BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

OR 3/4" CLASS A IDOT GRADATION #11.

0050 — 2504-0130018

SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.

REFER TO TABULATION ON SHEET M.06.
CARRIER PIPE SHALL BE HDPE DUCTILE IRON PIPE SIZE (DIPS) DR-32.5. ANNULAR SPACE BETWEEN THE CARRIER AND CASING PIPE SHALL BE FILLED WITH FLOWABLE MORTAR OR CLSM.
HDPE PIPE SHALL MEET AWWA C901/C906, ASTM D2239, ASTM D2737, ASTM D3035, ASTM F714, CELL CLASS PER ASTM D3350, PPI LISTED MATERIAL PE 3408/3608/4710, AND ANSI/NSF-14.
BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.

BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

OR 3/4" CLASS A IDOT GRADATION #11.

STEEL CASING MEETING THE REQUIREMENTS OF ARTICLE 2553.02, WITH A 24" CASING DIAMETER AND 0.688" THICKNESS, SHALL BE USED.

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description

0060 — 2504-0134012

SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, PVC, 12 IN.

REFER TO TABULATION ON SHEET M.06.
SHALL BE SOLID WALL PVC PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE.
BEDDING CLASS F-3 OF THE STANDARD ROAD PLAN SW-103 SHALL BE USED.

BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

OR 3/4" CLASS A IDOT GRADATION #11.

STEEL CASING MEETING THE REQUIREMENTS OF ARTICLE 2553.02, WITH A MINIMUM 20" CASING DIAMETER AND 0.344" THICKNESS, SHALL BE USED.

0080 — 2507-3250005

ENGINEERING FABRIC

ENGINEERING FABRIC SHALL BE USED AT THE DIRECTION OF THE ENGINEER AT THE TRENCH BOTTOM BELOW THE TRENCH FOUNDATION (ITEM 0050) AND MEET STANDARD SPECIFICATIONS ARTICLE 4196.01B2 FOR SUBSURFACE DRAINAGE AND IM 496.01 AND APPENDIX B.

MEASUREMENT AND PAYMENT SHALL BE PER SQUARE YARD. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

0110 — 2552-0000210

TRENCH FOUNDATION

BID ITEM INCLUDED TO BE USED TO ACHIEVE A STABLE TRENCH BOTTOM WHERE DIRECTED BY THE ENGINEER. IDOT GRADATION NO. 13 MAY BE USED IN LIEU OF THE SPECIFIED MATERIAL.

0120 — 2552-0000220

REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL

BID ITEM INCLUDED TO BE USED IN LOCATIONS WHERE EXCAVATED PIPE TRENCH MATERIAL IS FOUND UNSUITABLE BY THE ENGINEER.

0130 — 2599-9999005

CONNECT SANITARY SEWER PIPE

ALL CONNECTIONS SHALL BE MADE WITH A FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BANDS. THE FLEXIBLE COUPLING SHALL CONFORM TO ASTM D5926, C1173 AND CSA B602. THE CONNECTION AT STA. 6012+21.62, 62.40' LT. IS TO EXISTING UNKNOWN MATERIAL.

MEASUREMENT AND PAYMENT SHALL BE FOR EACH CONNECTION MADE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

0140 — 2599-9999005

CONNECT TO EXISTING SANITARY SEWER PIPE

PVC TO PVC CONNECTIONS SHALL BE MADE AT EXISTING JOINT LOCATIONS AS SHOWN ON THE PLANS. THE CONNECTION AT STA. 12+25.58 IS TO EXISTING VCP. CONNECTION TO EXISTING VCP SHALL BE MADE WITH A FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BANDS. THE FLEXIBLE COUPLING SHALL CONFORM TO ASTM D5926, C1173 AND CSA B602.

MEASUREMENT AND PAYMENT SHALL BE FOR EACH CONNECTION MADE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

0150 — 2599-9999010

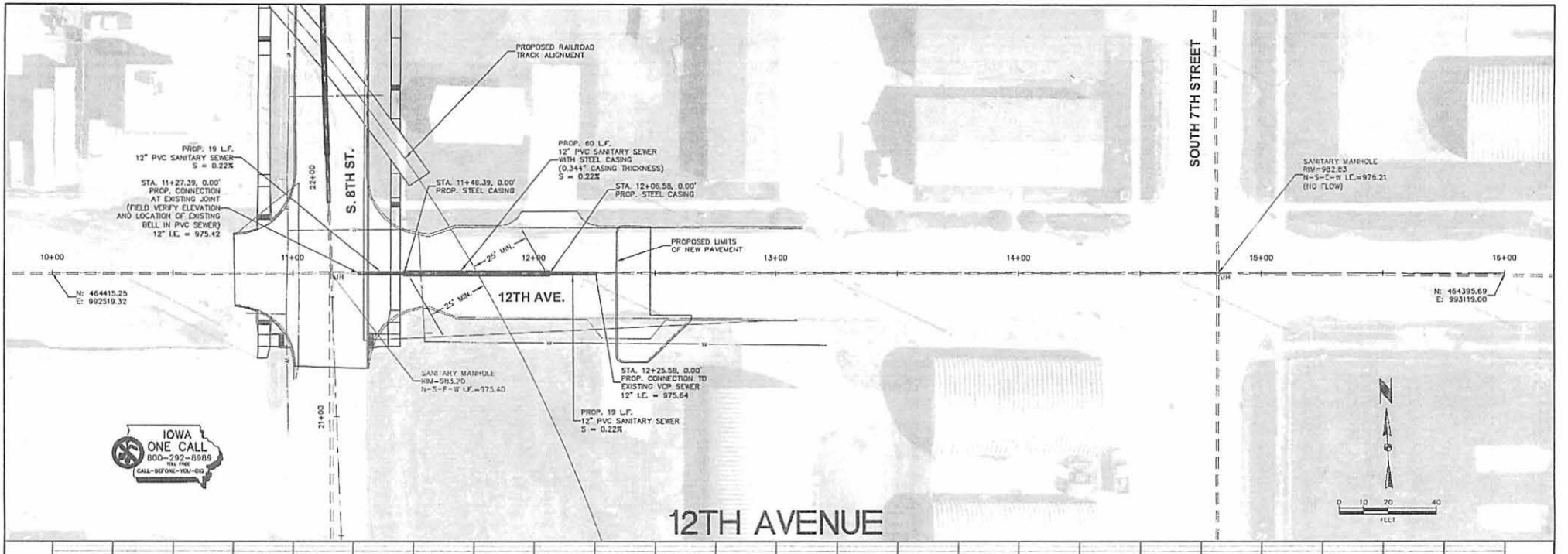
BYPASS PUMPING

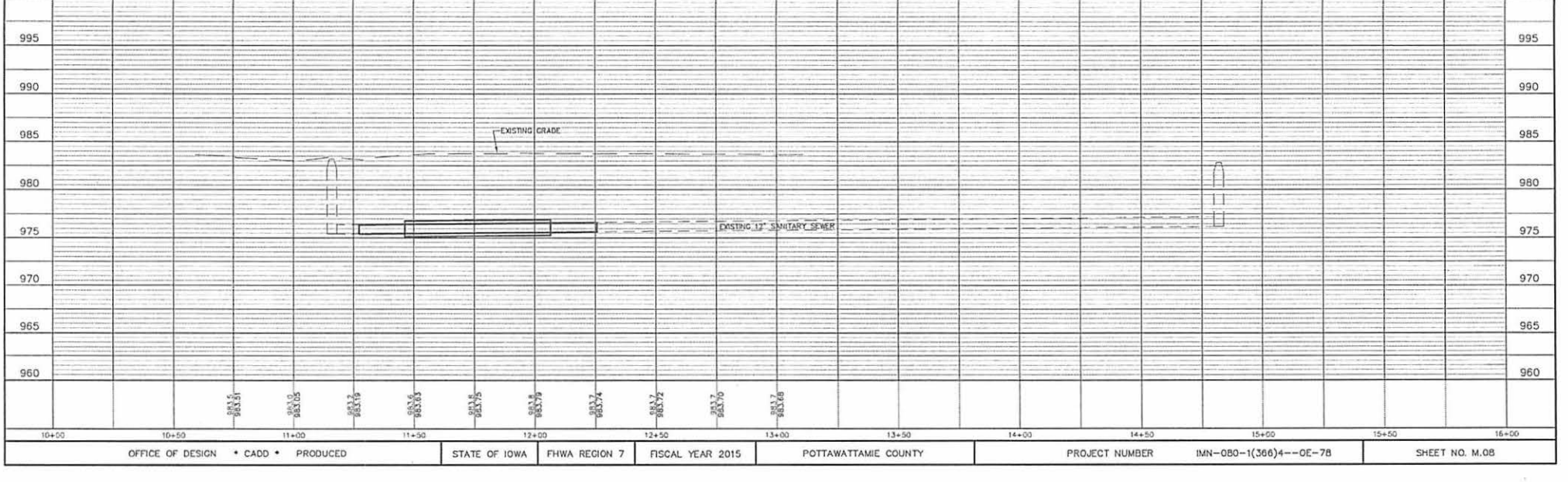
ITEM INCLUDED FOR ALL BYPASS PUMPING REQUIRED FOR INSTALLING THE NEW SANITARY SEWER MAIN.

BYPASS PUMPING OPERATIONS SHALL BE CONDUCTED FROM EXISTING MANHOLE LOCATIONS. NO PERMANENT PIPE SHALL BE CUT FOR USE IN BYPASS FLOW PICKUP OR DISCHARGE.

ANY TEMPORARY MODIFICATIONS AND REPLACEMENT OF EXISTING MANHOLE TOPS AND CASTINGS SHALL BE INCIDENTAL TO THIS ITEM.

MEASUREMENT AND PAYMENT SHALL BE AT THE CONTRACT LUMP SUM PRICE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.





OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER IMN-080-1(366)4--0E-78	SHEET NO. M.08

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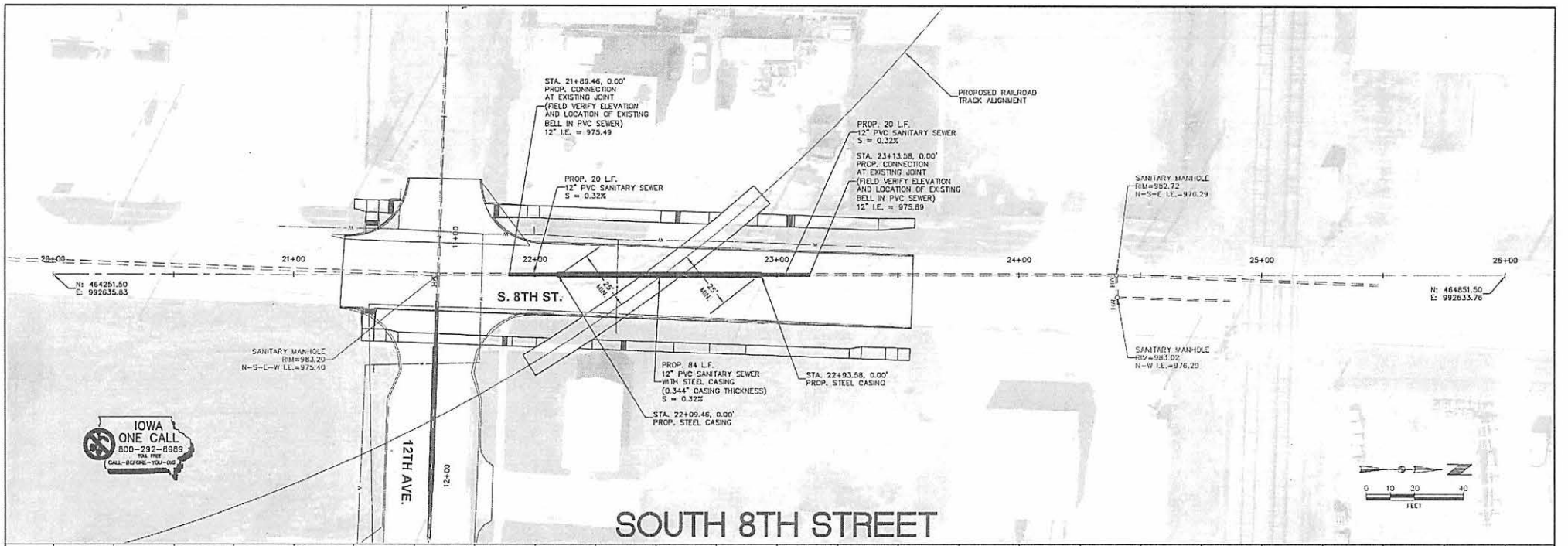
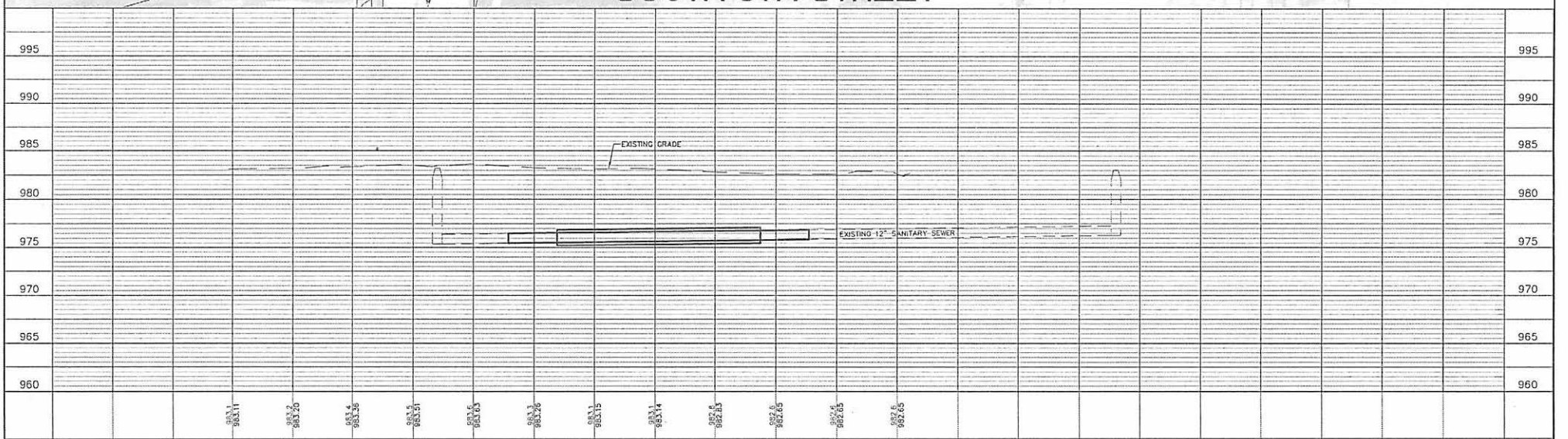


SOUTH 8TH STREET



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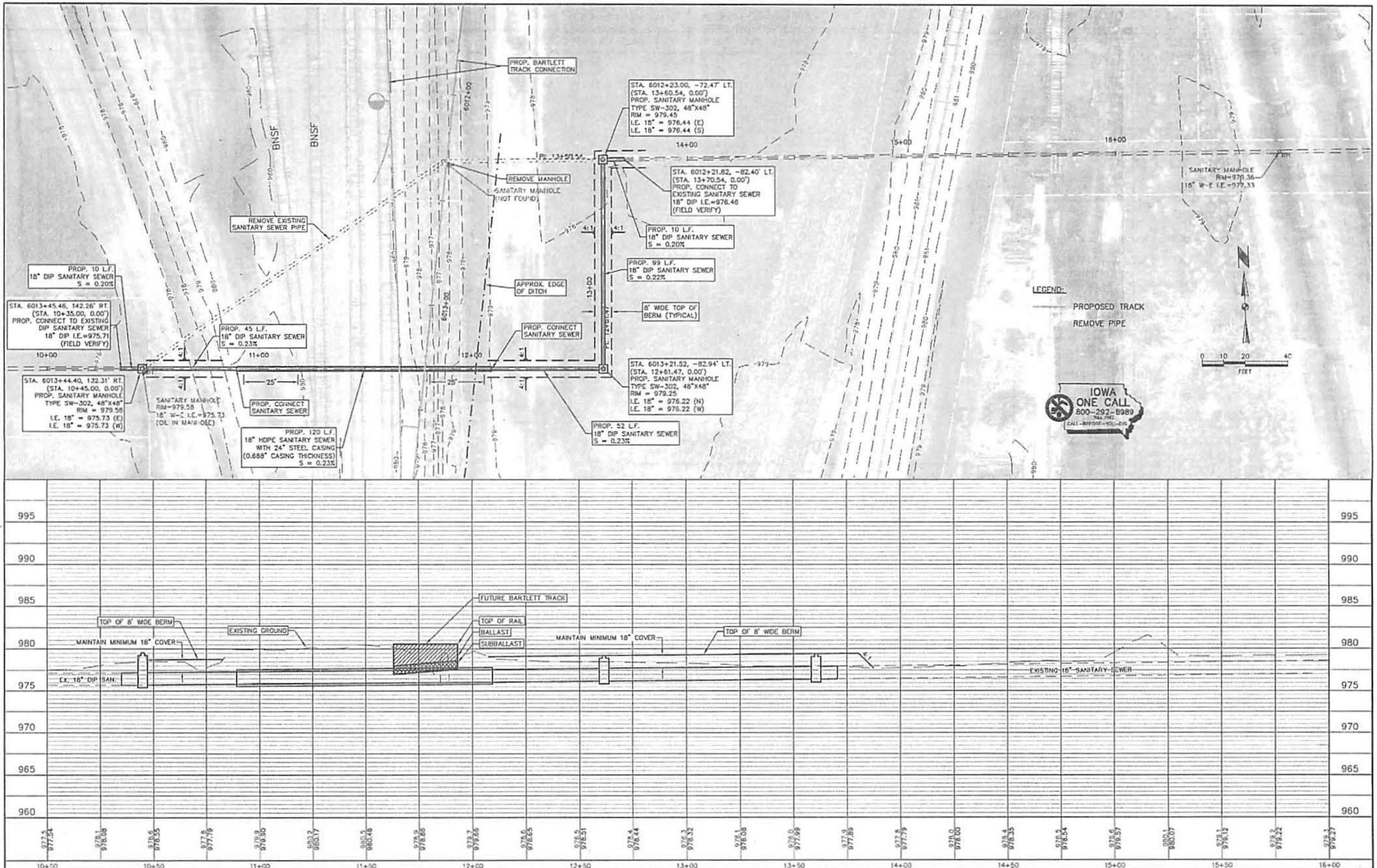


OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER	IMN-080-1(366)4--0E-78	SHEET NO. M.10

ESTIMATED PROJECT QUANTITIES

100-1A
07-15-97

Item No.	Item Code	Item	Unit	Estimated	As Built
DIVISION 5: WATER MAIN					
0010	2552-0000210	TRENCHED FOUNDATION	TON	40.0	
0020	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	CY	80.0	
0030	2554-0112006	WATER MAIN, TRENCHED DUCTILE IRON PIPE (D.I.P.), 6"	LF	50.0	
0040	2554-0122008	WATER MAIN, TRENCHLESS DUCTILE IRON PIPE (D.I.P.), 8"	LF	30.0	
0050	2554-0142008	WATER MAIN, WITH 20" CASING PIPE, TRENCHED (D.I.P.), 8"	LF	137.0	
0060	2554-0202200	FITTING BY COUNT, MECHANICAL JOINT TEE (D.I.P.), 8"X8"X8"	EA	1.0	
0070	2554-0202200	FITTING BY COUNT, MECHANICAL JOINT (D.I.P.) 8" 45° BEND	EA	4.0	
0080	2554-0202200	FITTING BY COUNT, MECHANICAL JOINT (D.I.P.) 8"X6" REDUCER	EA	1.0	
0090	2554-0202200	FITTING BY COUNT, SLEEVE 8" STANDARD SIZE (D.I.P.)	EA	7.0	
0100	2554-0202200	FITTING BY COUNT, SLEEVE 6" STANDARD SIZE (D.I.P.)	EA	2.0	
0110	2554-0202200	FITTING BY COUNT, PLUG 6" (D.I.P.)	EA	1.0	
0111	2554-0207008	GATE VALVE AND VALVE BOX 8"	EA	2.0	
0130	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	1.0	
0140	2599-99999005	TRENCHLESS WATER MAIN SETUP	EA	1.0	
0150	2599-99999005	CUT AND CONNECT TO EXISTING 8" WATER MAIN	EA	4.0	
0160	2599-99999005	CUT AND CONNECT TO EXISTING 6" WATER MAIN	EA	1.0	
0170	2599-99999005	CUT AND PLUG EXISTING 8" WATER MAIN	EA	1.0	
0180	2599-99999005	CUT AND PLUG EXISTING 6" WATER MAIN	EA	1.0	

LIST OF WATER MAIN DUCTILE IRON PIPE, (D.I.P.)

HQM 1
5-7-15

Line Number	Water Main Station to Station: From	To	Pipe Diameter (inches)	Length of Line (Feet)	Notes
1	STA. 12+22, 29' RT.	STA. 12+30, 29' RT	8	8	
2	STA. 11+41, 29' RT.	STA. 11+62, 29' LT	8	21	
3	STA. 10+98, 29' LT.	STA. 11+11, 29' RT.	8	13	
4	STA. 22+28, 15' LT.	STA. 22+31, 15' LT.	8	3	
5	STA. 23+08, 13' LT.	STA. 23+13, 13' LT.	8	5	

WATER MAIN, TRENCHLESS (D.I.P.)

HQM 6
5-7-15

Location: Station to Station	Dia. (inches)	Material	Length (Lin. Ft.)
STA. 11+11, 29' RT. TO STA 11+41, 29' RT.	8	DUCTILE IRON	30
		TOTAL	30

LIST OF FITTINGS

HQM 2
5-7-15

Line Number	M.J. Fitting Sta. Location	M.J. Fitting Type	Fitting Diameter (inches)	Notes
1	STA. 10+98, 18' LT.	PLUG	6	
2	STA. 10+98, 18' LT.	SLEEVE	6	
3	STA. 10+98, 29' RT.	SLEEVE	8	
4	STA. 10+98, 29' RT.	SLEEVE	8	
5	STA. 10+98, 29' RT.	TEE	8X8X8	
6	STA. 11+03, 29' RT.	45° BEND	8	
7	STA. 11+08, 29' RT.	45° BEND	8	
8	STA. 11+46, 29' RT.	45° BEND	8	
9	STA. 11+51, 29' RT.	45° BEND	8	
10	STA. 12+30, 29' RT.	SLEEVE	8	
11	STA. 12+30, 29' RT.	REDUCER	8X6	
12	STA. 22+04, 17' LT.	SLEEVE	8	
13	STA. 22+04, 17' LT.	SLEEVE	8	
14	STA. 22+28, 15' LT.	SLEEVE	8	
15	STA. 22+28, 15' LT.	SLEEVE	8	
16	STA. 23+13, 13' LT.	SLEEVE	8	

CUT AND PLUG EXISTING WATER MAIN

HQM 7
5-7-15

Line Number	Cut / Connect Sta. Location	Pipe Diameter (inches)	Notes
1	STA. 10+98, 18' LT.	8	CBWW PRESENT DURING OPERATION
2	STA. 10+98, 41' LT.	8	CBWW PRESENT DURING OPERATION

WATER MAIN W/ 20 IN. CASING PIPE TRENCHED (D.I.P.), 8 IN. 0.34375 IN. MIN. THICKNESS

HQM 7
5-7-15

Line Number	Station to Station	Pipe Diameter (inches)	Length (Lin. Ft.)	Notes
1	STA. 11+62, 29' RT. TO STA. 12+22, 29' RT.	8	60.0	
2	STA. 22+31, 15' LT. TO STA. 23+08, 13' LT.	8	77.0	

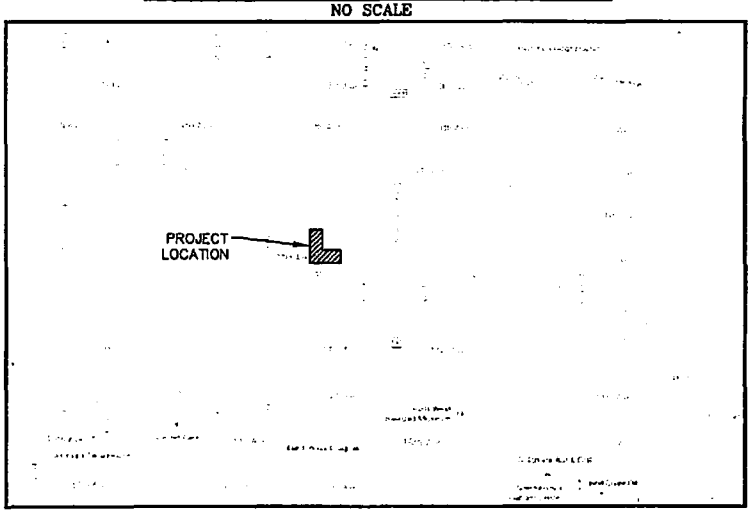
LOCATION OF GATE VALVE

HQM 4
5-7-15

Line Number	M.J. Gate Valve Sta. Location	Gate Valve Size (inches)	Notes
1	STA. 12+30, 29' RT.	8	
2	STA. 23+13, 13' LT.	8	

LOCATION MAP - COUNCIL BLUFFS, IOWA

NO SCALE



INDICATES PROJECT LOCATION

WATER MAIN ABANDONMENT

HQM 5
5-7-15

Location: Station to Station	Dia. (inches)	Material	Length (Lin. Ft.)	Disposal
STA. 11+50, 29' RT. TO STA 12+30, 29' RT.	6	DUCTILE	75	OFF-SITE
STA. 22+31, 29' RT. TO STA 23+19, 29' RT.	6	DUCTILE	80	OFF-SITE

CUT AND CONNECT TO EXISTING WATER MAIN

HQM 3
5-7-15

Line Number	Cut / Connect Sta. Location	Pipe Diameter (inches)	Notes
1	STA. 10+98, 29' RT.	8	CBWW PRESENT DURING OPERATION
2	STA. 12+30, 29' RT.	8	CBWW PRESENT DURING OPERATION
3	STA. 22+04, 17' LT.	8	CBWW PRESENT DURING OPERATION
4	STA. 22+28, 15' LT.	8	CBWW PRESENT DURING OPERATION
5	STA. 23+13, 13' LT.	8	CBWW PRESENT DURING OPERATION

WATER MAIN DESIGN

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.

JARED L. OLSON 19952 IOWA — LICENSED PROFESSIONAL ENGINEER

Jared L. Olson — 7-2-2015

JARED L. OLSON — DATE

My license renewal date is December 31, 2015 .

Pages or sheets covered by this seal:
M.9-M.13

OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER BRN-080-1(366)4--0E-78	SHEET NO. M.11

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description
DIVISION 5: WATER MAIN		
0010	2552-0000210	TRENCHED FOUNDATION BID ITEM SHALL NOT BE USED WITHOUT AUTHORIZATION FROM THE WATER WORKS. MEASUREMENT AND PAYMENT WILL BE IN TONS AS DIRECTED BY THE ENGINEER. MEASUREMENT WILL BE BASED ON ACTUAL SCALE TICKETS OF INDIVIDUAL LOADS THAT SHALL BE DELIVERED TO THE WATER WORKS OBSERVER/FIELD REPRESENTATIVE WITHIN 24 HOURS OF DELIVERY/PLACEMENT OF MATERIAL. LOAD COUNTS OR SCALE TICKETS OF INDIVIDUAL LOADS RECEIVED BY THE WATER WORKS OBSERVER/FIELD REPRESENTATIVE AFTER THE 24-HOUR PERIOD SHALL NOT BE INCLUDED FOR PAYMENT.
0020	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL BID ITEM SHALL BE USED IN LOCATIONS WHERE EXCAVATED PIPE TRENCH MATERIAL IS FOUND TO BE UNSUITABLE BY THE ENGINEER. DISPOSAL OF THE UNSUITABLE TRENCH MATERIAL SHALL BE INCIDENTAL TO THIS ITEM. MEASUREMENT AND PAYMENT SHALL BE BY THE UNIT BID PRICE PER CUBIC YARD MEASURED BY THE CONTRACTING AUTHORITY'S REPRESENTATIVE.
0030	2554-0112008	WATER MAIN, TRENCHED DUCTILE IRON PIPE (D.I.P.) 8" CONTRACT UNIT PRICE PER LF SHALL INCLUDE ALL COSTS TO SUPPLY AND INSTALL POLYETHYLENE ENCASEMENT, NITRILE GASKETS, TRACING WIRE, AND TRACING WIRE TERMINAL BOXES AT EACH MAINLINE VALVE AND/OR FIRE HYDRANT (ONE PER CLUSTER OF VALVES). MEASUREMENT AND PAYMENT SHALL BE MADE PER LINEAR FEET OF PIPE IN PLACE, COMPLETED AND APPROVED MEASURED ALONG THE CENTERLINE OF THE PIPE. FITTINGS AND VALVES SHALL BE INCLUDED IN THE FOOTAGE AS TYPICAL PIPE SECTIONS IN THE LINE BEND MEASURED. PIPE INSIDE A CASING WILL BE PAID FOR SEPARATELY. ALL PIPE INSTALLATION AND TESTING SHALL COMPLY WITH AWWA STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL ALLOW THE CBWW OBSERVER TO VISUALLY OBSERVER ALL WATER MAIN AND FITTINGS PRIOR TO BACKFILLING. CBWW WILL PROVIDE TAPS FOR PURIFICATION AND WILL TAKE TESTING SAMPLES. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR FOR SAMPLING. CONTRACTOR SHALL COORDINATE ALL PURIFICATION AND FLUSHING OF THE MAIN WITH CBWW. THE CONTRACTOR SHALL NOTIFY BRIAN CADY (WATER WORKS AT (712) 328-1006, EXT 1039) FOR ALL COORDINATION.
0040	2554-0122008	WATER MAIN, TRENCHLESS DUCTILE IRON PIPE (D.I.P.) 8" CONTRACT UNIT PRICE PER LF SHALL INCLUDE ALL COSTS TO SUPPLY AND INSTALL POLYETHYLENE ENCASEMENT, NITRILE GASKETS, TRACING WIRE, AND TRACING WIRE TERMINAL BOXES AT EACH MAINLINE VALVE AND/OR FIRE HYDRANT (ONE PER CLUSTER OF VALVES). MEASUREMENT AND PAYMENT SHALL BE MADE PER LINEAR FEET OF PIPE IN PLACE, COMPLETED AND APPROVED MEASURED ALONG THE CENTERLINE OF THE PIPE. FITTINGS AND VALVES SHALL BE INCLUDED IN THE FOOTAGE AS TYPICAL PIPE SECTIONS IN THE LINE BEND MEASURED. PIPE INSIDE A CASING WILL BE PAID FOR SEPARATELY.
0050	2554-0142008	WATER MAIN, WITH 20" CASING PIPE, THICKNESS 0.34375", TRENCHED (D.I.P.), 8" CASINGS SHALL BE ASTM A-53, GRADE B, STEEL, WALL THICKNESS SIZE AND LENGTH AS INDICATED ON THE PLANS. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CERTIFICATION OF MATERIAL USING A SHOP DRAWING TRANSMITTAL FORM. ENDS OF CASING PIPE SHALL BE SEALED USING 1/8" THICK SYNTHETIC RUBBER SEALS WITH STAINLESS STEEL CLAMPS, MODELS ESW AND ESC AS MANUFACTURED BY CCI PIPE LINE SYSTEMS. "ENDSEALS" AS MANUFACTURED BY POWER SEAL PIPE LINE PRODUCTS, CORPORATION; MODEL BWW ES AS MANUFACTURED BY THE BWW COMPANY; MODEL AW AS MANUFACTURED BY ADVANCED PRODUCTS & SYSTEMS, INC; OR APPROVED EQUAL. CASING CHOCKS, MODEL CSS AS MANUFACTURED BY CCI PIPELINE SYSTEMS MODEL 481D AS MANUFACTURED BY POWER SEAL PIPELINE PRODUCTS CORPORATION; MODEL BWW-SS AS MANUFACTURED BY THE BWW COMPANY; OR APPROVED EQUAL SHALL BE PLACED AROUND THE WATER MAIN PIPE TO ENSURE APPROXIMATE CENTERING WITHIN THE CARRIER PIPE AND TO PREVENT DAMAGE DURING INSTALLATION AND SHALL NOT CREATE A DIELECTRIC CELL. CHOCKS SHALL BE TYPE 304 STAINLESS STEEL WITH ELASTOMETRIC PVC LINER PER ASTM D149. CHOCKS SHALL BE CENTER RESTRAINED. INSTALLATION SHALL CONFORM TO THE LATEST EDITION AWWA C-600 AND MANUFACTURER'S RECOMMENDATIONS. MEASUREMENT AND PAYMENT SHALL BE MADE PER LINEAR FEET OF CASING AND WATER MAIN IN PLACE, COMPLETED AND APPROVED. THE REQUIRED CASING CHOCKS AND CASING END SEAL SHALL BE INCLUDED.
0060	2554-0202200	FITTING BY COUNT, MECHANICAL JOINT TEE (D.I.P.) 8"X8"X8" CONTRACT UNIT PRICES SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING MECHANICAL JOINT TEES AND RETAINER GLANDS. RETAINER GLANDS SHALL BE SET SCREWS SHALL BE THE FORD METER BOX COMPANY, INC. AUTO-TORK SCREWS, STAR PIPE PRODUCTS STARGRIP SERIES 3000 MECHANICAL JOINT WEDGE ACTION RESTRAINT WITH BREAK-OFF TORQUE CONTROL NUTS, SIGMA ONE-LOK WEDGE ACTION RESTRAINING GLAND OR APPROVAL EQUAL. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED TEE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ESTIMATE REFERENCE INFORMATION

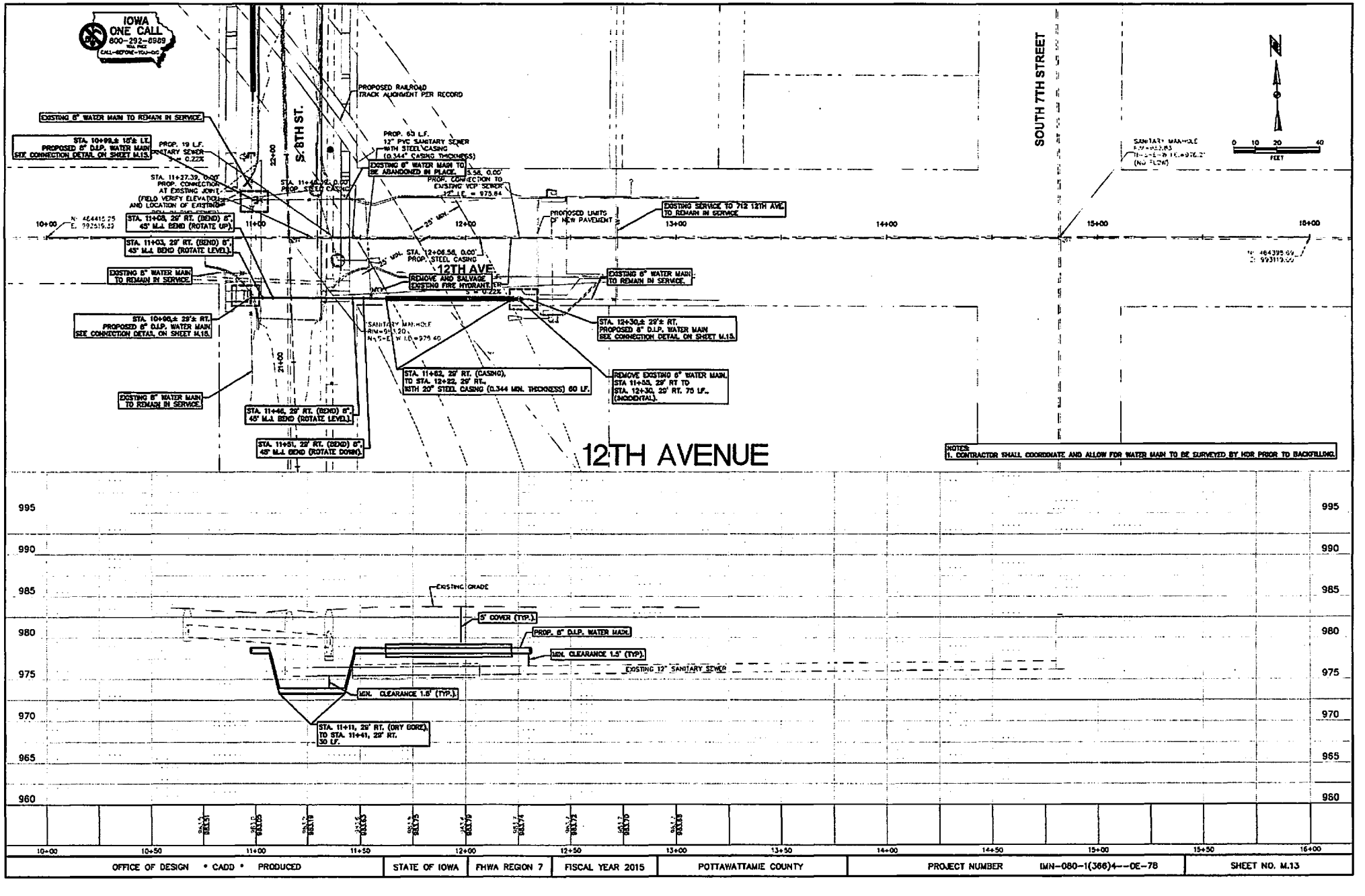
100-4A
10-29-02

Item No.	Item Code	Description
DIVISION 5: WATER MAIN		
0070	2544-0202200	FITTING BY COUNT, MECHANICAL JOINT (D.I.P.) 8" 45° BEND CONTRACT UNIT PRICES SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING MECHANICAL JOINT BENDS AND RETAINER GLANDS. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED BEND. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.
0080	2599-9999005	FITTING BY COUNT MECHANICAL JOINT (D.I.P.) 8"X6" REDUCER CONTRACT UNIT PRICES SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING PLUGS AND RETAINER GLANDS. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED PLUG. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.
0090	2544-0202200	FITTINGS BY COUNT, SLEEVE 8" STANDARD SIZE (D.I.P.) CONTRACT UNIT PRICE SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING SLEEVES AND RETAINER GLANDS. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED SLEEVE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.
0100	2544-0202200	FITTINGS BY COUNT, SLEEVE 6" STANDARD SIZE (D.I.P.) CONTRACT UNIT PRICE SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING SLEEVES AND RETAINER GLANDS. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED SLEEVE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.
0110	2554-0202200	FITTINGS BY COUNT, PLUGS 6" (D.I.P.) CONTRACT UNIT PRICES SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING PLUGS. MEASUREMENT AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED PLUG. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.
0120	2554-0207008	GATE VALVE AND VALVE BOX 8", MECHANICAL JOINT CONTRACT UNIT PRICES SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR FURNISHING AND INSTALLING VALVES, VALVE BOXES AND RETAINER GLANDS. ALL GATE VALVES SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C-509 OR C-515 AND HAVE DUCTILE IRON BODY AND BONNET WITH STAINLESS STEEL BOLTS. GATE VALVES SHALL BE RESILIENT-SEATED OR RESILIENT WEDGE, MANUFACTURED IN ACCORDANCE WITH AWWA C-509 OR C-515 WITH NONRISING STEM "O" RIGHT STEM SEAL, 2" SQUARE OPERATION NUT, BRONZE MOUNTED AND OPENING COUNTER-CLOCKWISE (LEFT). VALVES SHALL BE: 1). MUELLER A-2362-20 (VALVE SIZES 2" THROUGH 12";AWWA C-509). 2). MUELLER A-2361-20 (VALVE SIZES 2" THROUGH 48"; AWWA C-515). 3). CLOW MODEL NO. 2639; FIGURE F-6100. 4). AMERICAN FLOW CONTROL SERIES 2500. 5). U.S. PIPE A-USPI-20 OR A-USPI-20. 6). M&H VALVE COMPANY STYLE 7000 (VALVE SIZES 4" THROUGH 12": AWWA C-515); STYLE 4067 (VALVE SIZES 14" AND 16"). 7). AMERICAN AVK SERIES 45 (AWWA C-515); SERIES (AWWA C-509). 8). OR EQUAL PRE-APPROVED BY THE WATER WORKS. VALVE BOXES SHALL BE: 1). TYLER SERIES 6860, 29U-DOMESTIC HEAVY DUTY OR 30U-NON-DOMESTIC HEAVY DUTY, STAR MODEL VB-0008 (HEAVY DUTY) VALVE BOX, OR EQUAL APPROVED BY THE WATER WORKS. 2). CAST IRON , SCREW TYPE: WITH CAST IRON DROP COVER 3). INSIDE DIAMETER: 5-1/4". 4). LID SHALL BE LABELED "WATER" WITH RAISED LETTERING. 5). A #6 (STANDARD) SEPARATE FULL POT BASE SHALL BE USED. 6). BOTTOM SECTION SHALL BE 24" OR 18": TOP SECTION SHALL BE 26" OR 18": MIDDLE SECTION IF REQUIRED SHALL BE 24", 36" BOTTOM SECTIONS SHALL NEVER BE USED. FIELD CUTTING OR MODIFICATIONS TO THE VALVE BOX SECTIONS SHALL NOT BE PERMITTED. CONTRACT UNIT PRICE SHALL INCLUDE ALL COSTS FOR THE CONTRACTOR ADJUSTING TOPS AND NEW VALVE BOXES TO FINISH GRADE IN PAVED AND NON-PAVED AREA. MEASUREMENTS AND PAYMENT SHALL BE MADE FOR EACH PROPERLY INSTALLED GATE VALVE AND VALVE BOX. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ESTIMATE REFERENCE INFORMATION

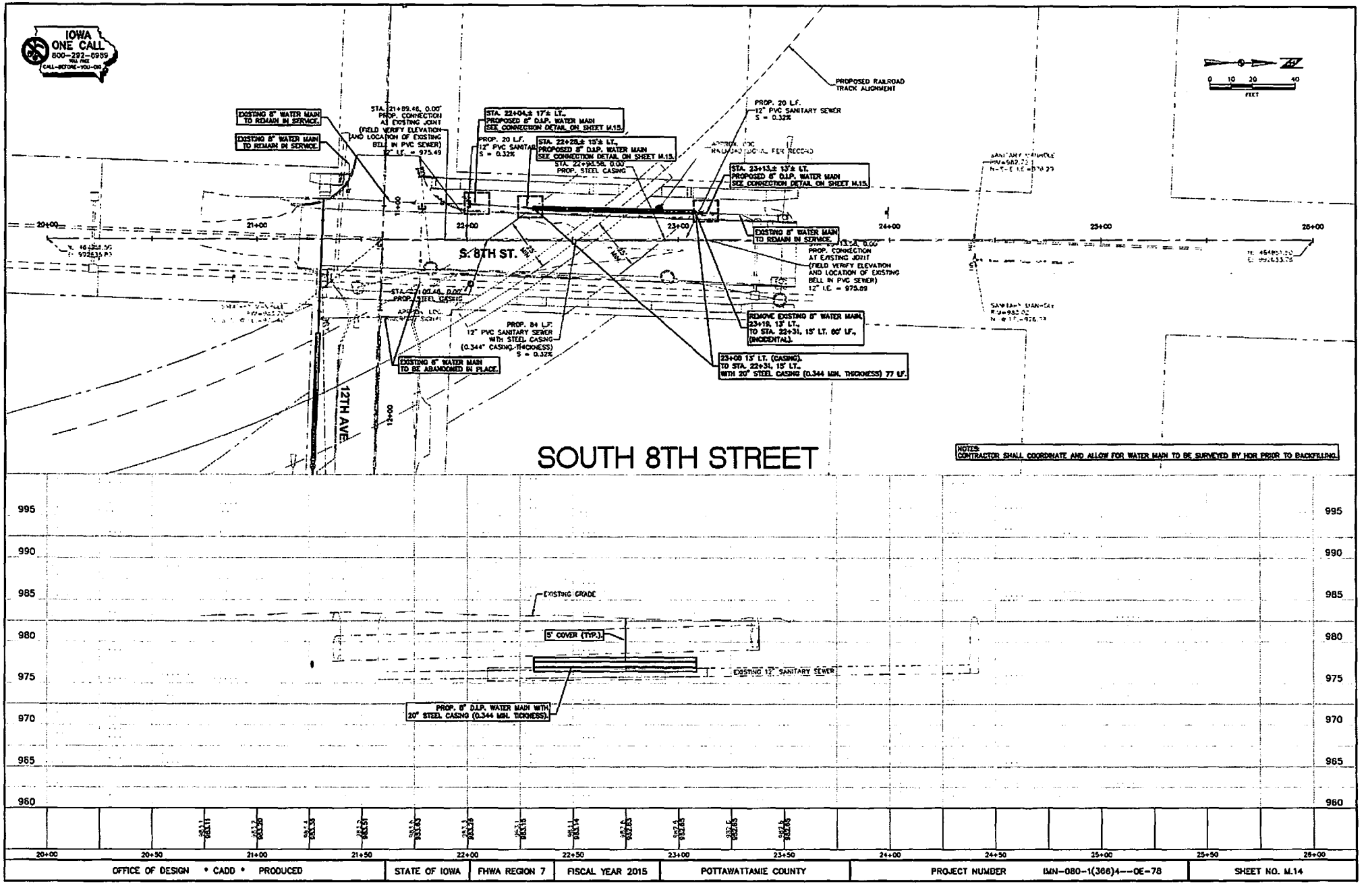
100-4A
10-29-02

Item No.	Item Code	Description
DIVISION 5: WATER MAIN		
0130	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS CONTRACTOR SHALL DO THE NECESSARY EXCAVATION AND SUBSEQUENT BACKFILLING TO REMOVE THE FIRE HYDRANT AS NOTED ON THE PLANS. CONTRACTOR SHALL CUT THE WATER MAIN AND/OR HYDRANT BRANCH PIPE BEYOND THE HYDRANT CONNECTION AS DIRECTED BY THE WATER WORKS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE EXISTING FIRE HYDRANTS IF THEY ARE DAMAGED DURING THE SALVAGE WORK. CONTRACTOR SHALL FURNISH AND INSTALL A CONCRETE PLUG IN THE EXPOSED PIPE PRIOR TO BACKFILLING CONTRACTOR SHALL DELIVER THE SALVAGED MATERIAL TO FRANK AT THE WATER WORKS DISTRIBUTION OFFICE AT 2000 NORTH 25TH STREET AND UNLOAD THE SALVAGED ITEMS AS DIRECTED. PAYMENT SHALL BE MADE AFTER THE SALVAGED HYDRANT AND OTHER APPURTENANCES ARE DELIVERED. IF A SALVAGED HYDRANT IS NOT DELIVERED, THE WATER WORKS RESERVES THE RIGHT TO DEDUCT THE HYDRANT AND OTHER APPURTENANCES VALUE FROM THE CONTRACT PAYMENT.
0140	2599-9999005	TRENCHLESS WATER MAIN SETUP CONTRACT UNIT PRICE SHALL INCLUDE ALL COSTS FOR SETUP, SITE PREPARATION AND MAINTENANCE THROUGHOUT THE TRENCHLESS INSTALLATION. PAYMENT SHALL BE MADE FOR EACH LOCATION CALLED FOR IN THE PLANS. IF TWO SEPARATE BORES ARE EXTENDED AND JOINED TOGETHER IN THE FIELD, ONLY ONE SET UP ITEM WILL BE PAID. ADDITIONAL SETUPS WILL BE AT THE CONTRACTORS EXPENSE. ITEM SHALL BE PAID FOR UNSUCCESSFUL TRENCHLESS BORE ATTEMPT DUE TO UNEXPECTED DEBRIS OR OTHER OBSTRUCTIONS IN THE BORE PATH. ONLY TWO (2) UNSUCCESSFUL ATTEMPTS WILL BE PAID AT A SETUP LOCATION. ITEM WILL NOT BE PAID FOR A BORE ATTEMPT THAT NEEDS TO BE REDONE DUE TO MISALIGNMENT BY CONTRACTOR.
0150	2599-9999005	CUT AND CONNECT TO EXISTING 8" WATER MAIN CONTRACT UNIT PRICE PER EA SHALL BE FULL COMPENSATION FOR ALL MATERIAL AND LABOR REQUIRED TO CONNECT THE NEW WATER MAIN FITTINGS TO THE EXISTING 6" OR 8" CAST IRON (C.I.) OR DUCTILE IRON (D.I.P.) WATER MAIN. THIS WORK SHALL ONLY BE PERFORMED WITH WATER WORKS PERSONNEL PRESENT. CONTRACT UNIT PRICE SHALL BE FULL COMPENSATION FOR LOCATING, EXPOSING, CLEANING, AND ALL DAMAGE CAUSED TO EXISTING WATER MAIN, COORDINATION OF WATER SERVICE INTERRUPTION WITH CITY PERSONAL AND ALL MATERIALS AND LABOR REQUIRE TO CONNECT TO THE EXISTING WATER MAIN.
0160	2599-9999005	CUT AND CONNECT TO EXISTING 6" WATER MAIN CONTRACT UNIT PRICE PER EA SHALL BE FULL COMPENSATION FOR ALL MATERIAL AND LABOR REQUIRED TO CONNECT THE NEW WATER MAIN FITTINGS TO THE EXISTING 6" OR 8" CAST IRON (C.I.) OR DUCTILE IRON (D.I.P.) WATER MAIN. THIS WORK SHALL ONLY BE PERFORMED WITH WATER WORKS PERSONNEL PRESENT. CONTRACT UNIT PRICE SHALL BE FULL COMPENSATION FOR, LOCATING, EXPOSING, CLEANING, AND ALL DAMAGE CAUSED TO EXISTING WATER MAIN, COORDINATION OF WATER SERVICE INTERRUPTION WITH CITY PERSONAL AND ALL MATERIALS AND LABOR REQUIRED TO CONNECT TO THE EXISTING WATER MAIN.
0170	2599-9999005	CUT AND PLUG EXISTING 8" WATER MAIN CONTRACT UNIT PRICE PER EA SHALL BE FULL COMPENSATION FOR ALL MATERIAL AND LABOR REQUIRED TO CUT AND PLUG THE NEW WATER MAIN. THIS WORK SHALL ONLY BE PERFORMED WITH WATER WORKS PERSONNEL PRESENT. CONTRACT UNIT PRICE SHALL BE FULL COMPENSATION FOR LOCATING, EXPOSING, CLEANING, AND CUTTING THE EXISTING WATER MAIN, REPAIRING ANY AND ALL DAMAGE CAUSED TO EXISTING WATER MAIN, COORDINATION OF WATER SERVICE INTERRUPTION WITH CITY PERSONAL AND ALL MATERIALS AND LABOR REQUIRED TO CONNECT TO THE EXISTING WATER MAIN. EACH CONNECTION TO AN EXISTING 8" WATER MAIN SHALL BE COUNTED FOR PAYMENT.
0180	2599-9999005	CUT AND PLUG EXISTING 6" WATER MAIN CONTRACT UNIT PRICE PER EA SHALL BE FULL COMPENSATION FOR ALL MATERIAL AND LABOR REQUIRED TO CUT AND PLUG THE NEW WATER MAIN. THIS WORK SHALL ONLY BE PERFORMED WITH WATER WORKS PERSONNEL PRESENT. CONTRACT UNIT PRICE SHALL BE FULL COMPENSATION FOR LOCATING, EXPOSING, CLEANING, AND CUTTING THE EXISTING WATER MAIN, REPAIRING ANY AND ALL DAMAGE CAUSED TO EXISTING WATER MAIN, COORDINATION OF WATER SERVICE INTERRUPTION WITH CITY PERSONAL AND ALL MATERIALS AND LABOR REQUIRED TO CONNECT TO THE EXISTING WATER MAIN. EACH CONNECTION TO AN EXISTING 6" WATER MAIN SHALL BE COUNTED FOR PAYMENT.



OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER	BRN-080-1(366)4--0E-78	SHEET NO. M.13

FILENAME: \\SRV20\Shared\Purple_Team\Projects\160414_SOUTH 8TH STREET AND 12TH AVE\Engineering\Design\160414_DESIGN 2.dwg DATE PLOTTED: 7/27/2015 7:35 AM DRAWN BY: JDH PLOT SCALE: 1:2



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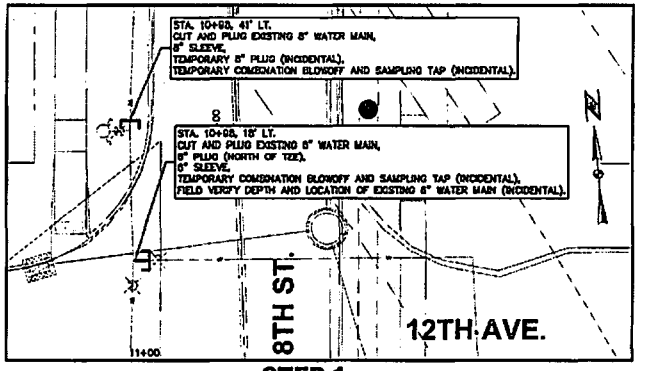
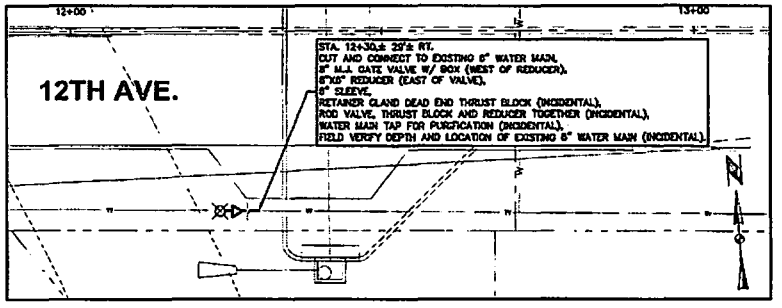
OFFICE OF DESIGN • CADD • PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR 2015	POTTAWATTAMIE COUNTY	PROJECT NUMBER BRN-080-1(366)4--0E-78	SHEET NO. M.14



STEP 1

STA: 10+98,± 18' LT. AND STA: 10+98,±41' LT.

—HAND CHLORINATE ALL PIPE AND FITTINGS.



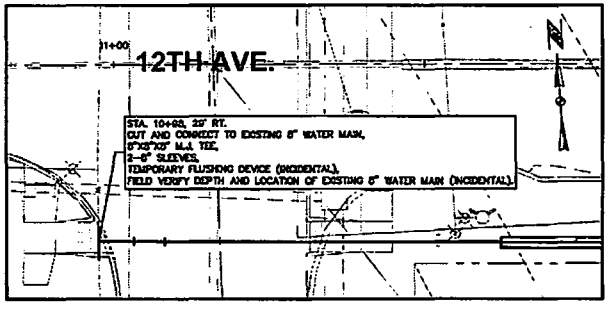
STEP 1

STA: 12+30,± 29'± RT.

—HAND CHLORINATE ALL PIPE AND FITTINGS.

—THE CUT AND CONNECT AT STA. 12+30, 29' RT. SHALL BE DONE ON THE SAME SHUTDOWN AS THE CUT AND PLUG AT STA. 10+98, 18' LT. AND 10+98, 41' LT. AND THE CUT AND CONNECT AT STA. 23+13, 13' LT.

—VALVE SHALL REMAIN CLOSED FOR CONTINUATION OF WATER MAIN CONSTRUCTION.

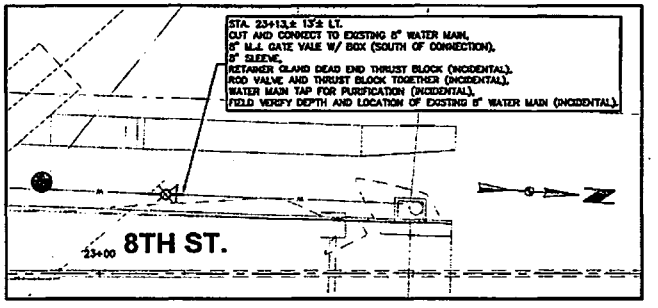


STEP 2

STA: 10+98,± 29'± RT.

—THE WATER MAIN SHALL BE PURIFIED THROUGH THE TEMPORARY DEVICE AT STA. 10+98, 29' RT. PRIOR TO MAKING THE FINAL CONNECTION.

—HAND CHLORINATE ALL PIPE AND FITTINGS.

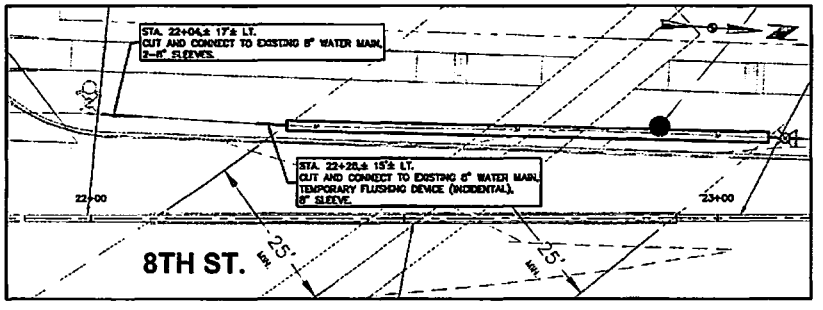


STEP 1

STA: 23+13,± 13'± LT.

—HAND CHLORINATE ALL PIPE AND FITTINGS.

—LEAVE VALVE CLOSED FOR CONTINUATION OF WATER MAIN CONSTRUCTION.



STEP 2

STA: 22+04,± 17' LT. AND STA: 22+28,± 15'LT

—THE WATER MAIN SHALL BE PURIFIED THROUGH THE TEMPORARY FLUSHING DEVICE AT STA. 22+28, 15' RT. PRIOR TO MAKING THE FINAL CONNECTION AT STA: 22+04, 17' LT. AND STA: 22+28, 15' LT.

—HAND CHLORINATE ALL PIPE AND FITTINGS USED TO MAKE FINAL CONNECTIONS.

A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: August 18, 2015
Date of Addendum: August 13, 2015

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
303	78-0801-366	GRADING	POTTAWATTAMIE	IMN-029-3(127)48--0E-78 IMN-080-1(366)4--0E-78	18AUG303.A03

Make the following change to the Proposal Special Provisions List &Text:

Replace SP 120322 with the attached SP 120322a

Revised language for SP 120322 – Railroad Mainline Track that eliminates the option to substitute an Iowa DOT gradation for aggregate base.

Replace SP 120326 with the attached SP 120326a

Revised language for SP 120236 – Progress Scheduling which clarifies the process and submittal requirements for development and maintenance of the required progress schedule.

Iowa Department of Transportation

SPECIAL PROVISIONS
FOR
RAILROAD MAINLINE TRACK

Pottawattamie County
IMN-080-1(366)4--0E-78

Effective Date
June 16, 2015

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120322a.01 DESCRIPTION.
Railroad Mainline Track consists of ties, rails, fastenings, subballast, ballast, asphalt underlayment, and appurtenances delivered in conformity with the contract documents.

120322a.02 MATERIALS.

A. Rail.
New 136 RE (136 pounds/yard) rail shall be provided in 39 or 80 foot lengths. Rail shall conform to Chapter 4, Part 2 of American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering. Rail shall be standard strength commercial grade; no industrial grade rail will be accepted.

B. Fastenings.

1. **Tie Plates.**
Shall be new double-shoulder tie plates per AREMA Plan No 13. Tie Plates shall conform to Chapter 5, Part 1 of AREMA.

2. **Track Bolts and Nuts.**
Shall be new, appropriately sized for the bolt holes in the rail section with length sufficient for a full nut and heavy-duty spring washers (new), including length sufficient to leave at least two threads exposed after the nut is tightened. Track Bolts and Nuts shall conform to Chapter 4, Part 3.5 of AREMA.

3. **Spring Washers.**
Spring washers shall be sized to ensure that the spring washer develops its full reactive force and does not jam into the joint bar hole. Spring washers shall be of the size to fit the bolt and nut used, shall be new, and shall conform to Chapter 4, Part 3.6 of AREMA.

4. **Track Spikes.**
   Shall be new cut spikes per Common Standard 130005.

5. **Rail Anchors.**
   Shall be new bar stock anchors for the appropriate rail base width per Common Standard 135010.

6. **Joint Bars.**
   Joint bars shall be new and of the size, shape, and punching pattern to fit the rail being joined per the IAIS Typical Specifications & Criteria for Construction of Industrial Tracks. Joint bars shall be of the "toeless" and "head free design" to match rail section. New joint bars shall conform to Chapter 4, Part 3.4 of AREMA.

7. **Compromise Joint Bars.**
   Compromise joint bars shall be new and of the size, shape, and punching pattern to fit the rail sizes and sections being joined per the IAIS Typical Specifications & Criteria for Construction of Industrial Tracks. Only factory designed and constructed compromise joint bars shall be used to join rails of different sizes. New joint bars shall conform to Chapter 4, Part 3.4 of AREMA.

C. Wood Ties.
Wood ties shall conform to Chapter 30, Part 3 of AREMA. All ties shall be new hardwood species. No industrial grade ties will be accepted.

1. Splits shall not be longer than 4 inch and not wider than 1/4 inch at either end. Splits longer than 4 inch but not longer than the width of the face in which the split appears, will be acceptable if specified anti-splitting devices are installed with the splits compressed. Any required adzing and drilling for spikes shall be performed prior to treatment.

2. Wood ties shall be sawed and shall be not less than 7 inch thick and 9 inch wide. The length shall be 10.0 feet at road crossings and 8.5 feet for all other track construction. Transition zones shall have tie lengths and quantities per the track drawings.

D. Railroad Crossings.
Concrete panels shall be per Common Standards 200100, 200101, 200102, 200900, 200901, and 200902. Concrete panels shall be supplied for 10 foot lengths at all crossings. Crossing panels shall be supplied with flangeway fillers attached.

E. Turnouts.
All turnout components shall be new of the size and type shown in the plans per the IAIS Typical Specifications & Criteria for Construction of Industrial Tracks. Turnout components shall be manufactured by a company regularly engaged in the manufacture of turnout components. All components need not be made by the same manufacturer but each turnout shall be the product of a single firm. Switch assemblies, stands, frogs, and guardrail assemblies shall conform to applicable requirements in AREMA.

F. Ballast.
Ballast shall be crushed granite or quartzite and conform to the mainline ballast material requirements in Chapter 2 Part 2 of AREMA. Ballast utilized for track constructed with 136 RE rail shall conform to AREMA Standard 4A gradation.

G. Subballast.

1. Subballast shall be crushed gravel or crushed stone with a minimum 75% of the material having two fractured faces. Subballast must meet the quality requirements of ASTM Designation: D 1241 and be approved by the Engineer.
   a. Crushed Gravel shall be the product resulting from crushing by mechanical means, and shall consist entirely of particles obtained by crushing gravel, all of which before crushing will be retained on a screen with openings equal to or larger than the maximum nominal size of the resulting crushed material. If approved by the Engineer, final product gradations may be obtained by screening or blending various sizes of crushed gravel material.
   b. Crushed Stone shall be the angular fragments resulting from crushing by mechanical means the following types of rocks quarried from undisturbed, consolidated deposits: granite and similar phanerocrystalline igneous rocks; limestone; dolomite; sandstone; massive metamorphic quartzite, or similar rocks.
   c. Quality and Material Characteristics:
      1) Coarse Aggregate Portion (Fraction retained on a No. 10 sieve):
         Na2So4 Soundness (5 cycles)
         AASHTO T 104, Max. % Loss 25%
         Los Angeles Abrasion
         AASHTO T96, Max. %Loss 50%
      2) Fine Aggregate Portion (Fraction passing a No. 40 sieve)
         Plasticity Index, Max.
         AASHTO T90 10%
         Liquid Limit, Max.
         AASHTO T89 35%

2. Subballast shall be uniformly graded and shall meet the following gradation requirements:

Sieve Size	Percent Passing
2"	100
1"	90-100
3/8"	50-84
No. 10	26-50
No. 40	12-30
No. 200	0-6

~~3. If acceptable to the Engineer, the subballast may conform to the gradation specified for aggregate base by Iowa DOT, which most nearly matches the gradation of the Subballast, as specified.~~

H. HMA Underlayment.

1. **Asphalt.**
   Unless otherwise shown on the plans, the asphalt shall be AC-10 or AC-20 viscosity graded asphalt cement and shall meet the applicable requirements of ASTM Designation: D 3515.

2. **Aggregate.**
   The aggregates shall meet the applicable sections of ASTM Designation: D 3515 with a gradation as follows.

Sieve Size	Percent Passing
1-1/2 in.	100
1 in.	90-100
1/2 in.	70-90
No. 4	40-65
No. 8	28-48
No. 50	7-20
No. 200	3-8

3. **Asphalt Mixture.**
   a. The Marshall mix properties for the asphalt mixture shall be as follows.

Property	Range
Compaction (blows)	50
Stability, N (min.)	3375
Flow, mm	3.8-6.4
Percent Air Voids	1-3
Percent Voids Filled	80-90

   b. The asphalt content shall be in the range of 4% to 10%.
   c. The asphalt production facility shall be capable of producing a mix meeting the specified mix properties and have sufficient capacity to produce the anticipated volume of asphalt mix.
   d. Recycled Asphalt Pavement (RAP) will NOT be allowed in the Asphalt Subballast. Any mix design that includes RAP will NOT be approved. If any Hot Mix Asphalt has to be removed for any reason, it shall become the property of the Contractor and removed. Disposal shall be the responsibility of the Contractor.

120322a.03 CONSTRUCTION.

A. General.
Track construction not covered specifically herein shall be in accordance with AREMA recommendations and recommended practices. All work shall be supervised by experienced personnel skilled in railroad track construction. Track construction not covered by this specification shall be per AREMA Chapter 5, Parts 4, 5, and 8.

B. Wood Ties.
Ties will be unloaded and handled in such a manner as to not damage ties using approved handling equipment such as tie tongs. Standard center-to-center spacing of ties shall be 21 inch. Tie spacing within the limits of the crossing panels shall be per crossing panel manufacturer recommendations. Ties shall be laid perpendicular to the center line of the track with the grain up (heartwood side down) for wood ties. The best ties shall be used at the rail joints. The ends of ties on one side of the track shall be parallel to the rail and the center of the tie shall be on the approximate center line of the track. The top surface of ties shall provide full bearing for the tie plates. Adzing of wood ties shall be restricted to that necessary to provide a sound true bearing for the tie plate. Adzing in excess of 0.2 inch will not be permitted. Where adzing is necessary, the cut surface of the wood tie shall be completely saturated with creosote or other approved preservatives.

C. Tie Plates.

Track shall be fully plated with double-shouldered tie plates set in position with cant surface sloping toward the center of the track. Tie plates shall be free of dirt and other foreign material when installed. Tie plates shall be placed so that the rails will have full bearing on the plate, and the plate will have full bearing on the tie. Tie plates shall be set at right angles to the rail with the outside shoulder against the base of the rail, and centered on the tie. Tie plates shall be applied at the time the rail is laid to avoid unnecessary spiking.

D. Rail.

The base of the rail and the surface of the tie and tie plate shall be free of dirt and other foreign materials prior to laying rail. Rail shall be laid without bumping or striking, to standard gauge (4 feet 8 1/2 inches between points 5/8 inch below the top of the rail). A track gauge manufactured for the purpose of measuring gauge shall be used rather than a tape measure and gauge shall be checked every third tie.

Any joints shall be assembled prior to fastening rail to ties using joint bars with full number of track bolts and spring washer for each bolt. Loose mill scale and rust shall be removed from rail contact surfaces and joint bars prior to installation.

Continuous welded rail (CWR) will need to be destressed as soon as possible after laying per BNSF "Procedures for the Installation, Adjustment, Maintenance, and Inspection of CWR in Industry Tracks." All welds shall be installed by an individual qualified by the manufacturer of the weld kit and have documentation to support such qualification. All welds must conform at a minimum to the latest addition of the AREMA Manual.

Rails shall be cut square and clean by means of a rail saw. Holes for complete bolting of cut rails shall be drilled and under no circumstances shall new holes be drilled between two holes already drilled. Cutting rails or drilling holes in cut rails by means of acetylene or electric torch will not be permitted.

E. Fastenings.

1. Joints.

Joints shall be installed at connection to existing jointed rail. Bolted joints will not be permitted within 20 feet of the crossing panels. Rails of less than 15 feet in length shall not be used except for temporary closures.

Allowance for expansion shall be provided at rail joints by using rail-expansion shims of softwood not over 1 inch width. Shims shall be of the thickness shown in TABLE I. The temperature of the rail shall be determined by use of a thermometer placed on the rail base on the side away from the sun. Typical rail gap gauges are as shown.

TABLE I. SHIM THICKNESS

Rail Temperature (°F)	Shim Thickness per 39 foot rail length (inch)
Below 25	1/4
25 to 50	3/16
51 to 75	1/8
76 to 100	1/16
Over 100	None

Rails shall be laid to ensure good alignment and the rail ends shall be brought squarely together against the expansion shims and shall be bolted before spiking.

Joint bars shall be clean. Rail joints shall be installed so that bars are not cocked between the base and head of the rail. Bars shall be properly seated in the rail and the full number of correct-size bolts, nuts, and spring washers installed. Bolts shall be placed with nuts alternately on inside and outside of rail. A corrosion resistant lubricant shall be applied to the bolt threads prior to application of nuts. Bolts shall be tightened to an initial bolt tension of between 20,000 and 30,000 pounds, beginning at the center of the joint and working both ways to the ends of the joint.

2. **Continuously Welded Rail.**
Continuously Welded Rail shall be installed per the current BNSF Procedures for the Installation, Adjustment, Maintenance, and Inspection of CWR in Industry Tracks.

3. **Track Spikes.**
Rail shall be spiked promptly after being laid. The right-hand rail going away from the switch points or the outside rail on curves shall first be spiked in position in its proper relation to the lined end of ties. The opposite rail shall then be spiked to true gauge (4 feet 8 1/2 inches). Track shall be laid to standard gauge on tangents and curves of less than 6 degrees; track shall be laid to a gauge of 4 feet 8 3/4 inches on curves 6 degrees or greater. In no case shall gauge less than 4 feet 8 1/2 inches be allowed. Rail shall not be struck with maul or heavy tool when spiking, gaging, or lining.

Track shall be spiked in accordance with the IAIS Typical Specifications & Criteria for Construction of Industrial Tracks. Spikes shall be started vertically and square and be driven straight with full bearing against the base of the rail. Straightening with maul of spikes started crooked shall not be permitted. Spikes started crooked shall be pulled, the holes plugged, and spikes re-driven. Spikes shall not be driven against the ends of joint bars. Immediately after completion of track surfacing, spikes shall be settled in place with the underside of the head of the spike contacting the top of the base with a minimum of pressure.

If spikes are withdrawn from wood ties, the holes shall be swabbed with creosote and plugged with creosoted tie plugs of proper size to fit the hole. If spikes are withdrawn and spikes are to be reinserted in existing spike holes, the holes shall be swabbed with creosote and plugged with creosoted tie plugs prior to re-driving the spike. Tie plugs shall not be installed in prebored holes unless spikes have been driven and withdrawn.

4. **Rail Anchors.**
Rail anchors shall be utilized for track constructed without elastic fasteners. Rail anchors shall be applied out-of-face along each rail, directly across from each other on the same tie. Box anchor every other tie in standard track construction and every tie in turnouts and at road crossings. Rail anchors shall grip the base of the rail firmly and shall have full bearing against the face of the tie. Rail anchors shall not be moved by driving them along the rail. Rail shall be anchored immediately after spiking and before rail has experienced a large temperature change.

F. Ballast.
The track, after being aligned, shall be brought to grade and surface in lifts not exceeding 4 inches. After each list, the ballast shall be tamped. When using jacks, they shall be placed close enough together to prevent undue bending of the rail or stress of rail and joint. Both rails shall be raised at one time and as uniformly as possible, except where superelevation is required. Superelevation shall be obtained by raising the outside rail of the curve; the inside rail shall be maintained at grade.

Every tie in the track shall receive two or more full insertions of the tamping heads. Ballast shall be power-tamped under both sides of ties from each end to 15 inches inside each rail. The center shall be filled with ballast, but tamping will not be permitted in the center of the tie between the above stated limits. Both ends of the ties shall be tamped simultaneously and tamping inside and outside of the rail shall be done at the same time. Tamping tools shall not be used with more than 35% wear and shall be worked opposite each other on the same tie. All ties shall be tamped to provide solid bearing against the base of the rail after the track or turnout is raised to grade at final surfacing. All down ties shall be brought up to the base of rail and shall be machine tamped. The resultant track surface and alignment shall be uniform and smooth. Tamping of track in snow or frozen ballast conditions will not be permitted.

For road crossings, tamping of ballast materials shall be performed by setting the tamping force and insertion depth to the minimum necessary to adequately tamp the track. The tamper operator shall monitor the depth of tamping and limit the depth to prevent detrimental effects of the tamper feet on the HMA underlayment.

The ballast between the ties shall be thoroughly compacted with a vibratory compactor, or other approved means, after each raise. The ballast shall be tamped for the entire length of the crossties for the crossing. The track shall receive final alignment and surfacing prior to placement of the crossing surface. The ballast in the cribs and on the shoulders shall be compacted using a vibratory plate compactor or other approved means.

G. Railroad Crossings.
Concrete crossing panels shall be installed per manufacturer recommendations.

H. Turnouts.
Turnouts shall be fabricated and installed to IAIS standards.

I. Removal of Railroad Track.
The former track zone shall be shaped to drain and allow a wheeled vehicle to drive the grade at 20 mph. All materials including the rails, ties, tie plates, ballast, fasteners, and other associated track materials shall become the property of the contractor and shall be removed from the project and properly and legally disposed of off the property.

J. Subballast.

1. Submit the following items to the Engineer:
   a. The source of the subballast to be used on the project.
   b. Material Test results of the subballast proposed for use on the project. Test results must outline the material gradation and percentage of material with two fractured faces.

2. Subballast shall be placed only when weather conditions do not detrimentally affect the quality of the finished subballast. Hauling and placing of subballast will not be permitted when doing so will rut or deform the finished subgrade.

3. Subballast shall be placed in uniform lifts of not more than 6 inches loose for the full width of the cross section. Each lift of subballast shall be compacted to a density of not less than 95% of the maximum dry density determined by ASTM Test Designation: D 1557 (Modified Proctor).

4. The subballast shall be trimmed to the lines and grades shown on the plans and shall be maintained in a condition or manner acceptable to the Engineer until the final acceptance and completion of all work under this Contract. Any irregularities that develop in the subballast section during construction operations and prior to laying track, shall be filled and compacted

to a smooth and even surface true to the subgrade elevations without any additional cost to the Contracting Authority.

K. HMA Underlayment.

1. General.
Asphalt shall not be applied to the soil when the air temperature in the shade is less than 40°F and rising unless otherwise permitted by the engineer. Work shall be suspended during rain or when the mix is wet. Submit design mix to Engineer 14 days prior to placement of HMA.

2. Preparation of Subgrade.
Prior to beginning any asphalt stabilization, the subgrade shall be compacted and shaped in conformance with the lines, grades, and cross sections shown on the plans or established by the Engineer. The subgrade shall be free of ruts, depressions, or loose material.

3. Equipment.
Equipment necessary for the proper construction of the work shall be on the project site and in good working condition before construction operations will be permitted to begin. The Contractor shall at all times provide sufficient equipment to enable continuous execution of the work. The Engineer shall have the right to reject equipment which is not capable of producing the required results, or which cannot be properly calibrated or controlled.

4. Placement and Compaction.

a. The asphalt mix shall be hauled by truck from the mix plant. The temperature of the mix when leaving the plant shall not be less than 290°F and the trucks shall be covered to minimize temperature loss. The mix shall be placed using either a standard highway asphalt paver or backdumped from trucks and spread with a dozer blade. Procedures for spreading and compacting the mix shall minimize temperature loss. The temperature of the mix shall not be allowed to fall below 200°F prior to obtaining the required compaction.

b. The asphalt mix shall be placed in lifts not exceeding 4 inches in compacted thickness. The layer shall be compacted using pneumatic roller or steel drum vibratory compactors meeting the requirements for compacting equipment specified in Section 2107 of the Standard Specifications. The layer shall be compacted to a minimum of 95% of the theoretical maximum density determined in accordance with ASTM Designation: D 2041.

c. The top surface of the compacted layer shall be finished to a true surface with no depressions which will hold water or prevent proper drainage. The finished top of subgrade shall conform to the grades shown on the plans with a tolerance of plus or minus 1/2 inch, except that for full depth designs, where the ties are placed directly on top of the HMA layer, the tolerance of the finished surface shall be plus or minus 1/4 inch.

d. Laboratory test reports shall be submitted to the Engineer. The testing shall be performed by an independent laboratory under contract with the successful bidder. Detailed requirements of the quality control program follow:

1) Verification of Marshall Properties.

a) A minimum of one test will be pulled daily to determine the Marshall properties of the mix.

b) Additional testing may be required for additional information to effectively control production and to ensure a quality product is being provided.

c) Marshall properties shall conform to Part 2.3A of the Standard Construction Specifications.

2) Ignition Oven and Gradation Testing.

a) One test shall be pulled per 500 tons of asphalt mixture produced.

b) The Engineer shall provide the testing laboratory representative with tonnages at which to pull the required tests.

c) The asphalt cement content of the mix shall be between 4.5% and 10% as determined by the asphalt ignition oven.
d) The gradation obtained from the ignition oven sample shall conform to Article 120322.02, H, 2.

3) **Theoretical Maximum Specific Gravity (Gmm) Testing.**
A theoretical maximum specific gravity will be determined with each ignition oven sample and logged and a 4-point moving average established for calculation of in-place density as measured by a nuclear density meter.

4) **In-place Compaction Testing.**
a) In- place density testing will be measured with a nuclear density meter calibrated on the project for each lift of asphalt placed. Compaction shall conform to Article 120322.03, K, 4, b which states that the minimum density shall be 95% of the Gmm value.
b) Percent density will be calculated using the average of all Gmm tests conducted the day the pavement was placed. If less than three Gmm tests were conducted for a day of production, the 4-point moving average (last four tests prior to the end of the day) value shall be used in the density calculation.
c) Location and frequency of density tests shall be as shown in the table below:

Daily Production (Tons)	Number of Sub-lots	Number of Density Tests	Number of Verification of Density Tests
0-599	3	6	3
600-999	4	8	4
1000 or more	5	10	5

5) **Non-Conforming Material.**
a) Any material fount to be out of specification will be addressed immediately
b) The Engineer shall be notified of the situation and be provided with a proposed solution in order to address the out of specification material.

6) **Profile Grade and Cross Slope.**
a) In order to maintain profile grade, a 30 foot ski or string line is to be used.
b) The profile grade shall not exceed 1/4 + inch variance in 50 feet.
c) The cross slope shall not exceed 1/4 + inch variance in 12 feet.
d) If there is a problem with profile grade or cross slope the Contractor will be required to stop work and make the appropriate adjustments.

120322a.04 METHOD OF MEASUREMENT.

A. Rail.
Track linear feet installed measured along the centerline of track for each rail weight and tie type.

B. Railroad Ballast.
Per ton for each ballast gradation, satisfactorily placed.

C. Railroad Subballast.
Per ton, satisfactorily placed. No allowance for shrinkage or compaction will be allowed.

D. Railroad Crossing.
Per track linear feet of installed crossing measured along the centerline of track for each rail weight and tie type.

E. Turnout.
Per each installed turnout for each size, rail weight, and tie type.

F. Removal of Railroad Track.
Per track linear feet removed measured along the centerline of track.

G. HMA Underlayment.
Per square yard, satisfactorily placed.

120322a.05 BASIS OF PAYMENT.

A. Rail.
Payment is full compensation for furnishing and installing rail, ties, fasteners, joint bars, welding, and incidental items and accessories.

B. Railroad Ballast.
Payment is full compensation for furnishing, installing and tamping of ballast.

C. Railroad Subballast.
Payment is full compensation for furnishing and installing subballast. Payment is full compensation for furnishing all labor, materials, tools, equipment, supplies, supervision, crushing, loading, hauling, placing, compacting, wetting, drying, trimming, and all other items required to complete the work in accordance with the plans and specifications.

D. Railroad Crossing.
Payment is full compensation for furnishing and installing concrete railroad crossing panels.

E. Turnout.
Payment is full compensation for assembly and installation of turnout, including rail, ties, fasteners, joint bars, welding, and all accessories and equipment.

F. Removal of Railroad Track.
Payment is full compensation for removal and disposal of all track components.

G. HMA Underlayment.
Payment is full compensation for furnishing and installing HMA underlayment. Payment shall be full compensation for furnishing all labor, materials, tools, equipment, supplies, supervision, loading, hauling, placing, compacting, and incidentals necessary to complete the work in accordance with these specifications.

Iowa Department of Transportation

SPECIAL PROVISIONS
FOR
PROGRESS SCHEDULING

Pottawattamie County
IMN-029-3(127)48--0E-78
IMN-080-1(366)4--0E-78

Effective Date
June 16, 2015

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120326a.01 GENERAL.

A. The Contractor's planning, scheduling and execution of the work shall be ~~disclosed~~ submitted to the Iowa DOT by submission of the Preliminary, Baseline and Contract Schedule information and data specified in this Special Provision. The Work under this Contract shall be planned, scheduled, ~~executed,~~ and reported ~~and accomplished~~ using Critical Path Method (CPM) scheduling. The scheduling Work shall be performed by a Qualified Scheduler.

B. ~~Contract work may begin prior to the Engineer's approval of the Baseline CPM schedule, however, the submittal and approval shall be in accordance with the terms of this Special Provision.~~ No contract work shall begin without a Baseline CPM schedule approved by the Engineer.

C. Develop and update a computerized CPM Schedule as described ~~herein and as required by the Engineer~~. When the term "Schedule" is used in the Special Provisions, it shall mean CPM Schedule. ~~All work associated with these requirements is considered incidental for which no direct payment will be made.~~

D. "Primavera Project Management" (P6), version 8.2, or later shall be used to develop and update the schedule. When the term "Primavera" is used in the Special Provisions, it shall mean "Primavera Project Management" (P6), version 8.2, or later.

120326a.02 DEFINITIONS.

~~**Activity**~~
~~A fundamental unit of work in a Project Plan and Schedule establishing the time, cost and resources required for performing or furnishing a part of the Work, or a requisite step. Each activity has defined geographical boundaries, time duration in whole days and a detailed estimate of cost and resources~~

~~required to construct the task. Each activity is assigned a unique description, activity number, and activity codes.~~

~~Baseline Schedule~~
~~The initial accepted Schedule representing the Contractor's work plan on the first working day of the project. The Baseline Schedule shall represent the Contractor's best judgment and intended plan for completion of the Work in compliance with specific requirements of the contract documents. The Baseline Schedule shall take into account all activities required to accomplish the work as well as interface dates with utility owners/railroads/municipalities/agencies, submittal review and re-submittals, Iowa DOT operations and other activities to a minimum WBS level 5 as defined later in these provisions. The Baseline Schedule shall anticipate all necessary labor equipment, materials and resources to accomplish activities within the duration set forth in the contract documents.~~

~~Contract Schedule~~
~~The most current version of the Baseline Schedule that has been reviewed and accepted by the Engineer. The accepted baseline schedule shall be updated monthly through the data date designated by the Engineer. Upon acceptance, the updated baseline schedule shall become the Contract Schedule which shall be used for subsequent planning, scheduling and management of the Project. The updated Contract Schedule shall show actual, not calculated, progress. Only accepted logic changes and accepted Contract changes shall be incorporated into the Contract Schedule.~~

Cost Loading
The allocation of direct and indirect costs to each activity based on Iowa DOT bid items, utilizing the scheduling software's resources and cost accounting unless approved otherwise by the Engineer.

~~Constraint~~
~~A scheduling restriction imposed on the start or finish of an activity. Use of constraints is generally prohibited unless the time element is contractual. The use of constraints requires approval of the Engineer.~~

~~CPM Schedule~~
~~Computerized resource loaded Schedule which accounts for the Work required by the contract documents, reflects Work remaining and factual historical information regarding how completed Work was performed.~~

~~CPM Network~~
~~The structure of the computerized Schedule. The CPM network accounts for the work required by the contract documents and defines the construction sequence by using logical predecessor and successor relationships.~~

Critical Path
The longest continuous chain of activities in the CPM network from start of the project to the finish of the project ~~as defined by the contract documents~~. In general, a delay to an activity on the critical path could extend the scheduled completion date. The critical path shall be identified as the longest path as determined by the scheduling software when the definition of critical activities is set to "Longest Path."

Critical Path Method (CPM)
A network based planning technique using activity durations and the relationships between activities to mathematically calculate a Schedule for the entire project.

Data Date
The ~~day after the~~ date through which a Schedule is current. Everything occurring earlier than the data date is "as-built" and everything ~~on or~~ after the data date is "planned."

Float
The difference between the earliest and latest allowable start or finish times for an activity.

Early Dates
The early start dates and early finish dates, i.e., the dates each Activity will start and finish if each is started at the earliest end of the range of dates that the CPM Schedule indicates the Activities can be performed.

Late Dates
The late start dates and the late finish dates; i.e., the dates each Activity will start and finish if each is started at the latest end of the range of dates that the CPM Schedule indicates the Activities can be performed and still achieve the milestones and Contract Time.

Milestone
An event activity that has zero duration and is typically used to represent a point in time.

Near Critical Path
A chain of activities with total float exceeding that of the critical path but having no more than 10 ~~working~~ days of total float.

~~**Preliminary Baseline Schedule**~~
~~The preliminary Baseline Schedule shall be submitted to the Engineer at the Pre-construction Scheduling Conference. The Preliminary Baseline Schedule shall include the activities and planned sequence of operations in full Baseline detail for the first 120 working days after Receipt of signed contract, and lesser detail for the remainder of the project.~~

Predecessor Activity
An activity, which precedes another activity (to which it is logically tied) in the network. Each schedule activity except the project start milestone shall have a logical predecessor.

~~**Qualified Scheduler**~~
~~An individual who has completed CPM scheduling training, has performed CPM scheduling as a primary responsibility, understands the specification requirements and is able to demonstrate their ability to accomplish the requirements.~~

~~**Resource Loading**~~
~~See Cost Loading.~~

Successor Activity
An activity, which follows another activity (to which it is logically tied) in the network. Each schedule activity except the project completion milestone shall have a logical successor.

~~**Two Week Detail Schedule**~~
~~The Two Week Detail Schedule is a hand or computer generated bar chart schedule which spans a forward looking, rolling period of at least 14 calendar days. The Two Week Detail Schedule shall be updated and submitted to the Engineer on a bi-weekly basis. The Two Week Detail Schedule shall be based on the accepted Contract Schedule and provide a greater breakdown of the Contract Schedule activities. The Two Week Detail Schedule shall specifically reference the accepted Contract Schedule activity ID numbers and define subsequent specific daily operations for all work activities scheduled to be performed during the 2 week period. The Two Week Detail Schedule shall be submitted at the Quantity Rectification Meeting as described in Article 120293.08, A.~~

~~**Time Impact Analysis (TIA)**~~
~~A Schedule or schedule fragnet, and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.~~

Total Float
Number of working days by which a part of the Work in the Progress Schedule may be delayed from its

Early Dates without necessarily extending the Contract Time.

~~**Work Breakdown Structure (WBS)**~~
~~"defines the project tasks, or work to be performed, expressed in terms of the product or result of the work, i.e., deliverables, and establishes a relationship between the tasks and the major project objectives. The WBS also establishes the framework for the scheduling and control of the project. It functions to establish a framework for summarizing the Schedule and cost status of the project at progressively higher levels of management." (Cook, 1971).~~

120326.01 GENERAL SCHEDULING REQUIREMENTS.

A. Schedules shall show the order in which the Contractor proposes to carry out the work with logical links between ~~time-scaled~~ work activities~~,~~ and ~~retained~~ logic calculations made using CPM to determine the controlling operation or operations. The Contractor is responsible for assuring that all activity sequences are logical and that each Schedule shows a coordinated plan for complete performance of the work within the contract~~ed~~ period ~~of performance~~.

B. Schedules shall comply with the staging, phasing, work ~~constraints~~ restrictions, and milestones defined in the contract documents.

C. Schedules shall be developed with the intent of expeditious ~~execution~~ completion of the project and continuous flow of operations from project start to project finish. ~~The schedule shall not include non-work periods for the contractor's convenience, except for holidays recognized by the Iowa DOT.~~

D. The Schedules shall be based on work~~ing~~ shifts of at least 8 hours per day and a minimum of a 5 day work week except during periods of weather limitations. See M. Project Calendars and Weather Contingency Days.

E. Schedules shall clearly define and identify significant interaction points and action responsibilities between the Contractor, subcontractor(s), Vendor(s), Iowa DOT and other entities (such as utilities, local governments, railroads, special service districts, adjacent projects or contractors, etc.).

F. Primavera Schedule Option settings:
- Set Method of Scheduling to Retained logic.
- Calculate start –to-start lag from Early Start.
- Define critical activities as Longest Path.
- Compute total float as finish float = late finish – early finish.
- Set Calendar for scheduling relationship lag to predecessor calendar, unless directed otherwise by the Engineer.

G. Primavera Project Level settings:
- All Calendars shall be Project level Calendars; not Global or Resource Calendars.
- All Activity Codes shall be Project level; not Global or EPS level Activity Codes.
- The schedule shall not utilize User Defined fields unless approved by the Engineer.
- The Drive activity dates by default box shall be unchecked

H. Schedules shall have a sufficient number of activities to assure adequate planning of the project, to permit monitoring and evaluation of progress, earned value analysis and to perform analysis of potential impacts to cost and time. Additional activities shall be ~~added to the schedules upon request by Iowa DOT~~ at the request of the Engineer.

I. Schedule activities shall be described in detail so that all of the contracted Work is readily identifiable and the progress on each activity can be readily measured. The schedule shall

include activities to establish a level of detail acceptable to ~~Iowa DOT~~ the Engineer. As a minimum, the following attributes shall be uniquely assigned to each activity within the schedule ~~unless otherwise acceptable to, or required by Iowa DOT~~:

1. A unique alphanumeric Activity ID shall be assigned to each activity. The proposed activity ID format shall be submitted to the Engineer for approval ~~prior to implementation~~.

2. An Activity Description which clearly describes the Work represented by the activity. Each activity description shall indicate its associated scope and or location of work by including such terms as, type or description of work, bridge number, station to station location, side of highway (such as, eastbound or southbound), shoulder, ramp name, pipe number, etc. Activity Descriptions shall utilize a similar and consistent format.

3. Each activity shall be additionally described by assigning the following activity codes:

I.	Discipline	BA	=	Barrier
		CI	=	Concrete Items
		DR	=	Drainage
		EA	=	Earthwork
		EN	=	Environmental
		FE	=	Fence
		GEN	=	General
		GEO	=	Geotech
		LA	=	Landscaping/Aes.
		LI	=	Lighting
		NW	=	Noise Wall
		RR	=	Railroad
		REC	=	Reconstruct/Relocate
		REM	=	Removal
		RW	=	Retaining Wall
		RP	=	Roadway Paving
		SI	=	Signal/ITS
		SS	=	Signing / Striping
		ST	=	Structure
		TC	=	Traffic Control
		UT	=	Utility

II.	Stage:	S1	=	Stage 1
	(and, or Phase)	S2	=	Stage 2
		S3	=	Stage 3

~~III.~~	~~FSta:~~	~~####+##~~		~~(From Station)~~

~~IV.~~	~~TSta:~~	~~####+##~~		~~(To Station)~~

III. ~~V.~~	Resp:	Iowa DOT	=	Iowa DOT
	(Responsibility)	Contractor	=	Contractor Name
		Subcontractor	=	Subcontractor Name
		Third Party		Third Party Name
		Utility	=	Utility Company Name
		Vendor	=	Vendor Name

IV. ~~VI.~~	CC	CO No.	=	Change Order Description
	(Contract Change)			

The Contractor shall fully utilize the activity code structure shown above and make every effort to enhance this structure. Proposed modifications to the activity code structure shall be submitted in the above format to the Engineer for ~~acceptance before implementation~~ review

and approval. Activity coding shall be assigned consistently and uniformly among all similar activity types. The Engineer may require project specific adjustments to the activity code template.

4. The duration of each activity shall include the necessary ~~work~~ days to actually complete the work defined by the activity and shall be based on the quantity of work divided by ~~a reasonable~~ the production rate(s):
   a. A duration in whole days of not less than 1 working day, except for milestone type activities, and
   b. Not more than 20 working days, except for non-work type activities such as mobilization, settlement durations, or submittal preparation, unless otherwise ~~authorized~~ approved by the Engineer.
   c. The duration of activities assigned multiple resources shall be evaluated ~~by~~ based on the production rate of each resource assignment.
   d. Activity durations shall not include time for weather contingency.

5. Early start and early finish dates.

6. Late start and late finish dates.

7. Activity Total Float.

8. At least one predecessor and one successor activity, except for project start and finish milestones.

J. The Contractor shall use submittal review and revised submittal review periods required by Section 1105 of the Standard Specifications. A review period of 30 calendar days shall be used for all review periods not specifically identified in the specifications.

K. In addition to the Work required by the contract documents, other cost, time or millstone type activities shall be included in the schedule within the WBS. These types of activities include, but not limited to:
   - Mobilization
   - Project Milestones and Project ~~highlights~~ Staging, i.e. traffic switches, completion of structures, major roadway elements and phases.
   - Submittal, review, and acceptance activities when applicable, including time periods for the Department's acceptance as specified in ~~the Contract~~ Section 1105 of the Standard Specifications.
   - Fabrication, delivery, installation, testing, and similar activities for materials, plants, and equipment.
   - Settlement, surcharge and cure periods.
   - Coordination, notification and relocation of Utilities and other third party work.
   - Notifications to the ~~Iowa DOT~~ Engineer for significant events, such as 20 working day notification to the ~~Iowa DOT~~ Engineer for impacts to the Iowa DOT ITS system.
   - Installation, erection and removal, and similar activities related to temporary systems or structures such as temporary electrical systems or shoring.
   - Permits
   - ~~Additional information as required by the Engineer.~~

L. All activities included in the schedule shall be categorized within a WBS ~~acceptable to~~ approved by the Engineer. The following table represents levels 1 through 4 of the WBS ~~structure,~~ and the minimum levels of the WBS that all resource and Schedule information shall rollup to.~~, however, the~~ The Contractor shall provide further detail, to at least level 5, to ensure ~~a clear understanding of the Contract and construction requirements, and to ensure~~ all work is accounted for by location; structure number, Highway/road/street number and direction, and/or

area of work as defined in the contract documents.

Level 1	Level 2	Level 3	Level 4	Level 5
1.00 Project Name				
	1 .01 Administration and Milestones			
	1.2 Project Management and Mobilization			
	1.3 Procurement and Submittals			
	1.4 Permits			
	1.5 Construction			
		1 .05.01 Stage/Phase		
			1.5.1.1	Maintenance of Traffic
			1.5.1.2	Roadway
			1.5.1.3	Ground Improvements
			1.5.1.3	Structures
			1.5.1.4	Utilities
			1.5.1.5	Landscaping
			1.5.1.6	Signing/Striping/Signals and ITS
	~~1.07 Contract Changes~~			

The Contractor shall fully utilize the WBS ~~structure~~ shown above and make every effort to enhance this structure. Proposed modifications to the WBS ~~structure~~ shall be submitted in the above format to the Engineer for ~~acceptance before implementation~~ review and approval. The WBS ~~structure~~ shall be assigned consistently and uniformly among all similar activity types. The Engineer may require project specific adjustments to the WBS template may be required.

M. Project Calendars and Weather Contingency Days.

1. Each activity shall be assigned a Project specific calendar. Each calendar, except for the seven day calendar, shall include the minimum reasonable number of non-work days related to normal weather events that prevent work from occurring ~~as shown in the chart below~~; weather contingency days shall be shown as non-workdays on the appropriate calendar(s) and shall be documented and justified in the Preliminary and Baseline narrative. Saturdays cannot be used as a weather contingency work day if a 5 day work week is planned, and Sundays cannot be used as a weather contingency work day if a 6 day work week is planned. The estimated number of weather contingency days shall not be the basis for additional time compensation in the event the number of weather contingency days is exceeded. The number of weather contingency days is subject to the Engineers approval.

~~Calendar Category~~	~~Jan~~	~~Feb~~	~~Mar~~	~~Apr~~	~~May~~	~~Jun~~	~~Jul~~	~~Aug~~	~~Sep~~	~~Oct~~	~~Nov~~	~~Dec~~
~~Earthwork, Grade, Subgrade, Paving Removals, lighting, Electrical, Landscaping, Utility etc~~	~~*~~	~~*~~	~~*~~	~~5~~	~~6~~	~~6~~	~~4~~	~~5~~	~~4~~	~~3~~	~~*~~	~~*~~
~~Substructure, Ground Improvement~~	~~*~~	~~*~~	~~*~~	~~3~~	~~4~~	~~3~~	~~2~~	~~3~~	~~2~~	~~2~~	~~*~~	~~*~~
~~Superstructure~~	~~*~~	~~*~~	~~*~~	~~1~~	~~2~~	~~2~~	~~1~~	~~2~~	~~1~~	~~1~~	~~*~~	~~*~~

~~* number of days based on temperature restrictions of materials placed or type of work i.e. concrete, backfill, subgrade, paving, structures, and landscaping.~~

2. Calendars shall be updated monthly in the scheduling software with actual days worked and days not worked prior to submittal of an updated Schedule. ~~The calendar shall be updated to reflect that work occurred on a day identified as a weather contingency day by making it a standard work day. If an activity on the longest path is affected by weather, the calendar shall be updated to reflect the non- work day. The actual days work and not worked shall reflect the actual work and non-work days as identified by the Engineer.~~

3. The number of work related calendars shall be minimized to prevent the distortion of total float, However, calendars specific to a particular type work, such as earthwork, structures, paving, etc. ~~and landscaping~~ shall be utilized to address seasonal weather limitations based on the type of work. Calendars shall be assigned consistently and uniformly among all similar activities.

N. Schedule submittals shall utilize Project ID and Project Naming conventions ~~acceptable to~~ approved by the Engineer.

O. Schedules shall not include or utilize negative lag durations, open ended activities, float suppression techniques or ~~time or~~ date constraints which are not contractual. The Schedule shall not include positive lag durations, unspecified milestones, and unreasonable logic ties ~~and/or sequences that are deemed unreasonable by Iowa DOT~~. Sequestering of total float through the manipulation of calendars, extending activity durations, logic ties or sequences is prohibited. Multiple relationships with the same predecessor or successor and reverse logic conditions are prohibited. Redundant logic shall be removed from the schedule.

P. The "Level Resources," "Apply Actual," "Update Progress," "Auto Compute Actuals" or similar functions shall not be used to automatically update the schedule. The schedule shall be updated manually with actual information.

~~**Q.** The Engineer may require additional information or scheduling related functions to be performed in an effort to achieve the intended results of the specifications whether or not specifically identified within specification.~~

R. The Contractor shall illustrate, through submittal of a time impact analysis, the effects resulting from any ~~claimed delays or Change Orders~~ changes which are being negotiated between the Engineer and the Contractor. The Contractor shall prepare a time impact analysis to determine the effect of the change in conformance with the provisions in Article SP-120326.06, D, "Time Impact Analysis." ~~specified herein, and shall include the impacts acceptable to the Engineer~~ Approved time extensions shall be included in the next Schedule update. Changes that do not affect the controlling operation on the longest path will not be considered as the basis for a time adjustment. ~~Changes that affect the controlling operation on the longest path may be considered by the Engineer for decreasing time or granting an extension of time for completion of the Contract. Time extensions will only be granted if the total float is absorbed and the scheduled completion date is delayed one or more working days because of the ordered change on contract date, calendar day or working day contracts.~~

S. Use of Float.

~~1.~~ Total Float and Contract Float are not for the exclusive benefit of the Contractor or IOWA DOT, but is an expiring resource available to the Project, to accommodate changes in the Work, ~~however originated,~~ or to mitigate the effect of events which may delay ~~performance or~~ completion of all or part of the Work within the Contract Time. Contract time extensions ~~for Contract performance~~ will be granted only to the extent that delays or disruptions to affected work paths in the ~~Contract~~ Schedule in effect at the time of delay or disruption exceed total float ~~along those paths causing a delay to the project completion date beyond the contract time after the Engineer enacts schedule corrections to ensure the schedule represents true and accurate as-built or planned conditions or does not include float suppression. Delays and disruptions which cause the end date of Work to exceed current Contract completion date must be beyond control and without fault or negligence of the Contractor or any Subcontractor at any tier. In the event that the delays or disruptions impact an already negative float path, the Contractor will not receive a time extension unless and until the activity with the highest negative float is driven even further negative. Delays or disruptions will not be considered a basis for time extension to this Contract unless and until such delays~~

~~or disruptions are resolved as set forth in the Contract Documents~~.

2. ~~Pursuant to the float sharing requirements of this Section, t~~The use of float suppression techniques ~~such as preferential or logic sequencing (crew movement, equipment use, etc.), special lag/lead restraints, and extended activity times or duration, imposed dates, scheduling of work not required for the Project as required work, and others,~~ are expressly prohibited. ~~Use of float time disclosed or implied by use of alternate float suppression techniques shall be shared to the benefit of both IOWA DOT and the Contractor.~~ The ~~U~~use of any ~~network~~ techniques solely for the purpose of suppressing float will be cause for rejection of Schedule submittal. ~~The Contractor shall adjust or remove any float suppression techniques as a prerequisite to a request.~~

T. Schedule Recovery.

1. Unless otherwise directed in writing by the Engineer, whenever the schedule includes negative float, critical items of construction fall behind the planned Schedule or when items which were not critical become critical the Contractor shall promptly notify the Engineer and undertake appropriate action at no additional cost to Iowa DOT to recover schedule.

2. The Contractor shall submit, following recognition of ~~the problem~~ a schedule delay, a written recovery statement to the Engineer describing the cause for the slippage and the actions planned by the Contractor to recover the Schedule within the shortest reasonable time ~~whenever the Contractor fails to complete Activities within the Late Dates in the Contract Schedule~~.

3. The Contractor's refusal, failure or neglect to take appropriate recovery action or to submit a written recovery statement ~~shall constitute reasonable evidence that the Contractor is not prosecuting the Work, or separable part, with the diligence that will insure its completion within the applicable Contract Time and~~ shall constitute sufficient basis for the Engineer to recommend to withhold ~~any~~ payment ~~otherwise due,~~ or identify and order alternate recovery actions on the basis of the information in the ~~Contract~~ Schedule.

U. Errors or omissions on Schedules shall not relieve the Contractor from finishing all work within the ~~time limit~~ contract period specified ~~for substantial completion of the Contract~~. If, after a Schedule has been accepted ~~by the Engineer~~, either the Contractor or the Engineer discovers that any aspect of the Schedule has an error or omission, it shall be corrected by the Contractor as required by the Engineer.

V. Mobilization activities and payment amounts shall be created using the Basis of Payment described in Article 2533.05 of the Standard Specifications. Each of these mobilization payment occurrences shall have a unique activity, date, and amount in the schedule.

120326.02 COST LOADING.

A. Baseline Schedule shall be cost loaded. Activity level cost loading shall be based on Iowa DOT bid items. One or more resources shall be assigned to each activity representing the value of the work identified by the activity.

B. One resource shall be defined for each bid item where the resource ID equals the Bid Item Number and resource name equals the Bid Item Description. A prefix may be required to be added to the resource ID and resource name. The resource structure within the scheduling software shall match the bid tab structure to facilitate comparison of cost and resource loading to the bid tab using the scheduling software.

C. The cost loading shall match in quantity, units, unit price and total value of each bid item and the total bid tabulation. The total dollar value shall equal the contract sum +/- 1%.

D. Activity percent complete shall be set to "Physical".

E. Activity Duration type shall be set to "Fixed Durations & Units."

F. Set "Resource Type" to "Material."

G. Select "Calculate costs from Units."

H. Resources shall not drive schedule dates. All resources shall be assigned to a 7 day calendar.

I. Under Project Calculations ensure "Recalculate actual units and cost when duration % complete changes" is unchecked.

J. The baseline schedule Planned Dates will be set to match the current Start and Finish Dates; use global change once Baseline schedule is approved.

K. Financial periods shall be defined in Primavera to match pay periods.

L. Actual cost shall be updated in each schedule submittal by updating a level of effort (LOE) activity pertaining to each project contract number. Actual cost corresponding to pay voucher totals shall be inserted into applicable LOE payment activity as actual cost.

M. Create a resource per LOE payment activity representing voucher payments. Payment resource to have an assigned price of $1/unit.

N. Actual cost data paid from Iowa DOT pay vouchers shall be saved to the corresponding pay period within the financial period using Primavera's "Store Period Performance" function.

O. Update cost and resource loaded activities in the schedule based on "Physical % Complete" only, actual cost information is placed in LOE activities.

120326.03 ~~PRECONSTRUCTION~~ SCHEDULING CONFERENCE.

A. The Contractor shall schedule and the Engineer will conduct a ~~pre-construction~~ scheduling conference with the Contractor's project manager and~~, qualified~~ scheduler within 15 calendar days of Receipt of signed contract. At this meeting the Engineer will review the requirements ~~of this section~~ of the special provisions with the Contractor.

B. Items to be submitted by the Contractor, 2 working days before the scheduling conference, include, but are not limited to:

- The Contractor shall submit a Preliminary Baseline Schedule that complies with the requirements of these special provisions. The Preliminary Baseline Schedule shall include ~~displaying~~ the activities and sequence of planned operations ~~in full Baseline detail~~ for the first 120 ~~working~~ days of work after Receipt of signed contract~~,~~ and lesser detail for the remainder of the project. ~~and shall~~ The Contractor should be prepared to discuss the proposed work plan and Schedule methodology ~~that comply with the requirements of these special provisions~~. The schedule shall be submitted electronically in pdf and xer formats.
- List of Activity Codes.
- WBS Structure.
- Narrative report index.
- Graphical reports (time-scaled resource bar charts).
- ~~Proposed Qualified Scheduler's resume, references, certifications of training and list of relevant projects.~~
- Two Week Detail Schedule.

C. Items to be reviewed include, but are not limited to:
- Review the resume, experience, and qualifications of the proposed ~~Qualified~~ Scheduler.
- Review of Narrative and report formats.
- Review utility, railroad and other third party requirements and schedules.
- Review submittal requirements and procedures.
- Review time required to review submittals and resubmittals.
- Review requirements for tests and inspections.
- Review and finalize a list of construction activities to be included in the Schedule.
- Review of cost loading.
- Review Activity Codes and WBS structure.
- Review procedures for updating the Schedule.
- Review proposed modifications to the activity ID, activity code and work breakdown structure.
- Review other requirements of the specifications regarding Scheduling that are not specifically listed above.

The Engineer will review the Preliminary Baseline Schedule, proposed modifications, sample reports and other submittals and provide comments or required Baseline Schedule changes to the Contractor for implementation.

120326.04 SUBMITTAL OF A CPM SCHEDULE.

A. Baseline Schedule Submittals.

1. Beginning the week following the ~~Pre-construction~~ Scheduling Conference, the Contractor and the Contractor's ~~Qualified~~ Scheduler shall meet with the Engineer to review Baseline Schedule development and resolve issues identified by the Engineer's review of the submittals provided at the ~~Pre-construction~~ Scheduling Conference. The Baseline Schedule review meetings will continue to be held every 14 calendar days, unless determined otherwise by the Engineer, until the Baseline Schedule is accepted by the Engineer. The contractor shall submit a revised Baseline schedule 2 working days prior to the Baseline schedule review meetings.

2. The Contractor shall submit to the Engineer an acceptable Baseline Schedule ~~submittal~~ prior to the start of construction activities, but no later than ~~60~~ 45 calendar days from receipt of signed contract. Failure to provide an acceptable baseline schedule within ~~60~~ 45 calendar days of Receipt of signed contract will result in enforcement of Non-Compliance provisions within this specification.

3. The Baseline Schedule shall include the entire scope of work and how the Contractor plans to complete all Work contracted. The Baseline Schedule shall clearly show the activities that define the critical path. Multiple critical paths and near-critical paths shall be minimized by minimizing the number of predecessors and successor relationships between activities, illogical or redundant logic. A total of not more than 30% of the Baseline Schedule activities shall be critical or near critical, unless otherwise authorized by the Engineer.

4. The Baseline Schedule shall start and finish all work within the contract time(s) established in the contract documents, including but not limited to project start, project finish, intermediate contract periods and milestones, closure limitations, etc. Unless directed otherwise by the Engineer, the Baseline Schedule shall use a data date set to the projects late start date and shall not include progress or as-built updates. The Baseline Schedule shall not include negative float or utilize any other prohibited scheduling technique.

B. Contract Schedule Update Submittals.

1. Schedule updates shall be submitted each calendar month with a data date matching the progress through date of the first, or last, pay request of each month unless directed otherwise by the Engineer. The first schedule update shall be submitted as prescribed the first month following acceptance of the baseline schedule. Each monthly update shall be submitted within 5 working days of the schedule's data date. Progress meetings shall be scheduled by the ~~c~~Contractor ~~which~~ to correspond with the schedule submittals to review progress with the Engineer.

2. ~~Contract~~ Schedule updates shall include all elements defined for the Baseline Schedule except that a ~~Contract~~ Schedule shall include progress, as-built updates and updated actual units and cost for each activity, etc.

3. Each ~~Contract~~ Schedule shall show the status of work actually completed up to the data date and the work remaining to be performed as planned. The ~~Contractor shall ensure that the~~ CPM Schedule diagram shall accurately reflect~~s~~ "as-built" information for each activity shown on previous schedules, including, but not limited to, actual start dates (discounting early starts not representative of true as-built conditions), remaining days of work, percent complete, and actual finish dates (when the activities were completed so that dependent work could proceed) and actual resource utilization. Schedule calendars shall be updated to show actual days worked and days not worked.

4. ~~Contract~~ Schedule updates shall accurately represent all planning changes, adjustments, or updates in the sequencing and timing of work remaining ~~made or required to be made~~ to ensure that the ~~Contract~~ Schedule stays current with the Contractor's ~~revised~~ plan for performing and furnishing work remaining~~, or to recover schedule~~. If the ~~Contract~~ Schedule submittal indicates slippage or delayed progress ~~caused by delays failing to meet the requirements for extensions in Contract Time~~, the Contractor shall include a schedule recovery statement. ~~Any revisions made due to the issues covered under this paragraph shall be considered revisions made for the Contractor's convenience, and shall be excluded when reconciling an extension to a Milestone or Contract Time until the timing and sequences purported by those revisions actually take place.~~

5. The Contractor may propose modifications by adding or deleting activities or changing activity descriptions, durations or logic that do not (1) alter the critical path(s) or near critical path(s) or (2) extend the scheduled completion date compared to that shown on the current accepted ~~Contract~~ Schedule and (3) do not disrupt the integrity or comparative relationship between the Baseline and ~~Contract~~ Schedules. The Contractor shall ~~minimize the number of changes and state in writing within~~ provide written reasons in the update ~~narrative the reason and justification~~ for any changes to ~~Contract~~ Schedule or planned work. The Engineer shall review the justification for changes and either accept or reject the proposed modifications.

~~6.~~ If any proposed changes to the schedule or planned work will result in (1), (2) or (3) above, then the Contractor shall submit a time impact analysis as described herein.

7. The Contractor shall incorporate planning revisions, which have been agreed upon in Contract Changes ordered since the last revision. Those revisions shall conform to the sequencing and time of performance requirements of the applicable instrument. These types of revisions shall be included in the ~~Contract~~ Schedule when reconciling extensions in Contract Time.

8. If work is performed out of sequence, the Contractor shall implement logic changes to allow the out of sequence work to proceed. The use of negative lag shall not be permitted.

~~9. Monthly Update schedule shall include actual cost updates as required to facilitate earned value analysis.~~

C. Two Week Detail Schedule.

1. The Contractor shall prepare and submit a detailed 2 week schedule to the Engineer each bi-weekly until all work is completed. The Two Week Detail Schedule consist of the following:

2. Hand or computer generated bar chart schedule which spans a forward looking, rolling period of at least 14 calendar days from the date of submittal.

3. Updated and submitted to the Engineer on a be-weekly basis on the date at a time specified by the Engineer.

4. Based on the accepted ~~Contract~~ Schedule and provide a greater breakdown of the ~~Contract~~ Schedule activities; activities for excavation, forming, placing rebar, pouring, stripping backfilling, etc., for example.

5. Specifically reference the accepted ~~Contract~~ Schedule activity ID numbers and define subsequent specific daily operations at each specific location for all work activities scheduled to be performed during the 2 week period.

6. Developed to a level of detail acceptable to the Engineer.

D. Time Impact Analysis.

1. The Contractor shall submit a written TIA to the Engineer with each request for an adjustment of Contract time, when ~~the Contractor or Engineer consider that~~ an accepted or anticipated change may impact the critical path or Contract progress ~~or when directed by the Engineer. The Contractor shall take all steps necessary to mitigate the effects to cost and, or time resulting from impacts caused by delay regardless of who is found responsible for the delay~~.

2. The TIA shall illustrate the impacts of each change or delay on the current scheduled completion date or internal milestone, as appropriate. The analysis shall use the accepted ~~Contract~~ Schedule that has the closest data date prior to the event. If the Engineer determines that the accepted ~~Contract~~ Schedule used does not appropriately represent the conditions prior to the event, the accepted ~~Contract~~ Schedule shall be updated to the day before the event being analyzed. The TIA shall include an impact schedule developed from incorporating the event into the accepted ~~Contract~~ Schedule by adding or deleting activities, or by changing durations or logic of existing activities. If the impact schedule shows that incorporating the event modifies the critical path and scheduled completion date of the accepted ~~Contract~~ Schedule, the difference between scheduled completion dates of the two schedules may be considered for an adjustment of Contract time. The Engineer may construct and utilize an appropriate project schedule or other recognized method to determine adjustments in Contract time until the Contractor provides the TIA.

3. The Contractor shall submit a TIA in duplicate within 15 calendar days of receiving a request for a TIA from the Engineer. The Contractor shall allow the Engineer 15 calendar days after receipt to accepted or reject the submitted TIA. All accepted TIA schedule changes shall be shown on the next updated ~~Contract~~ Schedule.

4. If a TIA submitted by the Contractor is rejected by the Engineer, the Contractor shall meet with the Engineer to discuss and resolve issues related to the TIA. The Contractor shall only show actual as-built work, not unaccepted changes related to the TIA, in subsequent

updated ~~Contract~~ Schedules. If agreement is reached at a later date, accepted TIA schedule changes shall be shown on the next update ~~Contract~~ Schedule.

5. A time impact analysis shall consist of one or all of the steps listed below:
   a. Step 1. Establish the status of the project before the impact using the most recent approved ~~Contract~~ Schedule prior to the impact occurrence.
   b. Step 2. Predict the effect of the impact on the most ~~Contract~~ Schedule prior to the impact occurrence. This requires estimating the duration of the impact and inserting the impact into the schedule update. The Contractor shall demonstrate how the impact was inserted into the schedule using a fragment. This is the presentation of a fragmentary portion of the schedule network showing the added or modified activities and the added or modified relationships. Any other changes made to the schedule including modifications to the calendars or constraints shall be noted.
   c. Step 3. Track the effects of the impact on the schedule during its occurrence. Note any changes in sequencing, and mitigation efforts.
   d. Step 4. Compare the status of the work prior to the impact (Step 1) to the prediction of the effect of the impact (Step 2), and to the status of the work during and after the effects of the impact are over (Step 3).

E. Submittal Requirements.

1. The Contractor shall provide the following items with each schedule submittal; preliminary, baseline, update, time impact, or revised schedule submittal in electronic format:
   a. Schedule plot which includes all activities organized by WBS in PDF format.
   b. Schedule plot of the longest path in PDF format.
   c. An export of all schedule data in XER format compatible with Primavera Project Manager Version P8.2
   d. Narrative Report

2. Schedule plots shall conform to the following:
   a. Include the following columns in the following order: Activity ID, Activity Name, Original Durations, Remaining Duration, Early Start, Early Finish, Total Float, Budgeted Cost, Actual Cost This Period, Actual Cost to Date.
   b. Include a title block, schedule name, run date, data date and a timeline on each page.
   c. Sorted by Early Start.

3. ~~The narrative report shall include a description of, and thorough justification, for all changes made to the current Schedule submittal, and the effects resulting from such changes, when compared to the previous schedule submittal. The narrative report shall be prepared in a consistent and professional manner which facilitates ease of use. The narrative report shall include a table of contents with page numbers. All pages, lists, charts and attachments shall be numbered and titled.~~ The narrative report shall be organized and tabbed in the following sequence and include all applicable and appropriate supporting documentation including, but not limited to:
   a. Contractor's transmittal letter.
   b. Narrative description ~~of the construction philosophy~~ supporting the approach to the Work outlined in the Contract Schedule.; ~~Address~~ including reasons for the sequencing of Work, ~~and describe any~~ problem areas, ~~and identification of~~ unusual conditions, ~~or~~ restrictions regarding labor, equipment or material, ~~such as multiple shifts, specified overtime or work at times other than regular days,~~ potential conflicts, and other ~~salient~~ items that may affect the schedule and how they may be resolved.
   c. Narrative description of the general status of the Project including Work completed during the period, Work planned to be completed during the next reporting period, current total float and ~~validity of the~~ calculated percent complete.
   d. Narrative description of the difference between previously planned Work and the

actual Work performed ~~including an explanation for the deviations~~.

e. The working days per week, number of shifts per day, number of hours per shift, the holidays to be observed, and how the schedule accommodates adverse weather days for each month or activity.
f. Planned Production rates with justification of rates above or below typical.
g. A listing of activity durations exceeding the 20 working days with justification thereof.
h. A list of activity relationships with lags with justification for use of the lag.
i. A list of constrained activities with a justification for use of the constraint.
j. Activities requiring coordination with the Department and/or 3rd parties (i.e. Utilities, adjacent contractors, etc)
k. Schedule changes - A listing of all changes, and a narrative description of the reason or justification for the changes and the resulting affects or impact of the changes:
   - Added, deleted or modified activities and activity descriptions.
   - Added, deleted or modified date constraints.
   - Added, deleted or modified lags.
   - Added, deleted or modified logic.
   - Added, deleted or modified calendars.
   - Modified activity durations.
   - Significant changes in float.
l. Narrative description of the current longest path.
m. Comparative analysis of changes to the longest path with the previous schedule submittal, including identification of and justification for the cause of the changes.
n. Changes to the scheduled completion date since the last ~~Contract~~ Schedule submittal including identification of and justification for the cause of the change.
o. Current and anticipated delays:
   - Cause of delay.
   - Impact of delay on other activities, milestones and completion dates.
   - Corrective action and schedule adjustments to correct the delay.
p. Pending items and status thereof:
   - Permits
   - Contract changes
   - Time adjustments
   - Time Impact Analysis
q. Cost information:
   - Include a listing and justification for adjustments to cost loading.
   - Comparison of schedule cost loading~~, updated cost actual information~~ and current pay application.

~~r. Additional Information as request by the Engineer.~~

s. A statement certifying the schedule submittal is based on factual, accurate information which represents true planned and as-built conditions accompanied with the signature of the Project Manager and Scheduler.

Schedule submittals will be considered complete when all documents and data have been provided as described above to the satisfaction of the Engineer.

120326.05 SCHEDULE REVIEWS.

A. The Engineer's review will be for conformance with the Contract Time and those sequences of Work indicated in or required by the Contract Documents, to record Early and Late Dates for Milestones, to identify the Contractor's use of Float, to compare as-built data, and for conformance with the requirements of this ~~Section~~ Special Provision and other information given in the Contract Documents which may have a bearing on the ~~Contract~~ Schedule. The Engineer's review may extend to the accuracy of other matters dealt with by the ~~Contract~~ Schedule, including, but not limited to, whether work is omitted, activity durations are reasonable, the level of labor, materials and equipment, the Contractor's means, methods, techniques, procedures,

or sequences of construction, or whether the sequences and timing for work remaining are practicable, the correctness of all which shall remain the sole responsibility of the Contractor. The Engineers review may also extend to the technical acceptability of the ~~Contract~~ Schedule submittal.

B. The Contractor shall allow 7 working days for the Engineer's review after each ~~Contract~~ Schedule update and all support data are submitted, except that the review period shall not start until the previous month's ~~Contract~~ Schedule update submittal is accepted. ~~Contract~~ Schedules that are not accepted or rejected within the review period will be considered not accepted by the Engineer.

C. The Engineer's review and acceptance of Schedules shall not waive any Contract requirements and shall not relieve the Contractor of any obligation or responsibility for submitting complete and accurate information. Schedules that are not approved, rejected, or returned revise and resubmit shall be corrected by the Contractor and resubmitted to the Engineer within 5 working days of notification.

D. When reviewed by the Engineer, one copy of each ~~Contract~~ Schedule submittal will be returned to the Contractor as either "Revise and Resubmit" or "Acceptable". Submittals found "Acceptable" will represent the most-current ~~Contract~~ Schedule as of the date of the submittal. Neither the Engineer's review of a schedule, nor the Engineer's statement of "Acceptable", will relieve the Contractor from responsibility for complying with the Contract Specifications, Contract Time requirements and completing all work required by the Contract Documents. Failure by the Contractor to include any element of the Work required by the Contract does not relieve the Contractor from its responsibility to complete the work, or to complete the omitted Work within the Contract Time(s). "Acceptance" of the ~~Contract~~ Schedule submittals by the Engineer does not attest to the validity of assumptions, production rates, activities, relationships, sequences, resource allocations or any other aspect of the ~~Contract~~ Schedule submittal. ~~Contract~~ Schedule submittals determined to be "Acceptable" by the Engineer may be reviewed again for "Acceptability" at a later date, if deemed necessary by the Engineer. The Contractor remains obligated to correct schedule issues identified during future reviews by the Engineer.

E. The Contractor shall make appropriate adjustments or corrections in a ~~Contract~~ Schedule submittal returned to him as "Revise and Resubmit", and shall respond with the required copies of a full, revised ~~Contract~~ Schedule revision submittal within 5 working days of receipt of the Engineer's comments. Once the Contractor's ~~Contract~~ Schedule submittal, or resubmittal, is returned to the Contractor as "'Acceptable", it shall represent the most current approved ~~Contract~~ Schedule for the Work as of the date of the submittal, and it shall be the basis for the monitoring of the Contractor's performance and progress.

F. The most-current ~~Contract~~ Schedule will be the basis for (a) the monitoring of the Contractor's progress against Milestone and Contract Times, and (b) the evaluation and reconciliation of extensions in Contract Time, if and when a Contract Time is indeed extended.

G. All schedules shall be in accordance with the Contract Time requirements of the Contract. Nothing contained in this Section shall relieve the Contractor from compliance with the Contract Time.

H. The Engineer's acceptance does not warrant or imply accuracy or Iowa DOT agreement with production rates or other factors used to prepare the Schedule.

I. The Engineer may monitor the Contractor's production rates, project personnel and equipment usage for comparison with the Contract Schedule at his/her discretion.

J. Should the Contractor submit a claim with reference to the ~~Contract~~ Schedule as part of the

claim rationale, Iowa DOT's prior acceptance of the Schedule will not be considered as acceptance of the assumed production rates and other factors used in the development of the Schedule.

~~K. If the Contractor deviates from the current approved CPM progress schedule by not following the logical sequence of the critical path, payment will be withheld for the pay items for the affected activities until the Contractor submits a revised CPM progress schedule and this schedule is approved by the Engineer.~~

~~L. A revised CPM progress schedule will be required if the controlling operation falls 10 working days behind schedule, the Engineer then may take steps specified in Articles 1108.02, I and K of the Standard Specifications, to insure satisfactory completion of the project. If the controlling operation falls 20 working days behind schedule and it appears that the completion of the project in the specified time is in jeopardy, the Contracting Authority may take action described in Articles 1102.03 and 1103.01 of the Standard Specifications and may take further action described in Articles 1108.10 and 1108.11 of the Standard Specifications.~~

~~M. If the Engineer elects to review an early completion Schedule, where the time between the scheduled completion date of the work and the completion date associated with the Contract Time is Float. If the Contractor intends to or does complete the work, or any portion of the work, earlier than the Milestones, the Project benefits from the resulting increased Float in the Schedule.~~

N. The review of a portion of the ~~Contract~~ Schedule or an incomplete ~~Contract~~ Schedule submittal shall not indicate acceptance of the entire ~~Contract~~ Schedule.

120326.06 PROJECT MANAGEMENT

When the Supplemental Specifications for Project Management are applied, the following requirements shall be active:

A. Communication with the Engineer: The Project Manager shall schedule and participate in a bi-weekly schedule and quantity rectification meeting with the Engineer. This meeting will occur at the beginning of each week of voucher issuance.

B. Documentation of Item Progress: Schedule Activity ID shall be included for all item quantity records and measurement.

120326.07 NONCOMPLIANCE.

A. ~~Level 1~~ Non-Compliance – Iowa DOT will remedy the nonconformance by retaining an amount equal to 100% of the total estimated value of the work performed during each period in which the Contractor fails, refuses or neglects to satisfy the requirements of this specification, or the Contract Schedule submittals precludes a proper evaluation by the Engineer, or the Contract Schedule submittals preclude an "Acceptable" determination, or if the Contractor fails to conform said submittals within the submittal time requirements herein. Retention due to this non-conformance shall be in addition to all other retentions provided for under the Contract. The retention withheld for ~~Level 1~~ Non-Compliance will be released for payment on the next pay estimate for partial payment following the date the Engineer determines compliance has been achieved and, or the submittal(s) are found Acceptable.

~~B. Level 2 Non-Compliance – If the Engineer determines that Level 1 Non-Compliance still exists and, or the submittals cannot be found Acceptable within 15 calendar days of implementation of Level 1 Non-Compliance, the Contractor shall be assessed a non-recoverable sum of $1,000.00 per calendar day, with said monies to be deducted from monies due on the next pay estimate, until the date the Engineer determines compliance has been achieved and, or the submittal(s) are found Acceptable. Level 2 Non-Compliance penalties shall be in addition to the~~

~~Level 1 Non-Compliance - retention. A negative Change order may be executed unilaterally (without the Contractor's consent) to adjust the contract prices to accommodate Level 2 Non-compliance assessment.~~

C. ~~Level 3 Non-Compliance - If Level 1 and 2 Non-compliance measures have not promoted compliance with the schedule requirements the Engineer may consider such as a condition to suspend Contractor's bidder qualification according to Article 1102.03, A of the Standard Specifications.~~

D. ~~Level 4 Non-Compliance - If Level 1, 2 and 3 Non-compliance measures have not promoted compliance with the schedule requirements the Engineer may pursue declaring the contract in default according to Article 1108.10 of the Standard Specifications.~~

E. ~~These remedies for the Contractor's failure, neglect or refusal to comply with the requirements of this Section are in addition to, and not in limitation of, those provided under the Contract.~~

F. Progress & Performance – If the project falls 15 calendar days behind schedule, the Engineer may take steps specified in Article 1108.02, I, of the Standard Specifications to suspend the Contractor's bidding qualifications. If the Contractor fails to take action within 14 calendar days, the Engineer may take steps specified in Article 1108.10 of the Standard Specifications to declare the contract in default.

120326.10 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

All costs for complying with this special provision shall be considered incidental to the project. No separate payment will be made.