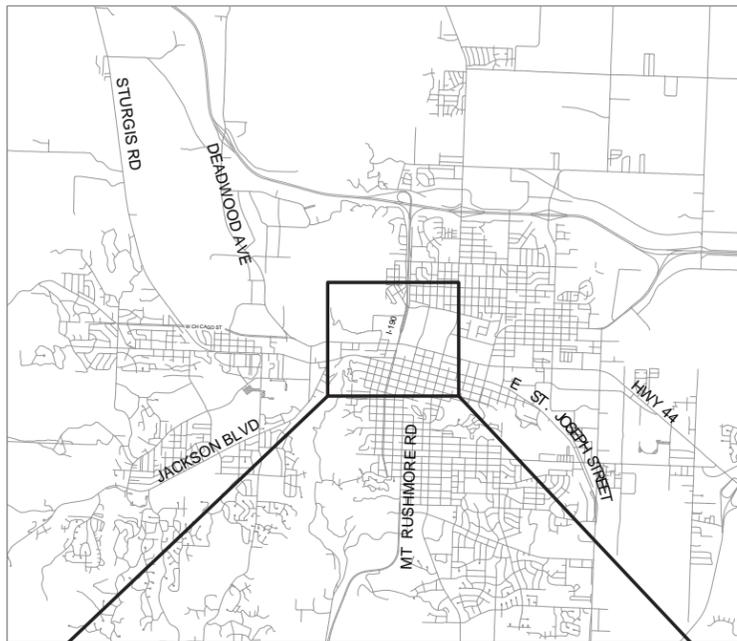




# OMAHA STREET/WEST BOULEVARD INTERSECTION RECONSTRUCTION - UTILITIES

CITY OF RAPID CITY PROJECT NO. 14-2097 CIP # 50955 PCN X02V  
IN CONJUNCTION WITH SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION PROJECT PH 1902(65)0 PCN 03AZ

CITY OF RAPID CITY, SOUTH DAKOTA



**PROJECT LOCATION MAP** NOT TO SCALE

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I, DAVE MUCK, CERTIFY THAT I HAVE READ AND UNDERSTAND THE PROVISIONS CONTAINED IN THE CITY OF RAPID CITY STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION AND THE CITY OF RAPID CITY'S ADOPTED DESIGN CRITERIA MANUALS. THE DRAWINGS AND SPECIFICATIONS CONTAINED HERE WITHIN, TO THE BEST OF MY KNOWLEDGE, WERE PREPARED IN ACCORDANCE WITH THESE DOCUMENTS OR A PROPERLY EXECUTED EXCEPTION TO THE STANDARD SPECIFICATIONS AND INFRASTRUCTURE DESIGN CRITERIA MANUAL HAS BEEN SECURED

DAVID M. MUCK, PE/LS, CFM \_\_\_\_\_ DATE \_\_\_\_\_



**City of Rapid City**  
PUBLIC WORKS ENGINEERING SERVICES  
300 SIXTH STREET  
RAPID CITY, SD, 57701  
(605) 394 4154

APPROVED \_\_\_\_\_

PROJECT MANAGER \_\_\_\_\_ DATE \_\_\_\_\_



FOR BIDDING PURPOSES ONLY

Revised 12-18-13 DMM

ESTIMATE OF QUANTITIES				
ITEM	SDDOT BID ITEM NUM	DESCRIPTION OF ITEM	QUANTITY	UNIT
1	009E0010	Mobilization	Lump Sum	LS
2	009E1010	Incentive Pay	Lump Sum	LS
3	009E3200	Construction Staking	Lump Sum	LS
4	110E0460	Remove Manhole	1	Each
5	110E1010	Remove Asphalt Concrete Pavement	6.2	SqYd
6	110E1100	Remove Concrete Pavement	205.3	SqYd
7	250E0010	Incidental Work	Lump Sum	LS
8	260E1010	Base Course	2.1	Ton
9	260E2010	Gravel Cushion	69.3	Ton
10	320E1200	Asphalt Concrete Composite	1.8	Ton
11	380E0090	10" Nonreinforced PCC Pavement	204.0	SqYd
12	380E1000	6" Miscellaneous PCC Pavement	1.3	SqYd
13	380E6000	Dowel Bar	530	Each
14	451E1012	12" PVC Sewer Pipe	290	Ft
15	451E4901	Type 1 Bedding Material	50.0	Ton
16	451E4903	Type 2 Foundation Material	50.0	Ton
17	451E4904	Type 3 Foundation Material	50.0	Ton
18	451E4912	Controlled Low Strength Backfill	100.0	CY
19	451E5052	Trench 8' to 10' Deep	49	Ft
20	451E5053	Trench 10' to 12' Deep	117	Ft
21	451E5054	Trench 12' to 14' Deep	42	Ft
22	451E5055	Trench 14' to 16' Deep	31	Ft
23	451E5056	Trench 16' to 18' Deep	44	Ft
24	451E5057	Trench 18' to 20' Deep	7	Ft
25	451E5195	Pipe Bursting	338	Ft
26	451E7010	Reconnect Sewer Service	1	Each
27	451E7016	Connect to Existing Sewer Main	1	Each
28	451E7020	Sewer Bypass Pumping	Lump Sum	LS
29	634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
30	671E1048	48" Manhole	2	Each
31	671E5510	Extra Depth For 48" Manhole	7.8	Ft
32	671E7020	Connect Into Existing Manhole	1	Each
33	671E8000	Reconstruct Manhole	1	Each
34	671E9005	Abandon Manhole	1	Each
35	730E0251	Special Permanent Seed Mixture 1	48	Lb
36	731E0100	Fertilizing	48	Lb
37	732E0100	Mulching	0.5	Ton
38	734E0154	12" Diameter Erosion Control Wattle	150	Ft
39	900E1320	Construction Entrance	1	Each

MANHOLE NO.	MANHOLE SIZE	STATION	RIM ELEV.	INVERT OUT	DEPTH	EXTRA VF
2-2	48"	2+75.95	3238.85	3229.30	9.55	3.5
2-3	48"	6+12.51	3234.17	3223.89	10.28	4.3

MANHOLE NO.	STATION	OFFSET	MANHOLE MODIFICATION
2-1	1+50.00	- 0.5' RT	RECONSTRUCT MANHOLE (SEE GENERAL NOTE)

PROPOSED LEGEND

	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
	SANITARY SEWER LINE
	SANITARY SEWER SERVICE
	ABANDON SANITARY SEWER LINE
	PROPOSED SDDOT STORM SEWER

	BOREHOLE
	CABLE TV OR TELEPHONE RISER
	ELECTRICAL JUNCTION BOX
	FIBER OPTIC VAULT
	BLACK HILLS FIBER
	DECIDUOUS TREE
	CONIFEROUS TREE
	DECIDUOUS HEDGE/TREE LINE
	CONIFEROUS HEDGE/TREE LINE
	DECIDUOUS BUSH
	CONIFEROUS BUSH
	STUMP
	2 POLE SIGN
	1 POLE SIGN
	POST / BOLLARD
	FIRE HYDRANT
	MONITORING WELL
	CURB STOP
	IRRIGATION CONTROL VALVE
	GATE VALVE
	WATER MANHOLE
	TELEPHONE MANHOLE
	STORM SEWER MANHOLE
	SANITARY SEWER MANHOLE
	CLEAN OUT
	GAS METER
	CONTROL POINT
	RIGHT-OF-WAY MARKER
	ELECTRICAL MANHOLE
	LIGHT POLE
	GUY WIRE ANCHOR

	POWER POLE
	TYPE "S" INLET
	TYPE "B" INLET
	MAILBOX
	DELINEATOR
	EXISTING GRAVEL
	EXISTING CURB AND GUTTER
	SANITARY SEWER LINE
	FOR PIPES 18" AND LARGER
	FOR PIPES 18" AND LARGER
	WATER LINE
	FOR PIPES 18" AND LARGER
	WATER SERVICE LINE
	TELEPHONE LINE
	OVERHEAD LINES (POWER, CABLE, ETC)
	POWER LINE
	GAS LINE
	FIBEROPTIC LINE
	CABLE TV LINE
	CHAINLINK FENCE
	BARBED WIRE FENCE
	WOOD FENCE
	BUILDING LINE
	PROPERTY LINE
	SECTION LINE
	EASEMENT LINE
	MAJOR CONTOUR
	MINOR CONTOUR



**WATER AND SANITARY SEWER GENERAL NOTES**

**PROJECT DESCRIPTION**

THIS PROJECT IS THE RECONSTRUCTION OF SANITARY SEWER MAIN AND MANHOLES IN WEST BOULEVARD FROM WEST RAPID STREET TO THE CITY'S TRUNK SEWER MAIN ON THE NORTH SIDE OF OMAHA STREET. THIS PROJECT INCLUDES 312 LINEAL FEET OF OPEN CUT SANITARY SEWER MAIN INSTALLATION, 316 LINEAL FEET OF PIPE BURSTING SANITARY SEWER MAIN INSTALLATION, ASSOCIATED PRECAST CONCRETE MANHOLES AND SURFACE RESTORATION. THIS PROJECT IS TO BE CONSTRUCTED IN CONJUNCTION WITH SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION PROJECT PH 1902(65)0 PCN 03AZ.

**UTILITIES**

THE INFORMATION ON THESE DRAWINGS CONCERNING THE TYPE, SIZE, AND LOCATION OF UTILITIES HAS BEEN SHOWN BASED UPON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES IN PLACE.

CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS WITH THE UTILITY COMPANIES. ELECTRIC, TELEPHONE, TELEVISION, FIBER AND GAS UTILITIES MAY BE ADJUSTED AND/OR RELOCATED BY THE RESPECTIVE UTILITY COMPANIES.

THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO BIDDING THIS PROJECT SO THAT THEY ARE AWARE OF THEIR RELOCATION / ADJUSTMENT / OR INSTALLATION REGARDING THIS PROJECT; AND INCLUDE ANY NECESSARY IMPACT TO THE SCHEDULE THEY INTEND TO FOLLOW. ANY CONFLICTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND UTILITY TO RESOLVE AT NO COST IN TIME OR MONEY TO THE CITY.

**UTILITIES:**

SOUTH DAKOTA ONE CALL  
1-800-781-7474

(ELECTRIC)	(TELEPHONE)
BLACK HILLS POWER AND LIGHT	CENTURY LINK
409 DEADWOOD AVENUE	(800) 573-1311
(605) 721-3200	

(TELEPHONE-TELEVISION)	(GAS)
WOW	MONTANA-DAKOTA UTILITIES
809 DEADWOOD AVENUE	718 STEELE AVENUE
(605) 721-2000	(605) 342-0160

(TELEPHONE-TELEVISION)	(SEWER, WATER)
MIDCONTINENT COMMUNICATIONS	CITY OF RAPID CITY
1301 W. OMAHA STREET SUITE 106	605 STEELE AVENUE
(800) 888-1300	(605) 394-4163

(SIGNAL, STREET LIGHTS)  
CITY OF RAPID CITY  
TRAFFIC OPERATIONS  
760 CENTRE STREET  
(605) 394-4118

**PROJECT SPECIFICATIONS**

ALL UTILITY WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF RAPID CITY STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2007 EDITION WITH ALL CURRENT UPDATES, EXCEPT AS MODIFIED IN THE BID DOCUMENTS.

ALL PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES 2004 EDITION.

**RECORD DOCUMENTS**

SPECIFICATIONS OUTLINING THE CONTRACTORS RESPONSIBILITIES ARE PROVIDED IN SECTION 01780 OF THE DETAILED SPECIFICATIONS.

**PROJECT ACCEPTANCE AND WARRANTY PERIOD**

THE WARRANTY PERIOD FOR THIS PROJECT SHALL CONFORM TO SECTION 7.65 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS FOR PUBLIC WORKS, 2007 EDITION AND ALL OF ITS UPDATES.

**CONSTRUCTION LIMITS**

IN GENERAL, THE CONSTRUCTION LIMITS FOR THE PROJECT SHALL BE DEFINED AS FOLLOWS: PROPERTY LINES, RIGHT-OF-WAY LINES, EXISTING UTILITY EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT LINES SHALL BE THE CONSTRUCTION LIMITS UNLESS INDICATED OTHERWISE ON THE DRAWINGS OR FURTHER DEFINED HEREIN. CONSTRUCTION ACTIVITIES SHALL BE RESTRICTED TO THE CONSTRUCTION LIMITS UNLESS PRIOR APPROVAL IS RECEIVED FROM THE ENGINEER. USE OF CITY LANDS FOR STAGING AREAS, MATERIAL STORAGE, SEDIMENTATION PONDS, DEWATERING, AND/OR TOPSOIL STOCKPILING SHALL ONLY BE WITH PRIOR APPROVAL FROM THE OWNER. ANY DAMAGES AND RESTORATION OUTSIDE THE CONSTRUCTION LIMITS SHALL BE AT THE CONTRACTOR'S EXPENSE.

**CONTRACTOR FURNISHED STAKING**

ALL STAKING ON THE PROJECT WILL BE BY THE CONTRACTOR IN ACCORDANCE WITH THE CITY OF RAPID CITY STANDARD SPECIFICATIONS. PAYMENT FOR CONTRACTOR FURNISHED STAKING WILL BE AT THE CONTRACT LUMP SUM PRICE FOR "CONSTRUCTION STAKING". DIGITAL FILES WILL NOT BE AVAILABLE TO THE CONTRACTOR.

**PERMITS**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THIS PROJECT INCLUDING, BY NOT LIMITED TO, THE FOLLOWING:

1. COVERAGE UNDER THE SDDENR GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES;
2. SDDENR DEWATERING PERMIT - GENERAL PERMIT TO DISCHARGE UNDER THE SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM FOR TEMPORARY DISCHARGE ACTIVITIES IN SOUTH DAKOTA;
3. CITY OF RAPID CITY RIGHT TO WORK PERMIT;
4. CITY OF RAPID CITY AIR QUALITY PERMIT;
5. CITY OF RAPID CITY EROSION AND SEDIMENT CONTROL PERMIT;

ANY FEES ASSOCIATED WITH CITY PERMITS SHALL BE PAID FOR BY THE CITY.

**CONSTRUCTION SCHEDULE**

THE SANITARY SEWER MAIN SHALL BE CONSTRUCTED AND COMPLETED DURING PHASE 1 OF THE SDDOT'S CONSTRUCTION PROJECT. AN EXAMPLE OF CONSTRUCTION SEQUENCING HAS BEEN PROVIDED WITHIN THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR PREPARING AND SUBMITTING A CONSTRUCTION SCHEDULE AS PART OF THIS PROJECT.

**STOCKPILED MATERIALS**

PAYMENT FOR STOCKPILED MATERIALS WILL ONLY BE CONSIDERED FOR PIPE, MANHOLES, AND FITTINGS. NO ADDITIONAL ACCOMMODATIONS WILL BE MADE. REQUESTS FOR PAYMENT FOR STOCKPILED MATERIALS SHALL BE ACCOMPANIED BY INVOICES WITH THE RESPECTIVE BID ITEM NUMBER INDICATED FOR EACH INDIVIDUAL STOCKPILED MATERIAL. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PREPARING AND SUBMITTING DOCUMENTATION IN THE FORM AND FORMAT REQUIRED BY THE ENGINEER AND OWNER TO BE CONSIDERED FOR PAYMENT.

**WASTE DISPOSAL SITE**

THE CONTRACTOR WILL BE REQUIRED TO FURNISH A SITE FOR THE DISPOSAL OF CONSTRUCTION/DEMOLITION DEBRIS GENERATED BY THIS PROJECT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. CONSTRUCTION DEBRIS MAY NOT BE DISPOSED OF WITHIN THE RIGHT-OF-WAY OR EASEMENTS.

**PIPELINE ENCASEMENT**

WHERE INDICATED ON PLANS OR REQUIRED BY STANDARD SPECIFICATIONS PIPE SHALL BE ENCASED WITH CONTROLLED LOW STRENGTH BACKFILL. ENCASEMENTS SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 8.3 OF THE STANDARD SPECIFICATIONS. REFER TO CONTROLLED LOW STRENGTH BACKFILL NOTE.

**EXPLORATORY EXCAVATION**

THE CONTRACTOR SHALL PROVIDE EXPLORATORY EXCAVATION AS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT. NO SEPARATE PAYMENT WILL BE MADE FOR EXPLORATORY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY WORK TO COMPLETE THIS PROJECT.

**CONTROLLED LOW STRENGTH BACKFILL**

UNDER SOME CIRCUMSTANCES, CONTROLLED LOW STRENGTH MATERIAL MAY BE REQUIRED FOR SUPPORT AND OTHER STRUCTURAL REASONS. UNDER THESE SITUATIONS, THE CONTROLLED LOW STRENGTH MATERIAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "CONTROLLED LOW STRENGTH BACKFILL". THE USE OF CONTROLLED LOW STRENGTH BACKFILL SHALL BE AUTHORIZED BY THE ENGINEER PRIOR TO PLACEMENT.

**EXISTING UTILITY CROSSINGS**

SIGNIFICANT EFFORT HAS BEEN PUT FORTH TO PROVIDE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES IN THESE PLANS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES. ANY DISTURBANCE ASSOCIATED WITH VERIFICATION REQUIRES IN-KIND SURFACE RESTORATION AND SHALL BE INCIDENTAL TO THE PROJECT. REFER TO THE STANDARD SPECIFICATIONS FOR CROSSING OF EXISTING STORM SEWERS, SANITARY SEWER, WATER MAINS, AND WATER MAIN LOWERINGS. AT ALL LOCATIONS WHERE THE PROPOSED UTILITY IMPROVEMENT CROSSES OR IS ADJACENT TO EXISTING UTILITIES THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE EXISTING UTILITY TO ENSURE THAT THEY ARE NOT DISTURBED DURING THE WORK. TEMPORARY STRUCTURAL SUPPORT FOR THE UTILITIES MAY BE REQUIRED. NO SEPARATE PAYMENT SHALL BE MADE FOR GROSSED UTILITY PROTECTION. ANY REPAIR WORK NECESSARY TO A GROSSED UTILITY RESULTING FROM THE CONTRACTOR'S ACTIVITY SHALL BE AT THE CONTRACTOR'S EXPENSE.

**TESTING**

ALL UTILITY TESTING ON THE PROJECT SHALL BE IN ACCORDANCE WITH THE RAPID CITY STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION CURRENT EDITION WITH THE FOLLOWING EXCEPTION. THE MODIFIED PROCTOR SOIL COMPACTION TESTS (AASHTO T180) REQUIRED FOR SOILS WITHIN THE WORK LIMITS WILL BE COMPLETED BY THE ENGINEER OR HIS DESIGNATED REPRESENTATIVE AND ARE NOT THE RESPONSIBILITY OF THE CONTRACTOR.

BASE COURSE AND PAVEMENT TESTING SHALL BE IN ACCORDANCE WITH THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES 2004 EDITION.

**REMOVAL OF CONCRETE, CONCRETE SIDEWALK, CURB AND GUTTER, ETC.**

ALL ITEMS CALLED OUT FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF AT THE APPROVED CONTRACTOR FURNISHED DISPOSAL SITE. COSTS FOR ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORT AND DISPOSAL SHALL BE PART OF THE RESPECTIVE REMOVAL BID ITEMS.

PLANS QUANTITY WILL BE THE BASIS FOR PAYMENT FOR REMOVAL ITEMS UNLESS CHANGES ARE DIRECTED BY THE ENGINEER DURING CONSTRUCTION. IF CHANGES ARE DIRECTED, THE ACTUAL QUANTITIES REMOVED WILL BE MEASURED BY THE ENGINEER AND WILL BE PAID FOR AT THE UNIT PRICES UNDER THE RESPECTIVE REMOVAL BID ITEMS.

**WATER FOR COMPACTION OF GRANULAR MATERIAL**

WATER FOR COMPACTION OF GRANULAR MATERIAL SHALL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR THE VARIOUS GRANULAR MATERIALS.

**TRENCH BACKFILL**

ALL TRENCH BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 11 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

**WATER AND SEWER MAIN UTILITY SEPARATION**

ALL PROPOSED WATER AND SEWER MAINS THAT ARE VERTICALLY SEPARATED BY 12-INCHES OR LESS FROM OTHER UTILITIES, EXISTING OR PROPOSED, SHALL BE PHYSICALLY SEPARATED FROM THE OTHER UTILITY BY 2-INCH THICK POLYSTYRENE BOARD, UNLESS OTHERWISE SPECIFIED FOR ENCASEMENT.

PAYMENT FOR POLYSTYRENE BOARD SHALL BE INCIDENTAL TO THE WATER AND SEWER MAIN BID ITEMS AND NO SEPARATE PAYMENT WILL BE MADE.

**FOR BIDDING PURPOSES ONLY**

 <b>PLOTTING DATE:</b>	 12/11/13	<b>PROJECT</b> OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	<b>SHEET NO.</b> 1.2	<b>TOTAL SHEETS</b> 24
		GENERAL NOTES		

**SANITARY SEWER MAIN**

UNLESS OTHERWISE NOTED, ALL DIRECT BURY SANITARY SEWER MAIN SHALL CONFORM TO ASTM D3034 PER SECTION 9 OF THE STANDARD SPECIFICATIONS.

THESE PLANS REQUIRE THE USE OF C-900, DR18 PVC WATER PIPE BETWEEN MH 2-1 AND MH 2-2 FOR CONFORMANCE TO THE REQUESTED SDDENR SEPARATION WAIVERS. THE C-900 PIPE USED FOR SANITARY SEWER MAIN SHALL BE GREEN IN COLOR. TESTING OF THE PIPE MATERIALS SHALL CONFORM TO SECTION 9 OF THE STANDARD SPECIFICATIONS.

INSTALLATION OF THE SANITARY SEWER MAINS SHALL BE IN ACCORDANCE WITH SECTION 9 OF THE STANDARD SPECIFICATIONS. PAYMENT SHALL BE MADE AT THE UNIT BID PRICE FOR THE SIZE AND DEPTH OF SANITARY SEWER MAIN PROVIDED IN THESE PLANS AND IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

**CONNECT TO EXISTING SANITARY SEWER**

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION OF THE EXISTING SANITARY SEWER MAIN AT THE PROPOSED CONNECTION TO EXISTING LOCATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INFORM THE ENGINEER OF LOCATION AND ELEVATION PRIOR TO CONSTRUCTION OF THE SANITARY SEWER MAIN AND MANHOLES REQUIRED TO CONNECT TO THE EXISTING SANITARY SEWER MAIN. ALL WORK NECESSARY TO DETERMINE THE LOCATION OF THE EXISTING SANITARY SEWER MAIN SHALL BE INCIDENTAL TO THE CONTRACT BID ITEM "CONNECT TO EXISTING SANITARY SEWER MAIN".

CONNECTING TO EXISTING SANITARY SEWER MAIN SHALL BE COMPLETED PER THE SPECIAL DETAIL LOCATED WITHIN THIS PLAN SET. TEMPORARY CONNECTIONS TO THE EXISTING SANITARY SEWER TO ACCOMMODATE CONSTRUCTION ARE THE CONTRACTOR'S DECISION AND WILL NOT BE PAID AS CONNECTION TO EXISTING SEWER MAIN. TEMPORARY CONNECTIONS ARE INCIDENTAL TO THE PROJECT.

ALL LABOR AND MATERIALS NECESSARY FOR CONNECTING TO EXISTING SEWER MAIN SHALL BE INCLUDED IN THE BID ITEM "CONNECT TO EXISTING SEWER MAIN" AND PAID FOR AT THE CONTRACT UNIT PRICE PER EACH.

**SANITARY SEWER MANHOLES**

MANHOLES SHALL BE PRECAST AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

MANHOLE FRAME AND GRATES SHALL BE IN ACCORDANCE WITH SECTION 9 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

MANHOLE FRAME AND GRATES, PRECAST MANHOLE PIECES AND PARTS, LABOR, EQUIPMENT, ETC. NECESSARY TO INSTALL SANITARY SEWER MANHOLES SHALL BE INCLUDED IN THE CONTRACT BID ITEM PER EACH FOR "48" MANHOLE".

**SANITARY SEWER SERVICE**

KNECHT'S SANITARY SEWER SERVICE WAS RECONNECTED DURING THE WEST BOULEVARD SANITARY SEWER PROJECT COMPLETED IN THE SPRING OF 2013 UTILIZING PVC PIPE AND FITTINGS. THE CONTRACTOR SHALL RECONNECT THIS SANITARY SEWER SERVICE BY REMOVING THE 4-INCH PVC PIPE, REMOVE THE EXISTING 45 DEGREE BEND AND RECONNECT THE SANITARY SEWER SERVICE TO THE PROPOSED MAIN UTILIZING THE NECESSARY FITTINGS TO RECONNECT THIS SANITARY SEWER SERVICE. SANITARY SEWER SERVICE TAPPING FEES WILL NOT BE REQUIRED DURING THIS PROJECT.

RECONNECTING THE SANITARY SEWER SERVICE AND SANITARY SEWER SADDLE, ALL MATERIALS, INCLUDING PIPE AND FITTINGS, AND LABOR SHALL BE INCLUDED IN THE BID ITEM "RECONNECT SEWER SERVICE" AND PAID FOR AT THE CONTRACT UNIT PRICE PER EACH.

**BYPASS PUMPING AND TESTING OF SANITARY SEWER**

BYPASS PUMPING AND TESTING OF THE PROPOSED SANITARY SEWER MAIN AND MANHOLES SHALL BE COMPLETED ACCORDING TO SECTION 9 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

ALL SANITARY SEWER MAINS AND MANHOLES WILL BE REQUIRED TO BE TESTED AND APPROVED PER SPECIFICATIONS PRIOR TO BEING PUT IN SERVICE.

AN EXAMPLE OF A DETAILED BYPASS PUMPING PLAN HAS BEEN INCLUDED WITHIN THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A PLAN DETAILING THE PROPOSED PROCEDURES FOR MAINTENANCE OF SEWER SERVICE, BYPASS PUMPING AND TESTING FOR EACH PHASE OF THE CONTRACTOR'S SANITARY SEWER CONSTRUCTION SCHEDULE TO THE ENGINEER PRIOR TO CONSTRUCTION. INSTALLATION OF SANITARY SEWER WILL NOT BE ALLOWED UNTIL THIS PLAN IS APPROVED BY THE ENGINEER.

ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED TO MAINTAIN SEWER SERVICE TO EXISTING RAPID CITY SANITARY SEWER CUSTOMERS THROUGHOUT THE PROJECT SHALL BE PAID AS A LUMP SUM UNDER THE BID ITEM "SEWER BYPASS PUMPING".



**WATER AND SANITARY SEWER GENERAL NOTES (CONT)**

SAWING EXISTING PAVEMENT

PAVEMENT AREAS TO BE REMOVED ARE SHOWN ON THE DRAWINGS. THESE AREAS REPRESENT THE FINAL PAVEMENT SAWCUT AND REMOVAL LIMITS. THE FIRST PAVEMENT SAWCUT FOR ASPHALT SHALL BE MADE AT LEAST 1-FOOT INSIDE OF THE LINES SHOWN. PAVEMENT TO BE REMOVED NEXT TO THE CONCRETE CURB AND GUTTER, SHALL HAVE THE FIRST PAVEMENT SAWCUT AT LEAST 1-FOOT INSIDE THE LIP OF THE CURB AND GUTTER. SAWCUTTING OF THE PAVEMENT AREAS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. ITEMS TO BE SAWCUT WILL INCLUDE AC PAVEMENT, PANS, SIDEWALKS, CURB AND GUTTER, AND MISCELLANEOUS CONCRETE AND ASPHALT ITEMS AS SHOWN ON THE PLANS. NO SEPARATE PAYMENT WILL BE MADE FOR SAWING.

BASE COURSE

BASE COURSE SHALL BE PLACED BENEATH ASPHALT CONCRETE FOR THIS PROJECT.

AGGREGATES FOR BASE COURSE SHALL BE LIMESTONE LEDGE ROCK AND SHALL CONFORM TO THE REQUIREMENTS OF 1" AGGREGATE BASE COURSE IN SECTION 117 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

PLACEMENT OF BASE COURSE SHALL BE IN ACCORDANCE WITH SECTION 20 OF THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

ESTIMATED QUANTITIES WERE BASED UPON AN ASSUMED IN PLACE DENSITY OF 150 LB/CU FT.

GRAVEL CUSHION

GRAVEL CUSHION SHALL BE PLACED UNDER THE CONCRETE PANEL REPLACEMENT.

GRAVEL CUSHION SHALL BE LIMESTONE LEDGE ROCK AND SHALL CONFORM TO SECTION 882 OF THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES 2004 EDITION.

PLACEMENT OF GRAVEL CUSHION SHALL BE IN ACCORDANCE WITH SECTION 260 OF THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES 2004 EDITION.

ESTIMATED QUANTITIES WERE BASED UPON AN ASSUMED IN PLACE DENSITY OF 150 LB/CU FT.

EXISTING UTILITY CROSSINGS

SIGNIFICANT EFFORT HAS BEEN PUT FORTH TO PROVIDE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES IN THESE PLANS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES. ANY DISTURBANCE ASSOCIATED WITH THE VERIFICATION REQUIRES IN-KIND SURFACE RESTORATION, AND SHALL BE INCIDENTAL TO THE PROJECT.

REFER TO THE STANDARD SPECIFICATIONS FOR CROSSING OF EXISTING STORM SEWERS, SANITARY SEWERS, WATER MAINS AND WATER MAIN LOWERINGS. AT ALL LOCATIONS WHERE THE PROPOSED UTILITY IMPROVEMENT CROSSES OR IS ADJACENT TO EXISTING UTILITIES THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE EXISTING UTILITY TO ENSURE THAT THEY ARE NOT DISTURBED DURING THE WORK. TEMPORARY STRUCTURAL SUPPORT FOR THE UTILITIES MAY BE REQUIRED. NO SEPARATE PAYMENT SHALL BE MADE FOR CROSSED UTILITY PROTECTION. ANY REPAIR WORK NECESSARY TO A CROSSED UTILITY RESULTING FROM THE CONTRACTOR'S ACTIVITY SHALL BE AT THE CONTRACTOR'S EXPENSE.

BEDDING, FOUNDATION MATERIAL (TRENCH)

QUANTITIES OF TYPE 1 BEDDING MATERIAL, TYPE 2 FOUNDATION MATERIAL AND TYPE 3 FOUNDATION MATERIAL HAVE BEEN INCLUDED IN THE ESTIMATE OF QUANTITIES FOR USE WHERE UNSTABLE TRENCH BOTTOM IS ENCOUNTERED. THIS WORK ITEM REQUIRES PRE-AUTHORIZATION BY THE ENGINEER TO BE ELIGIBLE FOR PAYMENT. ALL OTHER BEDDING MATERIAL IS INCIDENTAL TO THE SEWER MAIN INSTALLED PER THE RAPID CITY SPECIFICATIONS.

TRENCH CHECK DAM

CONTRACTOR SHALL PLACE WITHIN THE TRENCH A COMPACTED COHESIVE CLAY CHECK DAM. CHECK DAM LOCATIONS SHALL BE AS INDICATED ON THE PLANS. DURING CONSTRUCTION CHECK DAM LOCATIONS MAY BE MOVED DUE TO FIELD CONDITIONS UPON NOTIFICATION TO THE ENGINEER. THE ADJUSTED LOCATION SHALL BE RECORDED. THE CHECK DAM SHALL EXTEND FROM THE BOTTOM OF THE EXCAVATION THROUGH THE BEDDING MATERIAL TO THE BACKFILL AND SHALL EXTEND COMPLETELY TO EACH TRENCH SIDEWALL. THE CHECK DAM IS USED AS A MEANS TO PREVENT THE CONVEYANCE OF WATER THROUGH THE TRENCH BEDDING. COMPACTED COHESIVE CLAY SHALL CONSIST OF MATERIAL THAT CONTAINS A MINIMUM OF 25% MINUS NO. 200 SIEVE MATERIAL, WITH 70% PASSING A 3/4 INCH SIEVE AND A MINIMUM P.I. OF 10%. THE MATERIAL SHALL CONSIST OF CLAY, SILTY SAND, OR SILTY CLAY. IF THE NORMAL EXCAVATED MATERIAL IS NOT SUITABLE FOR CONSTRUCTION OF THE CHECK DAM THEN THE CONTRACTOR SHALL OBTAIN MATERIAL FROM OUTSIDE SOURCES. CHECK DAM INSTALLATION AND MATERIAL SHALL BE CONSIDERED AS INCIDENTAL TO THE SEWER PIPE INSTALLATION.

PIPE BURSTING

CONTRACTOR SHALL PIPE BURST THE SECTION OF SANITARY SEWER BETWEEN EXISTING MH G6-032 AND MH 2-3. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE SDDOT PORTION OF THIS PROJECT TO MINIMIZE THE DISTURBANCE AND DISRUPTION OF TRAFFIC AND SURFACE RESTORATION. VARIOUS LOCATIONS OF SAGS AND ABANDONED SERVICES WERE OBSERVED WHILE VIDEOING THIS STRETCH OF SANITARY SEWER MAIN. THIS INFORMATION IS PRESENTED IN THE PLAN AND PROFILE SHEETS.

CONTRACTOR SHALL PIPE BURST THIS PORTION OF SANITARY SEWER MAIN IN ACCORDANCE WITH THE SPECIFICATIONS PROVIDED IN THE BID DOCUMENTS.

PER THE DETAILED SPECIFICATIONS, BOTH FUSIBLE PVC (FPVC) AND HIGH DENSITY POLYETHYLENE (HDPE) ARE ACCEPTABLE PIPE PRODUCTS FOR THIS PROJECT. FUSION OF LONG STRINGS OF PIPE ARE LIMITED TO APPROXIMATELY 250- FEET TO AVOID CROSSING INTO THE RAILROAD RIGHT-OF-WAY.

FPVC SHALL BE GREEN IN COLOR. HDPE SHALL HAVE A GREEN STRIPE ON THE EXTERIOR OF THE PIPE WITH A LIGHT COLORED INTERIOR SURFACE.

THERE IS APPROXIMATELY 26- FEET HDPE PIPE CALLED OUT TO BE INSTALLED UTILIZING OPEN CUT METHODS BETWEEN MANHOLE 2-3 AND G6-032. THIS PORTION OF SANITARY SEWER MAIN SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR "PIPE BURSTING". THE CONTRACTOR SHALL MAKE ALL NECESSARY ACCOMMODATIONS TO FUSE OR CUT THE PIPE TO INSTALL THE SEWER PIPE BETWEEN THESE MANHOLES.

CONNECT INTO EXISTING MANHOLE G6-064

CONNECTION TO THE EXISTING TRUNK SANITARY SEWER SYSTEM AT MANHOLE G6-064 SHALL BE COMPLETED ACCORDING TO STANDARD DETAIL 9-6. CONTRACTOR SHALL REMOVE THE EXISTING 10-INCH PVC SANITARY SEWER MAIN AND GROUT THE EXISTING MANHOLE PENETRATION FLUSH TO THE INSIDE AND OUTSIDE OF THE MANHOLE.

ALL LABOR, MATERIALS, GROUTING THE EXISTING MANHOLE PENETRATION, EQUIPMENT, ETC. NECESSARY TO CONNECT TO EXISTING MANHOLE G6-064 SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER EACH FOR "CONNECT INTO EXISTING MANHOLE".

PIPE BURSTING INSTALLATION QUALITY INCENTIVE ALLOWANCE

SECTION 4.3 OF THE SPECIAL PROVISIONS OUTLINES THE "PIPE BURSTING INSTALLATION QUALITY INCENTIVE ALLOWANCE" FOR REMOVAL OF SAGS DURING PIPE BURSTING. REFER TO THE SPECIAL PROVISIONS DESCRIBING THE LEVELS OF PAYMENT FOR REMOVING THE EXISTING SAGS IN THE EXISTING 10-INCH CONCRETE PIPE.

OPEN CUT METHODS WILL NOT BE ALLOWED TO REMOVE THE SAGS IN THE EXISTING 10-INCH CONCRETE PIPE.

PIPE BURSTING INSTALLATION QUALITY ALLOWANCE WILL BE PAID FOR UNDER THE LUMP SUM BID ITEM FOR "INCENTIVE PAY".

WATER MAIN AND SANITARY SEWER CROSSING

DUE TO THE PROXIMITY OF THE SEWER MAIN AND THE WATER MAIN BETWEEN MH 2-1 AND 2-2, CONTRACTOR SHALL USE OPEN CUT METHODS OF CONSTRUCTION TO INSTALL THIS STRETCH OF SANITARY SEWER MAIN. IF ANODE BEDS OR JOINT BONDS ON THE 30" STEEL WATER MAIN ARE DISTURBED DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND REPAIR OF THESE ANODES OR JOINT BONDS. ALL WORK ASSOCIATED WITH THE REPAIR OR INSTALLATION OF ANODES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO ADDITIONAL PAYMENT WILL BE MADE.

UTILITY MAINTENANCE POTHOLED VARIOUS LOCATIONS ALONG THE SANITARY SEWER ALIGNMENT TO ACCURATELY LOCATE THE EXISTING WATER MAINS. THIS INFORMATION HAS BEEN ACCURATELY REPRESENTED IN THE PLANS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES. ANY DISTURBANCE ASSOCIATED WITH VERIFICATIONS REQUIRES IN-KIND SURFACE RESTORATION AND SHALL BE INCIDENTAL TO THE PROJECT. REFER TO THE STANDARD SPECIFICATIONS FOR CROSSING OF EXISTING STORM SEWER, SANITARY SEWER, WATER MAINS, AND WATER MAIN LOWERINGS. AT ALL LOCATIONS WHERE THE PROPOSED UTILITY IMPROVEMENT CROSS OR IS ADJACENT TO EXISTING UTILITIES THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE EXISTING UTILITY TO ENSURE THAT THEY ARE NOT DISTURBED DURING THE WORK. TEMPORARY STRUCTURAL SUPPORT FOR THE UTILITIES MAY BE REQUIRED. NO SEPARATE PAYMENT SHALL BE MADE FOR CROSSED UTILITY PROTECTION. ANY REPAIR WORK NECESSARY TO A CROSSED UTILITY RESULTING FROM THE CONTRACTOR'S ACTIVITY SHALL BE AT THE CONTRACTOR'S EXPENSE.

REMOVE AND REPLACE MANHOLE 2-1

MANHOLE 2-1 WAS RECENTLY CONSTRUCTED DURING THE WEST BOULEVARD SANITARY SEWER EXTENSION CONSTRUCTION PROJECT COMPLETED IN THE SPRING OF 2013. THE DOWNSTREAM BOOTED CONNECTION ACCOMMODATES A 10-INCH PVC SANITARY SEWER MAIN TO MATCH THE EXISTING SANITARY SEWER. THIS PROJECT REPLACES THE EXISTING 10-INCH CONCRETE SEWER MAIN WITH 12-INCH PVC. ACCORDING TO THE SUBMITTED SHOP DRAWINGS THE MANHOLE BASE IS 5.27- FEET TALL AND THE CONE SECTION IS 3- FEET TALL. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS.

CONTRACTOR SHALL RESET THE SALVAGED CONE AND BARREL SECTION. IF THE SALVAGED PIECES ARE DAMAGED DURING REMOVAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF THESE PIECES. NO ADDITIONAL PAYMENT WILL BE MADE FOR REPLACEMENT OF THE CONE AND/OR BARREL SECTION. THE CONTRACTOR SHALL REMOVE ALL JOINT SEALANT ALONG THE TONGUE AND GROOVE SECTION OF THE MANHOLE.

ALL MATERIALS, LABOR, EQUIPMENT, REMOVAL, SALVAGE AND RESET CONE AND BARREL SECTION, REMOVAL AND REPLACEMENT OF SEALANT TESTING ACCORDING TO CITY OF RAPID CITY STANDARD SPECIFICATIONS, ETC. NECESSARY TO REMOVE AND REPLACE MANHOLE 2-1 BASE SHALL BE INCLUDED IN THE CONTRACT BID PRICE PER EACH FOR "RECONSTRUCT MANHOLE".

ABANDON SANITARY SEWER MAINS AND MANHOLES

SANITARY SEWER MAINS SHALL BE ABANDONED IN PLACE ACCORDING TO THE CITY OF RAPID CITY STANDARD SPECIFICATIONS. ALL OPEN ENDS SHALL BE PLUGGED WITH CONCRETE ONE FOOT OR ONE PIPE DIAMETER, WHICHEVER IS GREATER. AT LOCATIONS WHERE A SERVICE IS CONNECTED TO A MAIN TO BE ABANDONED, THE SERVICE CONNECTION SHALL BE REMOVED AND BOTH OPEN ENDS OF THE MAIN AND THE OPEN END OF ANY SERVICE LINE TO REMAIN SHALL BE ABANDONED IN PLACE AS DESCRIBED ABOVE. ALL MATERIALS, LABOR, EQUIPMENT, ETC. NECESSARY TO ABANDON SANITARY SEWER MAINS SHALL BE INCIDENTAL TO THE PROJECT.

THE REMOVAL OF SANITARY SEWER MAINS NECESSARY FOR THE INSTALLATION OF NEW MAINS SHALL BE INCIDENTAL TO THE INSTALLATION OF THE NEW MAINS.

ALL SANITARY SEWER MANHOLES SHALL BE ABANDONED ACCORDING TO THE CITY OF RAPID CITY STANDARD SPECIFICATIONS.

ALL MATERIALS, LABOR, EQUIPMENT, ETC. NECESSARY TO COMPLETE THE ABANDONMENT OF SANITARY SEWER MANHOLES SHALL BE INCLUDED IN THE CONTRACT BID PRICE PER EACH FOR "ABANDON MANHOLE".

CONCRETE PAVEMENT

CONCRETE PAVEMENT REPLACEMENT SHALL CONFORM TO SECTION 380 OF THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES 2004 EDITION.

**FOR BIDDING PURPOSES ONLY**

		<b>PROJECT</b> OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	<b>SHEET NO.</b> 1.3	<b>TOTAL SHEETS</b> 24
		<b>PLOTTING DATE:</b> 12/11/13	GENERAL NOTES	

CONTRACTOR PROVIDED WATER

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER FOR COMPACTION OF EARTHEN AND GRANULAR MATERIALS USED FOR, BUT NOT LIMITED TO, GRADING, SUBGRADE PREPARATION, AND TRENCH BACKFILL. WATER NEEDED FOR SOD AND SEED IRRIGATION, STREET CLEANING, AND OTHER MISCELLANEOUS ITEMS SHALL ALSO BE PROVIDED BY THE CONTRACTOR. THE CITY WILL PROVIDE FREE WATER FOR WATER MAIN TESTING AND DECHLORINATION. THERE WILL BE NO SEPARATE PAYMENT FOR WATER. THE COSTS FOR PURCHASING, LOADING, TRANSPORTING AND APPLYING/INCORPORATING WATER SHALL BE INCIDENTAL TO THE VARIOUS ITEMS WHERE WATER IS REQUIRED.

THE CONTRACTOR WILL BE REQUIRED TO PAY FOR METER FEES AND INSTALLATION ONTO A FIRE HYDRANT IF THE WATER IS PURCHASED FROM THE CITY OF RAPID CITY.

MAINTENANCE OF ACCESS

THE CONTRACTOR SHALL MAINTAIN THE STREETS AND ACCOMMODATE ACCESS TO ADJACENT PROPERTIES WITHIN THE CONSTRUCTION LIMITS UNTIL FINAL PAVEMENT PATCHING/PAVING IS COMPLETE.

THE CONTRACTOR SHALL UTILIZE THE MILLED ASPHALT MATERIAL AND SALVAGED GRAVEL FROM WITHIN THE CONSTRUCTION LIMITS AS NECESSARY.

ASPHALT MILLINGS/GRAVEL MAINTENANCE AND THE ADDITION OF TEMPORARY GRAVEL AS NEEDED BEYOND THE ORIGINAL GRAVEL/MILLINGS INSTALLATION, SNOW REMOVAL, AND GENERAL CLEAN-UP OF THE STREETS SHALL BE INCIDENTAL TO THE PROJECT. NO ADDITIONAL PAYMENT WILL BE MADE.

HAULING AND PLACING CO-COMPOST

THE CONTRACTOR SHALL BLEND CO-COMPOST MATERIAL WITH THE NATIVE TOPSOIL PRIOR TO PLACEMENT OF SOD OR SEEDING. THE CO-COMPOST MATERIAL IS AVAILABLE FREE OF CHARGED FROM THE RAPID CITY LANDFILL. THE CO-COMPOST MATERIAL SHALL BE WELL BLENDED WITH THE EXISTING TOPSOIL TO A DEPTH OF 4-INCHES. ESTIMATED QUANTITIES ARE BASE ON A THICKNESS OF 1-INCH OVER THE DISTURBED AREA. ALL COSTS OF HAULING, PLACING AND INCORPORATING CO-COMPOST SHALL BE INCIDENTAL TO "SPECIAL PERMANENT SEED MIXTURE1".

SEEDING, FERTILIZING, AND MULCHING

ALL DISTURBED AREAS IN THE NORTH EAST QUADRANT OF THE INTERSECTION OF I-190 AND OMAHA STREET OUTSIDE THE SDDOT'S CONSTRUCTION LIMITS THAT WILL NOT BE PAVED, GRAVELED OR SODDED SHALL BE PERMANENTLY SEEDED ACCORDING TO THE STANDARD SPECIFICATIONS. SEED MIXTURE SHALL BE A NON-IRRIGATED LAWN MIX:

- 20% BLUE FESCUE
- 20% CHEWINGS RYEGRASS
- 20% CREEPING RED FESCUE
- 20% HARD FESCUE
- 10% PERRENIAL RYEGRASS
- 10% NUBLUE KENTUCKY BLUEGRASS

WITH AN APPLICATION RATE OF 200 LBS PER ACRE.

FERTILIZER SHALL BE 18-46-0 AND SHALL BE APPLIED AT A RATE OF 200 LBS PER ACRE.

GRASS HAY OR STRAW OR FIBER MULCH SHALL BE APPLIED AT A RATE OF 2000 LBS PER ACRE.

WATERING WILL BE REQUIRED ACCORDING TO SECTION 70 OF THE STANDARD SPECIFICATIONS.

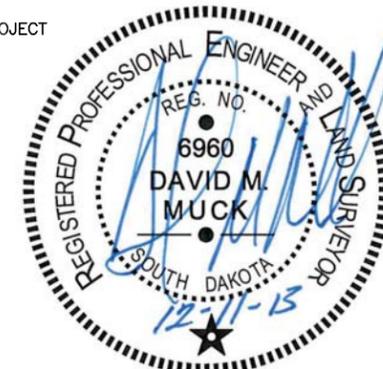
ALL LABOR, EQUIPMENT, MATERIALS ETC. NECESSARY TO PLACE SEED, FERTILIZING, AND MULCH SHALL BE PAID FOR UNDER "SPECIAL PERMANENT SEED MIXTURE 1", "FERTILIZING", AND "MULCHING", RESPECTIVELY.

PLANS QUANTITY WILL BE PAID WITHOUT FURTHER MEASUREMENT

INCIDENTAL WORK

THIS WORK INCLUDES ALL MISCELLANEOUS ITEMS NOT INCLUDED UNDER THE REGULAR ITEMS COVERED BY UNIT PRICES AS LISTED IN THE PROPOSAL, BUT WHICH MUST BE PERFORMED IN ORDER TO COMPLETE THE CONTRACT. SPECIFIC INCIDENTAL ITEMS ARE SHOWN ON THE DRAWINGS AND WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "INCIDENTAL WORK." INCIDENTAL WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. DUST CONTROL
2. PROTECTION OF EXISTING FEATURES/UTILITIES
3. ALL REQUIRED PERMITS AND FEES TO COMPLETE THE PROJECT
4. EXISTING UTILITY LOCATION AND VERIFICATION
5. EXPLORATORY EXCAVATION
6. DEWATERING
7. WASTE DISPOSAL SITE
8. IRRIGATION SYSTEM SALVAGING
9. TEMPORARY CONNECTIONS
10. TESTING
11. MAINTENANCE OF SOLID WASTE DISPOSAL SERVICE
12. LANDOWNER/RESIDENT NOTIFICATION
13. STREET MAINTENANCE
14. PROJECT COORDINATION
15. SANITARY SEWER MAIN ABANDONMENT
16. SANITARY SEWER SERVICE ABANDONMENT
17. CONCRETE WASHOUT AREAS



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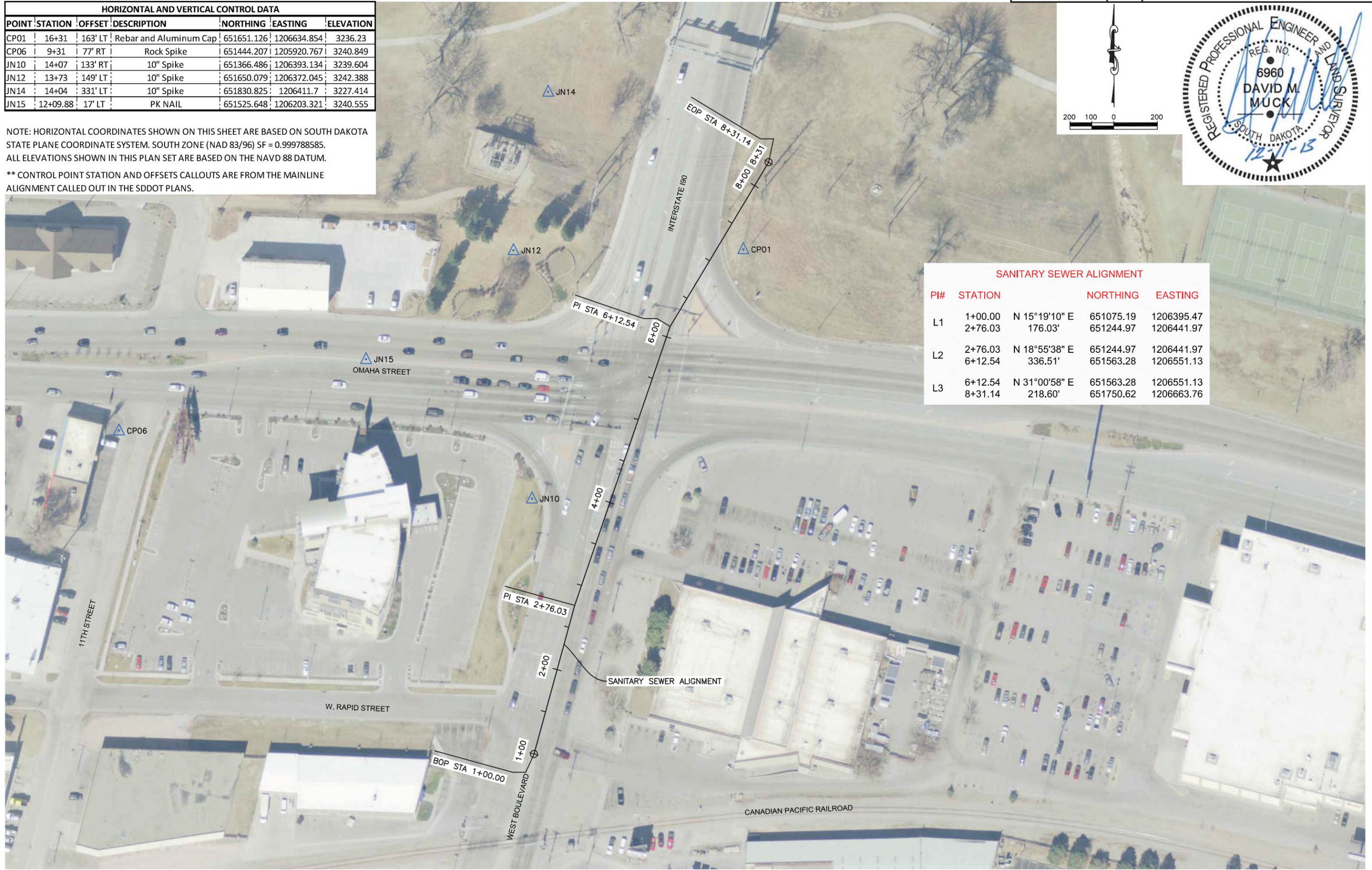
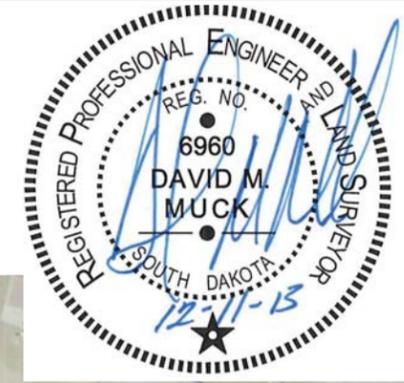
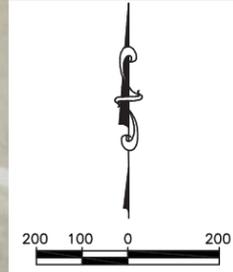
FEC Ferber Engineering  
 Engineering  
 PLOTTING DATE: 12/11/13



PROJECT		SHEET NO.	TOTAL SHEETS
OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES		2.1	24
HORIZONTAL ALIGNMENT & CONTROL DATA			

HORIZONTAL AND VERTICAL CONTROL DATA						
POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP01	16+31	163' LT	Rebar and Aluminum Cap	651651.126	1206634.854	3236.23
CP06	9+31	77' RT	Rock Spike	651444.207	1205920.767	3240.849
JN10	14+07	133' RT	10" Spike	651366.486	1206393.134	3239.604
JN12	13+73	149' LT	10" Spike	651650.079	1206372.045	3242.388
JN14	14+04	331' LT	10" Spike	651830.825	1206411.7	3227.414
JN15	12+09.88	17' LT	PK NAIL	651525.648	1206203.321	3240.555

NOTE: HORIZONTAL COORDINATES SHOWN ON THIS SHEET ARE BASED ON SOUTH DAKOTA STATE PLANE COORDINATE SYSTEM. SOUTH ZONE (NAD 83/96) SF = 0.999788585. ALL ELEVATIONS SHOWN IN THIS PLAN SET ARE BASED ON THE NAVD 88 DATUM.  
 \*\* CONTROL POINT STATION AND OFFSETS CALLOUTS ARE FROM THE MAINLINE ALIGNMENT CALLED OUT IN THE SDDOT PLANS.



SANITARY SEWER ALIGNMENT				
PI#	STATION		NORTHING	EASTING
L1	1+00.00	N 15°19'10" E	651075.19	1206395.47
	2+76.03	176.03'	651244.97	1206441.97
L2	2+76.03	N 18°55'38" E	651244.97	1206441.97
	6+12.54	336.51'	651563.28	1206551.13
L3	6+12.54	N 31°00'58" E	651563.28	1206551.13
	8+31.14	218.60'	651750.62	1206663.76

**PHASING AND TRAFFIC CONTROL NOTES:**

PROJECT PHASING REQUIRES THAT THE PIPE BURSTING AND DIRECT BURY PORTION OF SANITARY SEWER MAIN BETWEEN MANHOLES 2-1 AND 2-3 BE COMPLETED DURING PHASE 1 OF THE SDDOT'S PROJECT. IN ADDITION, SANITARY SEWER MAIN SHALL BE EXTENDED FROM MH 2-3 TO APPROXIMATELY STATION 6+60 AND EITHER CAPPED OR TEMPORARILY CONNECTED TO THE EXISTING SANITARY SEWER MAIN UNTIL SDDOT PHASE 2 BEGINS. COMPLETION OF PHASE 1 INCLUDES REMOVAL OF JERSEY BARRIERS AND OTHER TRAFFIC CONTROL SIGNAGE NECESSARY FOR THE CONSTRUCTION OF THE SANITARY SEWER IN WEST BOULEVARD TRAFFIC CONTROL ASSOCIATED WITH THE BYPASS PUMPING MUST REMAIN IN PLACE UNTIL BYPASS PUMPING OPERATIONS ARE NO LONGER NECESSARY AFTER PHASE COMPLETION OF PHASE 2 UTILITIES. UNDER SDDOT PHASE 2 THE SANITARY SEWER SHALL BE CONSTRUCTED FROM APPROXIMATELY STATION 6+60 TO MH G6-064. IF THE TEMPORARY CONNECTION IS MADE BETWEEN THE END OF PHASE 1 AND THE EXISTING SANITARY SEWER MAIN THE CONTRACTOR SHALL ABANDON THE TEMPORARY CONNECTION PER RAPID CITY STANDARD SPECIFICATIONS.

THE TRAFFIC CONTROL SHOWN ON THIS SHEET IS ADDITIONAL TO THE TRAFFIC CONTROL SPECIFIED IN THE SDDOT PORTION OF THIS PROJECT. THE TRAFFIC CONTROL SHOWN ON THIS SHEET IS FOR THE SANITARY SEWER BYPASS PUMPING AND SANITARY SEWER INSTALLATION OUTSIDE OF THE SDDOT'S RECONSTRUCTION LIMITS ONLY. REFER TO THE SDDOT'S TRAFFIC CONTROL PLAN SHEETS FOR ADDITIONAL TRAFFIC CONTROL MEASURES. A TABLE OF ESTIMATED TRAFFIC CONTROL DEVICES HAS BEEN INCLUDED WITHIN THIS PLAN SHEET. THIS TABLE IS FOR INFORMATIONAL PURPOSES ONLY. ALL TRAFFIC CONTROL MEASURES WITHIN THESE PLAN SHEETS SHALL BE PAID AT THE LUMP SUM CONTRACT UNIT PRICE FOR "TRAFFIC CONTROL, MISCELLANEOUS".

ALL TRAFFIC CONTROL DEVICES SHALL BE COORDINATED WITH THE SDDOT PROJECT TO LIMIT TRAFFIC DISRUPTION.

ADDITIONAL PAYMENT WILL NOT BE MADE FOR ADDITIONAL SIGNS NOT CALLED OUT WITHIN THIS PLAN SHEET.

**CONCRETE JERSEY BARRIERS**  
 CONCRETE JERSEY BARRIERS WILL BE MADE AVAILABLE TO THE CONTRACTOR AT NO COST, BY THE SDDOT. THE CONTRACTOR SHALL VERIFY THE NUMBER OF BARRIERS AVAILABLE. BARRIERS WILL BE AVAILABLE AT THE SDDOT YARD AT 2300 EGLIN STREET, RAPID CITY, SD 57709. THE CONTRACTOR SHALL USE CONCRETE JERSEY BARRIERS TO SEPARATE TRAFFIC FROM THE WORK AREA(S) DURING THE CONSTRUCTION OF THIS PROJECT. ADDITIONAL USE OF CONCRETE JERSEY BARRIERS SHALL BE AT THE DISCRETION OF THE CONTRACTOR AND AS APPROVED BY THE ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR PICK UP, INSTALLATION, AND RETURN OF ALL BARRIERS. REFLECTIVE TABS WILL BE REQUIRED FOR THE CONCRETE JERSEY BARRIERS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE OBTAINED TO THE CONCRETE JERSEY BARRIERS. THE CONTRACTOR WILL BE REQUIRED TO REPAIR/REPLACE THE DAMAGED CONCRETE JERSEY BARRIERS TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER. THE CONCRETE JERSEY BARRIERS, INCLUDING END TREATMENTS, SHALL BE INCIDENTAL TO THE CONTRACT LUMP SUM BID PRICE FOR "TRAFFIC CONTROL, MISCELLANEOUS".

**FEC Ferber Engineering**  
 Consulting Engineers  
 PLOTTING DATE: 8/8/13

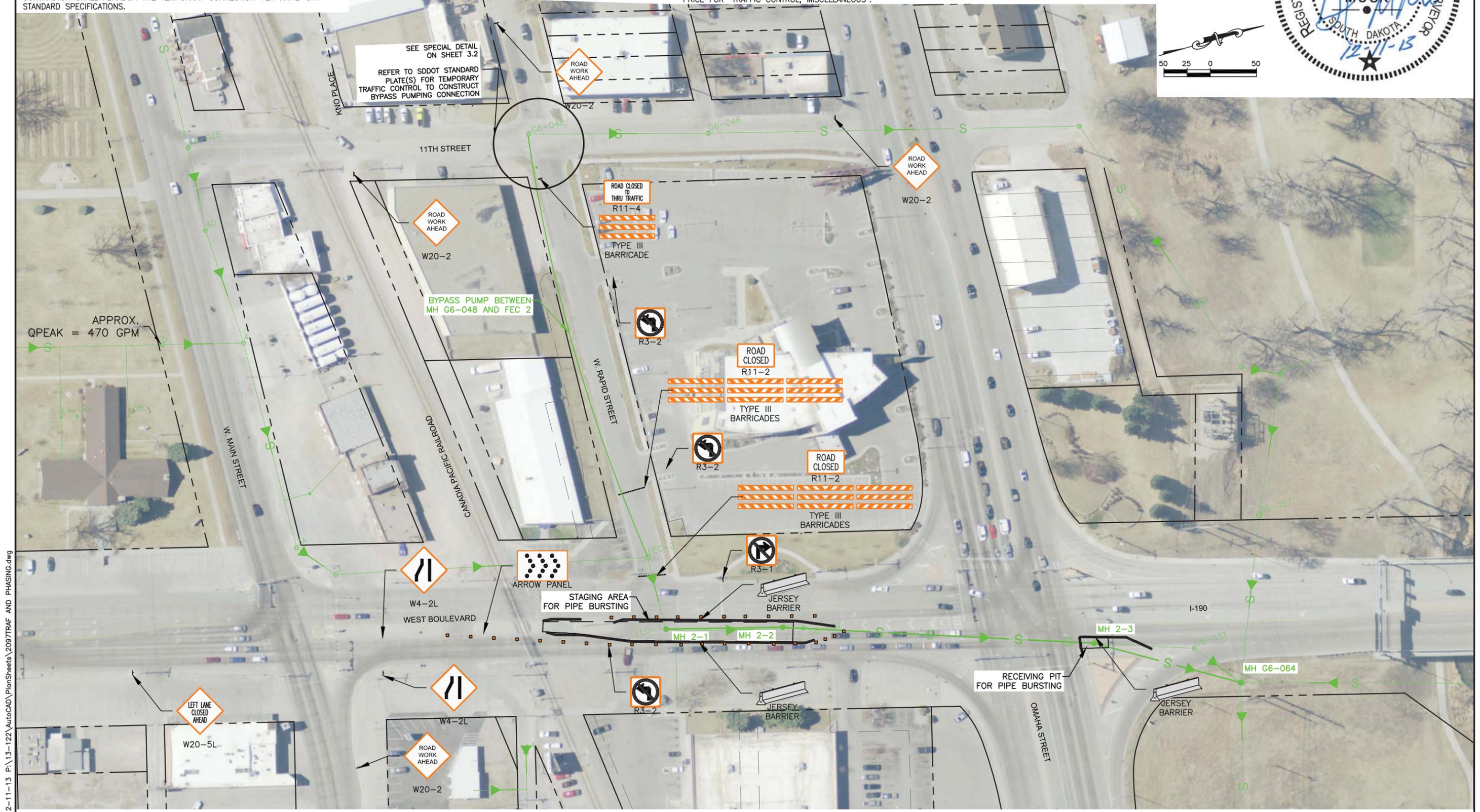
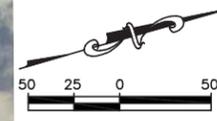


<b>PROJECT</b>	OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES
<b>SHEET NO.</b>	3.1
<b>TOTAL SHEETS</b>	24

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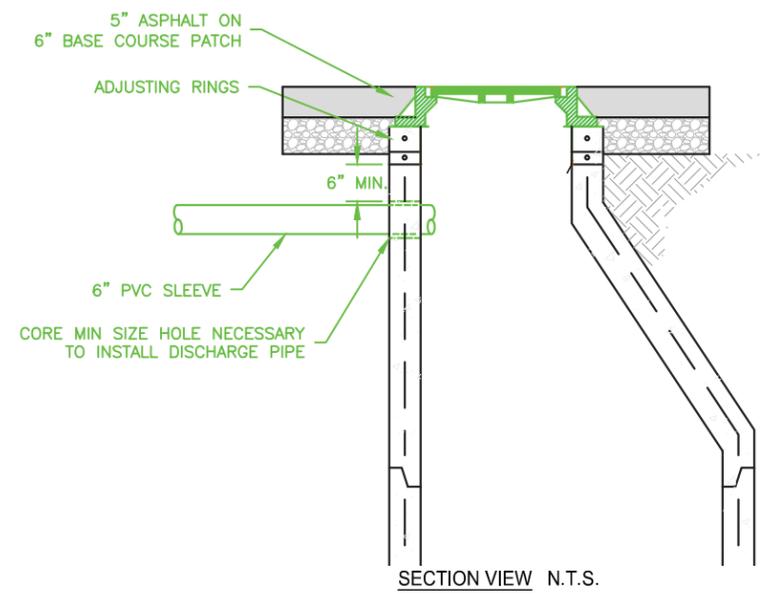
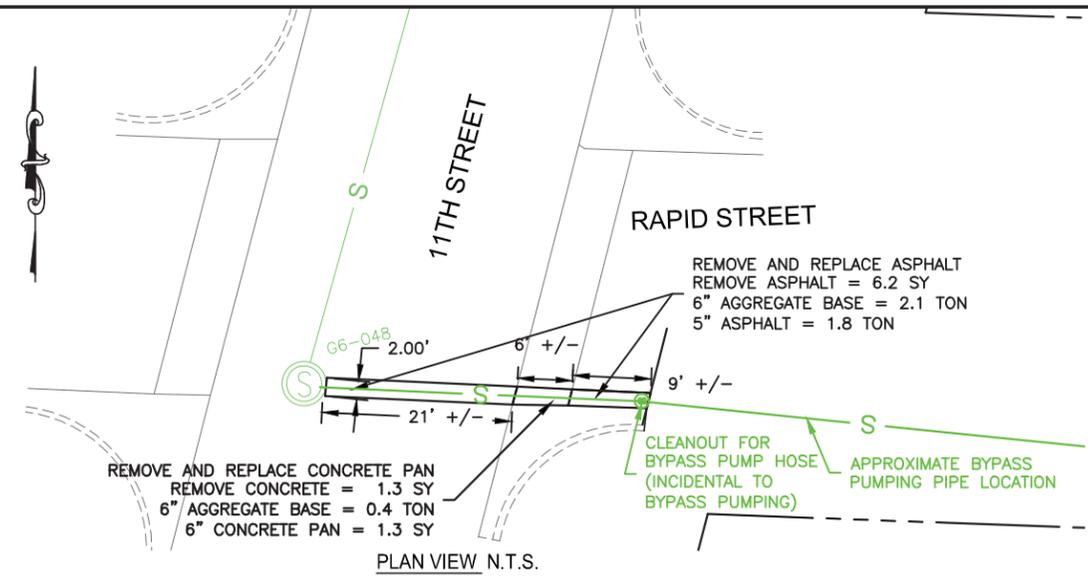
**ESTIMATED TRAFFIC CONTROL QUANTITIES**  
**\*\*FOR INFORMATIONAL PURPOSE ONLY**

ITEM	QUANTITY
FLAGGING	8 HOURS
TYPE III BARRICADE	7 EACH
CHANNELIZING DEVICE	48 EACH
TRAFFIC CONTROL MOVABLE CONCRETE BARRIER	65 EACH
ADVANCED WARNING SIGNS	16 EACH
ADVANCED ARROW BOARD	1 EACH



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**CONCEPTUAL BYPASS PUMPING PLAN**  
 THE CONCEPTUAL BYPASS PUMPING PLAN PROVIDED ON THIS SHEET IS TO DEMONSTRATE ONE WAY TO ACCOMMODATE THE SEWAGE FLOWS. THE CONTRACTOR SHALL PREPARE A DETAILED BYPASS PUMPING PLAN IN A SIMILAR MANNER AND SHALL SUBMIT THE PLAN TO THE ENGINEER 10 DAYS PRIOR TO THE CONSTRUCTION OF THE SANITARY SEWER MAIN AND MANHOLES. THE PEAK FLOWS PROVIDED WERE MEASURED DURING HEAVY RAINFALL PERIODS IN 2009.

BYPASS PUMP SEWAGE FROM MANHOLE FEC-2 TO MANHOLE G6-048 AT THE INTERSECTION OF 11TH STREET AND W. RAPID STREET.

THE SANITARY SEWER SERVICE FOR KNECHT'S SHALL REMAIN ACTIVE AND SHALL BE ACCOMMODATED FOR DURING THE CONSTRUCTION OF THE SANITARY SEWER MAINS AND MANHOLES.

THE TRAFFIC CONTROL PLAN PROVIDED IS FOR THE DESCRIBED BYPASS PUMPING PLAN. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING A TRAFFIC CONTROL PLAN FOLLOWING THE CONTRACTOR'S BYPASS PUMPING PLAN.

ALL LABOR, EQUIPMENT, SAW CUTTING, ETC. NECESSARY TO REMOVE THE CONCRETE PAN SHALL BE PAID AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR "REMOVE CONCRETE".

ALL LABOR, MATERIALS, EQUIPMENT, ETC. NECESSARY TO REPLACE THE CONCRETE PAN SHALL BE PAID AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR "6" MISCELLANEOUS PCC PAVEMENT".

**BYPASS PUMPING NOTES:**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND SUBMITTING THEIR BYPASS PUMPING PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION COMMENCING.
2. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN THESE PLANS WITH THE SDDOT'S TRAFFIC CONTROL AND SEQUENCING.

3. CORE A HOLE IN THE MANHOLE A MINIMUM OF 6-INCHES BELOW THE EXISTING ADJUSTING RINGS.
4. CONTRACTOR SHALL MINIMIZE THE DISTURBANCE OF THE ASPHALT AND CONCRETE PAN TO INSTALL THE 6-INCH PVC SLEEVE AS SHOWN IN THE DETAIL PROVIDED ABOVE. THE DISCHARGE PIPE SHALL BE PLACED IN THE SOUTH GUTTER FROM MANHOLE FEC-2 AND DISCHARGE INTO THE CLEANOUT AT 11TH STREET AS SHOWN ABOVE. TRAFFIC SHALL BE MAINTAINED ON RAPID STREET FROM 11TH STREET TO THE EASTERN ENTRANCE OF THE BANK.
5. AFTER THE 6-INCH SLEEVE HAS BEEN INSTALLED THE CONTRACTOR SHALL THE ASPHALT AREA IN 11TH STREET WITH 5-INCHS OF ASPHALT AND 6-INCHS OF BASE COURSE, REPLACE THE CONCRETE PAN WITH 6-INCHS OF CONCRETE AND 6-INCHS OF BASE COURSE. THE ASPHALT PATCH IN W. RAPID STREET SHALL BE TEMPORARILY PATCHED WITH EITHER ASPHALT MILLINGS, AGGREGATE BASE COURSE, OR ASPHALT CONCRETE. ASPHALT PATCH SHALL NOT BE LEFT OPEN THROUGH OUT CONSTRUCTION OF THE SANITARY SEWER MAIN.
6. WHEN BYPASS PUMPING IS NO LONGER NECESSARY, GROUT PVC SLEEVE ENTRANCE IN THE MANHOLE, FILL 6-INCH PVC SLEEVE WITH CONTROLLED LOW STRENGTH MATERIAL, REMOVE CLEANOUT, AND PATCH ASPHALT AS NECESSARY.
7. DEVELOPMENT OF A BYPASS PUMPING PLAN, ALL MATERIALS, CORING INTO THE MANHOLE, REPAIRING THE MANHOLE, FURNISHING AND INSTALLING 6-INCH SLEEVE AND CLEANOUT, FILLING THE 6-INCH SLEEVE WITH CONTROLLED LOW STRENGTH MATERIAL, REMOVING CLEANOUT, MAINTAINING THE TEMPORARY SURFACING, LABOR, EQUIPMENT, ETC. NECESSARY TO BYPASS PUMP SEWAGE TO CONSTRUCT THIS PORTION OF THE PROJECT SHALL BE INCLUDED IN THE LUMP SUM CONTRACT UNIT PRICE FOR "SEWER BYPASS PUMPING".
8. REMOVAL AND REPLACEMENT OF ASPHALT AND CONCRETE PAN AS WELL AS AGGREGATE BASE COURSE SHALL BE PAID FOR UNDER THERE RESPECTIVE BID ITEMS.

The movable concrete barrier layout is shown elsewhere in the plans.

### WITH BARRIER

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
	(A)	(B)	(C)	
70 - 75	1000	1600	2600	900

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

END ROAD WORK G20-2 (Optional)  
 Interim White Edge Line shall be used for overnight and long term operations  
 Movable Concrete Barrier  
 WORK SPACE  
 Arrow Board Sequential Chevron  
 RIGHT LANE CLOSED AHEAD W20-5  
 ROAD WORK AHEAD W20-1  
 December 23, 2012  
 PLATE NUMBER 634.65  
 Sheet 1 of 1

An interim white edge line should be installed from the start of the taper to a point beyond the work area, rejoining the permanent edge line.  
 The moveable concrete barrier shall not be placed along the merging taper. The lane shall first be closed using channelizing devices and pavement markings.  
 ReflectORIZED Drum  
 Channelizing Device shall be 42" cones or drums  
 42" cones may be used in place of the drums shown in the taper if setup will not be used during any night time hours.

SDDOT  
**GUIDES FOR TRAFFIC CONTROL DEVICES**  
**LANE CLOSURE WITH BARRIER**  
 Published Date: 3rd Qtr. 2013

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STORMWATER POLLUTION PREVENTION NARRATIVE

**EROSION AND SEDIMENT CONTROL PLAN PROJECT OWNER CERTIFICATION:**

"THIS EROSION AND SEDIMENT CONTROL REPORT AND ATTACHED SITE CONSTRUCTION PLAN APPEAR TO FULFILL THE TECHNICAL CRITERIA AND THE CRITERIA FOR EROSION AND SEDIMENT CONTROL REQUIREMENTS OF THE CITY OF RAPID CITY. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED IF UNFORESEEN EROSION OR SEDIMENT CONTROL PROBLEMS OCCUR OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED."

\_\_\_\_\_  
TERRY WOLTERSTORFF  
PUBLIC WORKS DIRECTOR  
CITY OF RAPID CITY (DATE)

**PROJECT OWNER /ENGINEER**  
CITY OF RAPID CITY  
300 SIXTH STREET  
RAPID CITY, SD 57701  
OWNER REPRESENTATIVE: KLARE SCHROEDER, P.E.  
EMAIL ADDRESS: [KLARE.SCHROEDER@RCGOV.ORG](mailto:KLARE.SCHROEDER@RCGOV.ORG)  
PHONE NUMBER: (605) 394-4154

**PRIME CONTRACTOR**  
COMPANY NAME:  
ADDRESS:  
CITY, STATE, ZIP:  
PROJECT MANAGER:  
EMAIL ADDRESS:  
PHONE NUMBER:

**EROSION AND SEDIMENT CONTROL PLAN PREPARED BY:**

DAVE M. MUCK, PE/LS,CFM  
FERBER ENGINEERING COMPANY, INC.  
729 EAST WATERTOWN STREET  
RAPID CITY, SD, 57701  
PHONE: (605) 343-3311  
FAX (605) 343-3399

I HEREBY CERTIFY THAT THIS DOCUMENT AND ALL ATTACHEMENTS WERE PREPARED UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF SOUTH DAKOTA.

\_\_\_\_\_  
DAVID M. MUCK, PE/LS, CFM (DATE)

**SITE DESCRIPTION**

PROJECT DESCRIPTION: SEE GENERAL NOTES SHEET  
PROJECT LIMITS: SEE TITLE SHEET  
SITE MAP(S): SEE TITLE SHEET AND PLAN SHEETS  
MAJOR SOIL DISTURBING ACTIVITIES: UTILITY RECONSTRUCTION.  
POTENTIAL POLLUTANT SOURCES: EXCAVATED MATERIAL, AGGREGATE, CONCRETE AND ASPHALT SAW DUST, CONCRETE SAW DUST AND MOBILE FUELING OPERATIONS.

TOTAL PROJECT AREA = 2.5 +/- ACRES  
TOTAL AREA TO BE DISTURBED = 0.20 +/- ACRES  
EXISTING VEGETATIVE COVER (%) = 2% TO 5%  
SOIL PROPERTIES: SANDY CLAY  
NAME OF RECEIVING WATER BODY/BODIES: RAPID CREEK

**EROSION AND SEDIMENT CONTROL CONSTRUCTION SITE PLAN**

THE ATTACHED EROSION AND SEDIMENT CONTROL CONSTRUCTION SITE PLAN IS PROVIDED TO ESTABLISH A NUMBER OF EROSION CONTROL DEVICES FOR BIDDING PURPOSES AND TO PROVIDE INFORMATION TO THE CONTRACTOR TO AID IN THE PROCESS OF OBTAINING ALL ASSOCIATED CONSTRUCTION PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR THE METHODS AND MEANS REQUIRED FOR IMPLEMENTING ANY AND ALL CONSTRUCTION ACTIVITIES TO BE IN COMPLIANCE WITH ALL PERMITS.

**EROSION AND SEDIMENT CONTROL PERMIT**

THE OWNER IS THE RESPONSIBLE PARTY FOR OBTAINING A CITY OF RAPID CITY EROSION AND SEDIMENT CONTROL PERMIT FROM THE CITY OF RAPID CITY.

**STORMWATER POLLUTION PREVENTION PLAN AND PERMITS**

THE PRIME CONTRACTOR IS THE RESPONSIBLE PARTY FOR PREPARING A NOTICE OF INTENT (NOI) FOR FILING FOR COVERAGE UNDER THE SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (SDDENR) TO OBTAIN COVERAGE UNDER THE GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

THE CITY OF RAPID CITY IS THE PROJECT OWNER. THE NOI AND THE CONTRACTOR CERTIFICATION SHALL BE SUBMITTED TO THE PROJECT OWNER. THE PROJECT OWNER WILL RETURN TO THE CONTRACTOR ONCE SIGNATURES HAVE BEEN OBTAINED. THE CONTRACTOR SHALL SUBMIT NOI TO SDDENR.

THE PRIME CONTRACTOR IS THE RESPONSIBLE PARTY FOR PREPARING THE NOTICE OF TERMINATION (NOT) FOR THE SDDENR ONCE "FINAL STABILIZATION" HAS BEEN OBTAINED ON THE PROJECT. THE NOI SHALL BE SUBMITTED TO THE PROJECT OWNER. THE CITY WILL SUBMIT THE NOI TO THE SDDENR. PLEASE REFER TO THE SDDENR GENERAL PERMIT FOR DEFINITIONS OF FINAL STABILIZATION.

PER CITY PERMIT REQUIREMENTS, THE CONTRACTOR SHALL AT ALL TIMES HAVE A COPY OF THE SDDENR NOI PERMIT LETTER, STORMWATER POLLUTION PREVENTION PLAN WITH ASSOCIATED EROSION AND SEDIMENT CONTROL PLAN DRAWINGS, AND INSPECTION REPORTS LOCATED WITHIN OR ADJACENT TO THE PROJECT LIMITS AVAILABLE FOR REVIEW. THE CONTRACTOR SHALL ENSURE THAT THIS INFORMATION IS LOCATED WITHIN A WEATHER TIGHT, SECURE ENCLOSURE AND CLEARLY LABELED.

**MODIFICATIONS TO THE ESCP**

THIS EROSION AND SEDIMENT CONTROL PLAN IS INTENDED TO SUPPLEMENT THE SDDOT EROSION AND SEDIMENT CONTROL PLAN. THE TWO PLANS SHALL WORK IN CONCERT TO MINIMIZE SEDIMENT DISCHARGE FROM THE PROJECT.

THE ENGINEER MAY ORDER CHANGES TO THE ESCP AND/OR THE CONTRACTOR IS RESPONSIBLE TO REQUEST CHANGES TO THE ESCP IF UNFORESEEN CHANGES OCCUR, OR THE ESCP DOES NOT PERFORM AS INTENDED, OR TO IMPROVE THE EFFECTIVENESS OF THE ESCP, OR TO COMPLY WITH THE SD DENR PERMIT. THE ENGINEER WILL EVALUATE AND DETERMINE IF ANY CONTRACTOR REQUESTED CHANGES TO THE ESCP SHOULD BE MADE. THE CONTRACTOR IS RESPONSIBLE TO IMPLEMENT THESE CHANGES AS SOON AS PRACTICAL.

THE CONTRACTOR SHALL HAVE AVAILABLE, ON-SITE, THE ORIGINAL ESCP WITH ANY MODIFICATIONS IMPLEMENTED IDENTIFIED ON THE ESCP.

**INSPECTIONS**

THE CONTRACTOR SHALL ENSURE THAT QUALIFIED PERSONNEL PERFORM INSPECTIONS ON THE PROJECT AT THE FOLLOWING MINIMUM FREQUENCY UNTIL THE SITE HAS REACHED FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO THE SD DENR:

1. PRIOR TO REMOVAL OF ANY SURFACING OR TOPSOIL.
2. ONCE EVERY SEVEN CALENDAR DAYS (MINIMUM). WHEN RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS THE INSPECTIONS MAY BE REDUCED TO ONCE A MONTH.
3. WITHIN 24 HOURS OF EVERY RAINFALL 1/2 INCH OR GREATER.
4. AFTER A SNOW MELT THAT CAUSES EROSION.
5. WITHIN 24 HOURS OF A COMPLAINT BEING MADE TO THE CONTRACTOR OR PROJECT OWNER.

THE ENGINEER RESERVES THE RIGHT TO PERFORM INSPECTIONS MORE FREQUENTLY THAN IDENTIFIED AND ADDITIONAL INSPECTIONS WILL BE MADE OF OBVIOUS ITEMS IF NON-COMPLIANCE EXISTS. IF THE CONTRACTOR FAILS TO ATTEND ANY INSPECTIONS, IT DOES NOT RELIEVE THEM OF THEIR RESPONSIBILITY TO COMPLY WITH ANY CORRECTION OF MAINTENANCE ACTIONS REQUIRED.

ITEMS NOTED AS BEING NON-COMPLIANT OR NEEDING MAINTENANCE AS A RESULT OF THE INSPECTIONS MUST BE CORRECTED AS SOON AS PRACTICAL. THE SITE SHALL CONTINUE TO BE CONSIDERED IN NON-COMPLIANCE UNTIL THE ISSUE HAS BEEN CORRECTED TO THE SATISFACTION OF THE ENGINEER.

**NOTICE OF TERMINATION**

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE ESCP UNTIL A NOTICE OF TERMINATION (NOT) OF COVERAGE UNDER THE GENERAL PERMIT HAS BEEN ISSUED. THE NOTICE WILL BE PREPARED BY THE CONTRACTOR FOR SUBMITTAL TO THE CITY AND TO THE SD DENR WHEN ALL STORM WATER DISCHARGES COVERED BY THE PERMIT ARE ELIMINATED AND FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITEE IS RESPONSIBLE. FINAL STABILIZATION MEANS EITHER OR A COMBINATION OF:

1. ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE NATIVE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN ESTABLISHED, OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIPRAP, GABIONS, OR GEO-TEXTILES) HAVE BEEN EMPLOYED; OR
2. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED AREA TO ITS PRE-CONSTRUCTION AGRICULTURAL USE. AREAS DISTURBED THAT WERE NOT PREVIOUSLY USED FOR AGRICULTURAL ACTIVITIES, SUCH AS BUFFER STRIPS IMMEDIATELY ADJACENT TO "WATERS OF THE STATE" AND AREAS WHICH ARE NOT BEING RETURNED TO THEIR PRE-CONSTRUCTION AGRICULTURAL USE MUST MEET THE FINAL STABILIZATION CRITERIA IN (1) ABOVE.

**GOOD HOUSEKEEPING**

NON-STRUCTURAL BMP'S USED AS GOOD HOUSEKEEPING MEASURES CAN, TO SOME DEGREE, PREVENT THE DEPOSITION OF POLLUTANTS ON THE URBAN LANDSCAPE OR REMOVE POLLUTANTS AT THEIR SOURCE. THE SOURCE OF POLLUTANTS FOR ASSIMILATION INTO STORM WATER IS THE LAND SURFACE ITSELF, ESPECIALLY THE IMPERVIOUS SURFACES IN THE URBAN AREA. THUS, IT IS EXPECTED THAT WHEN NON-STRUCTURAL MEASURES ARE EFFECTIVELY IMPLEMENTED, THEY WILL REDUCE THE AMOUNT OF POLLUTANTS BEING DEPOSITED ON THE LAND SURFACES FOR EVENTUAL CONTACT WITH STORM WATER AND TRANSPORTED TO THE RECEIVING WATER SYSTEM. THEREFORE, THE CONTRACTOR SHOULD EVALUATE AND DETERMINE WHICH APPROPRIATE GOOD HOUSEKEEPING MEASURES LISTED BELOW SHOULD BE USED.

OPERATIONS AND MAINTENANCE: TO ASSURE THAT EQUIPMENT AND WORK RELATED PROCESSES ARE WORKING WELL; THE FOLLOWING PRACTICES CAN BE IMPLEMENTED:

1. MAINTAIN DRY AND CLEAN FLOORS AND GROUND SURFACES BY USING BROOMS, SHOVELS, VACUUM CLEANERS, OR CLEANING MACHINES RATHER THAN WET CLEANUP METHODS.
2. REGULARLY PICK UP AND DISPOSE GARBAGE AND WASTE MATERIAL.
3. MAKE SURE ALL EQUIPMENT AND RELATED PROCESSES ARE WORKING PROPERLY AND PREVENTATIVE MAINTENANCE IS KEPT UP WITH ON BOTH.
4. ROUTINELY INSPECT EQUIPMENT AND PROCESSES FOR LEAKS OR CONDITIONS THAT COULD LEAD TO DISCHARGES OF CHEMICALS OR CONTACT OF STORM WATER WITH RAW MATERIALS, INTERMEDIATE MATERIALS, WASTE MATERIALS, OR PRODUCTS USED ON-SITE.
5. ASSURE ALL SPILL CLEANUP PROCEDURES ARE UNDERSTOOD BY EMPLOYEES. TRAINING OF EMPLOYEES ON PROPER CLEANUP PROCEDURES SHALL BE IMPLEMENTED.
6. DESIGNATE SEPARATE AREAS OF THE SITE FOR AUTO PARKING VEHICLE REFUELING, CONCRETE TRUCK WASH-OUT, AND ROUTINE MAINTENANCE
7. CLEAN UP LEAKS, DRIPS, AND OTHER SPILLS IMMEDIATELY.
8. COVER AND MAINTAIN DUMPSTER'S AND WASTE RECEPTACLES.

FOR BIDDING PURPOSES ONLY

 <b>FERBER Engineering</b> CONSULTANTS 1211 13th St SW Rapid City, SD 57701 (605) 343-3311 www.ferbereng.com		<b>PROJECT</b>	<b>SHEET NO.</b>	<b>TOTAL SHEETS</b>
		OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	4.1	24
<b>PLOTTING DATE:</b>		EROSION AND SEDIMENT CONTROL NOTES		

MATERIAL STORAGE PRACTICES: IMPROPERLY STORING MATERIAL ON-SITE CAN LEAD TO THE RELEASE OF MATERIALS AND CHEMICALS THAT CAN CAUSE STORM WATER RUNOFF POLLUTION. PROPER STORAGE TECHNIQUES INCLUDE THE FOLLOWING:

1. PROVIDE ADEQUATE AISLE SPACE TO FACILITATE MATERIAL TRANSFER AND EASE OF ACCESS FOR INSPECTION.
2. STORE CONTAINERS, DRUMS, AND BAGS AWAY FROM DIRECT TRAFFIC ROUTES TO PREVENT ACCIDENTAL SPILLS.
3. STACK CONTAINERS ACCORDING TO MANUFACTURER'S INSTRUCTIONS TO AVOID DAMAGING THE CONTAINERS FROM IMPROPER WEIGHT DISTRIBUTION.
4. STORE CONTAINERS ON PALLETS OR SIMILAR DEVICES TO PREVENT CORROSION OF CONTAINERS THAT RESULTS FROM CONTAINERS COMING IN CONTACT WITH MOISTURE ON THE GROUND.
5. STORE TOXIC OR HAZARDOUS LIQUIDS WITHIN CURBED AREA OR SECONDARY CONTAINERS.
6. ASSIGN RESPONSIBILITY OF HAZARDOUS MATERIAL INVENTORY TO A LIMITED NUMBER OF PEOPLE WHO ARE TRAINED TO HANDLE SUCH MATERIALS.

MATERIAL INVENTORY PRACTICES: AN UP-TO-DATE INVENTORY KEPT ON ALL MATERIALS (BOTH HAZARDOUS AND NON-HAZARDOUS) PRESENT ON-SITE WILL HELP TRACK HOW MATERIALS ARE STORED AND HANDLED ONSITE, AND IDENTIFY WHICH MATERIALS AND ACTIVITIES POSE THE MOST RISK TO THE ENVIRONMENT. THE FOLLOWING DESCRIPTION PROVIDES THE BASIC STEPS IN COMPLETING A MATERIAL INVENTORY:

1. IDENTIFY ALL CHEMICAL SUBSTANCES PRESENT AT THE WORK SITE. PERFORM A WALK-THROUGH OF THE SITE, REVIEW PURCHASE ORDERS, LIST CHEMICAL SUBSTANCES USED, AND OBTAIN MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL CHEMICALS.
2. LABEL ALL CONTAINERS. LABELS SHALL PROVIDE NAME AND TYPE OF SUBSTANCE, STOCK NUMBER, EXPIRATION DATE, HEALTH HAZARDS, HANDLING SUGGESTIONS, AND FIRST AID INFORMATION. THIS MATERIAL CAN ALSO BE FOUND ON THE MSDS.
3. CLEARLY MARK ON THE HAZARDOUS MATERIALS INVENTORY WHICH CHEMICALS REQUIRE SPECIAL HANDLING, STORAGE, USE, AND DISPOSAL CONSIDERATIONS. DECISIONS ON THE AMOUNTS OF HAZARDOUS MATERIALS THAT ARE STORED ON-SITE SHALL INCLUDE AN EVALUATION OF ANY EMERGENCY CONTROL SYSTEMS THAT ARE IN PLACE. ALL STORAGE AREAS SHALL BE DESIGNED TO CONTAIN ANY SPILLS.

TRAINING AND PARTICIPATION: FREQUENT AND PROPER TRAINING IN GOOD HOUSEKEEPING TECHNIQUES REDUCES THE POSSIBILITY OF CHEMICALS OR EQUIPMENT THAT WILL BE MISHANDLED. REDUCING WASTE GENERATION IS ANOTHER IMPORTANT POLLUTION PREVENTION TECHNIQUE. THE FOLLOWING ARE WAYS TO GET PEOPLE INVOLVED IN GOOD HOUSEKEEPING PRACTICES.

1. PROVIDE INFORMATION SESSIONS ON GOOD HOUSEKEEPING PRACTICES IN TRAINING PROGRAMS.
2. DISCUSS GOOD HOUSEKEEPING AT MEETINGS.
3. PUBLICIZE POLLUTION PREVENTION THROUGH POSTERS OR SIGNS.

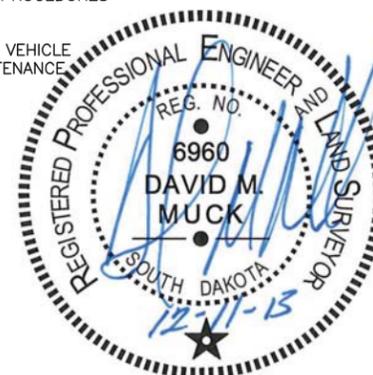
**SPILL PREVENTION AND RESPONSE**

A SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC) IDENTIFIES AREA WHERE SPILLS CAN OCCUR ON-SITE, SPECIFIES MATERIALS HANDLING PROCEDURES, STORAGE REQUIREMENTS, AND IDENTIFIES SPILL CLEANUP PROCEDURES. THE PLAN IS INTENDED TO ESTABLISH STANDARD OPERATING PROCEDURES AND NECESSARY EMPLOYEE TRAINING TO MINIMIZE THE LIKELIHOOD OF ACCIDENTAL RELEASES OF POLLUTANTS THAT CAN CONTAMINATE STORM WATER.

STORM WATER CONTAMINATION ASSESSMENT, FLOW DIVERSION, RECORD KEEPING, INTERNAL REPORTING, EMPLOYEE TRAINING, AND PREVENTATIVE MAINTENANCE ARE ASSOCIATED BMP'S THAT CAN BE INCORPORATED INTO A COMPREHENSIVE SPILL PREVENTION PLAN.

EMERGENCY SPILL CLEANUP PLANS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. A DESCRIPTION OF THE FACILITY INCLUDING THE NATURE OF THE FACILITY ACTIVITY AND GENERAL TYPES AND QUANTITIES OF CHEMICALS STORED AT THE FACILITY.
2. THE SITE PLAN SHOWING THE LOCATION OF STORAGE AREAS OF CHEMICALS. THE LOCATION OF STORM DRAINS, SITE DRAINAGE PATTERNS. FIREFIGHTING EQUIPMENT AND WATER SOURCE LOCATIONS, AND THE LOCATION AND DESCRIPTION OF ANY DEVICES USED TO CONTAIN SPILLS SUCH AS POSITIVE CONTROL VALVES.
3. NOTIFICATION PROCEDURES TO BE IMPLEMENTED IN THE EVENT OF A SPILL SUCH AS PHONE NUMBERS OF KEY PERSONNEL AND APPROPRIATE REGULATORY AGENCIES.
4. INSTRUCTIONS REGARDING CLEANUP PROCEDURES.
5. DESIGNATED PERSONNEL WITH OVERALL SPILL RESPONSE CLEANUP RESPONSIBILITY.
6. QUICK NOTIFICATION OF RAPID CITY FIRE AND RESCUE FOR SPILLS THAT CANNOT BE HANDLED BY LOCAL SITE STAFF



STORMWATER POLLUTION PREVENTION NARRATIVE (CONT)

METHODS OF ENSURING SURFACE WATER QUALITY

THE ONLY NON-STORM WATER DISCHARGE ALLOWED BY THE GENERAL PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES IS UNCONTAMINATED GROUND WATER OR WATERS, USED AS A BEST MANAGEMENT PRACTICE, TO WASH VEHICLES AND CONTROL DUST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN A GENERAL PERMIT TO DISCHARGE UNDER THE SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM FOR TEMPORARY DISCHARGE ACTIVITIES IN SOUTH DAKOTA (DEWATERING PERMIT) FOR ALL OTHER NON-STORM WATER DISCHARGES. ALL MONITORING, TESTING, AND OTHER REQUIREMENTS OF THE DEWATERING PERMIT ARE THE RESPONSIBILITY OF THE CONTRACTOR.

PUMPING (MECHANICALLY DISCHARGING) SEDIMENT LADEN WATER INCLUDING PONDED STORM WATER OR CONTAMINATED TRENCH DEWATERING INTO THE STORM SEWER OR OFF THE PROJECT SITE IS NOT COVERED UNDER THE GENERAL PERMIT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND COMPLY WITH A DEWATERING PERMIT FOR THESE ACTIVITIES. THE ENGINEER MAY NOTIFY THE SD DENR IF THE CONTRACTOR IS OBSERVED PUMPING SEDIMENT LADEN WATER INTO THE STORM SEWER OR OFF SITE. PUMPING SEDIMENT LADEN STORM WATER THROUGH INLET PROTECTION IS NOT ALLOWED AS A BMP.

IN LIEU OF PUMPING SEDIMENT LADEN WATER THE FOLLOWING ARE SOME METHODS THE CONTRACTOR MAY USE TO CONTROL SEDIMENT LADEN WATER:

1. THE BEST METHOD IS FOR THE CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF THE PROJECT TO PREVENT WATER FROM PONDING ON THE PROJECT.
2. TREAT THE SEDIMENT LADEN WATER ON-SITE THROUGH THE USE OF FILTER BAGS, DEFLOCCULATING CHEMICALS, SEDIMENT BASINS, OR A PORTABLE CONTAINMENT SYSTEM.
3. PUMP OR DISCHARGE THE WATER TO OTHER PORTIONS OF THE SITE. THIS IS ALLOWED IF WATERS DO NOT LEAVE THE PROJECT LIMITS.

NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR TO COMPLY WITH THE DEWATERING PERMIT.

MODIFICATIONS OF EROSION AND SEDIMENT CONTROL DEVICES TO PREVENT PROPERTY DAMAGE  
THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN DRAINAGE. IN THE EVENT THAT AN EROSION OR SEDIMENT CONTROL DEVICE IS OBSTRUCTING DRAINAGE AND DAMAGE TO PROPERTY IS POSSIBLE THE CONTRACTOR MAY TEMPORARILY MODIFY OR REMOVE THE DEVICE TO FACILITATE DRAINAGE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER TO DISCUSS AND IMPLEMENT ALTERNATIVES TO COMPLY WITH THE ESCP AND GENERAL PERMIT.

DURING THE COURSE OF CONSTRUCTION HEAVY RAINFALL EVENTS MAY OCCUR. THE CONTRACTOR SHALL MAKE SURE THAT THE STORMWATER RUNOFF WILL GO INTO THE INLETS, WHICH MAY REQUIRE REMOVING THE INLET PROTECTION TEMPORARILY. IN NO CASE SHALL THE INLETS BE SO PLUGGED AS TO ALLOW STORMWATER TO GET ONTO HOMEOWNERS PROPERTY OR INTO BASEMENTS. I.E. THE CONTRACTOR NEEDS TO HAVE PERSONNEL ON-SITE DURING RAIN EVENTS TO PULL INLET PROTECTION IF FLOODING OF PRIVATE PROPERTY BEGINS. DO NOT PULL PRIOR TO STORM EVENTS OR IF THE EVENT IS SMALL.

SOIL SURFACE STABILIZATION PRACTICES

AFTER CONSTRUCTION BEGINS, SOIL SURFACE STABILIZATION SHALL BE APPLIED WITHIN 14 DAYS TO ALL DISTURBED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR PERIODS LONGER THAN 21 CALENDAR DAYS. WITHIN 14 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE, PERMANENT OR TEMPORARY SOIL SURFACE STABILIZATION SHALL BE APPLIED TO DISTURBED AREAS AND SOIL STOCKPILES. THE FOLLOWING TABLE LISTS THE AMOUNT OF TIME VARIOUS EROSION CONTROL MEASURES ARE APPLICABLE:

MAXIMUM TIME LIMITS OF LAND EXPOSURES FOR SELECTION OF EROSION CONTROLS

EROSION CONTROL METHOD	MAXIMUM ALLOWABLE PERIOD OF EXPOSURE (MONTHS)
SURFACE ROUGHENING	1
MULCHING	12
TEMPORARY RE-VEGETATION	12-24
PERMANENT RE-VEGETATION	24 OR MORE
SOIL STOCKPILE RE-VEGETATION	2
EARLY APPLICATION OF ROAD BASE	1

MAINTENANCE

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL DEVICES UNTIL A NOTICE OF TERMINATION IS FILED. NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR FOR MAINTAINING OR REPAIRING THESE ITEMS.

REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES

THE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL DEVICES WHEN THE SITE REACHES FINAL STABILIZATION. NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR FOR REMOVING SUCH ITEMS. THE ENGINEER MAY ORDER SPECIFIC TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL DEVICES TO REMAIN IN-PLACE PAST FINAL STABILIZATION. THE CONTRACTOR WILL NOT BE RESPONSIBLE TO REMOVE THESE ITEMS.

PERMANENT STABILIZATION MEASURES

PERMANENT SEEDING WILL BE USED FOR PERMANENT STABILIZATION OF ALL AREAS LOCATED THROUGHOUT THE PROJECT. AREAS WITH SLOPES EXCEEDING 3:1 WILL BE PROTECTED WITH EROSION CONTROL BLANKET.

EROSION AND SEDIMENT CONTROL SEQUENCE AND TIME SCHEDULE

THE FOLLOWING SEQUENCE AND TIME SCHEDULE ARE INTENDED TO PROVIDE A GUIDELINE TO THE CONTRACTOR FOR THE INSTALLATION AND IMPLEMENTATION OF THE EROSION CONTROL PLAN DURING CONSTRUCTION. THE SEQUENCE AND TIME SCHEDULE ARE FOR REFERENCE ONLY AND MAY CHANGE DEPENDING ON THE CONTRACTOR'S SEQUENCE OF OPERATIONS AND MUST BE APPROVED BY THE ENGINEER PRIOR TO MAKING CHANGES.

TIME SCHEDULE:

REFER TO SECTION "C" OF THE SDDOT PLANS FOR CONSTRUCTION SEQUENCING

ANTICIPATED START DATE OF CONSTRUCTION IS AUGUST 11, 2014

INSTALL EROSION CONTROL MEASURES SUCH AS CONSTRUCTION ENTRANCE, SILT FENCE, SEDIMENT CONTROL WATTLES PRIOR TO BEGINNING UTILITY RECONSTRUCTION.

ANTICIPATED COMPLETION DATE FOR CONSTRUCTION IS OCTOBER 17, 2014.

INSTALL EROSION CONTROL MEASURES SUCH AS SILT FENCE, MULCH, WATTLES, INLET PROTECTION, AND ANY OTHER MEASURED DEEMED NECESSARY BY THE ENGINEER UPON COMPLETION OF FINAL GRADING.

EROSION AND SEDIMENT CONTROL MEASURES

INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES

THE CONTRACTOR SHALL NOT BEGIN THE REMOVAL OF SURFACING OR TOPSOIL WITHIN THE APPLICABLE WORK AREA UNTIL ALL APPLICABLE TEMPORARY EROSION CONTROL MEASURES ARE PLACED. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED AS NECESSARY AS CONSTRUCTION PROGRESSES AND THESE TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED WITHIN 24 HOURS AT LOCATIONS IDENTIFIED ON THE ESCP.

PERIMETER PROTECTION

PERIMETER PROTECTION SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, TO RETAIN SEDIMENT FROM BEING TRANSPORTED OFF THE PROJECT SITE. PERIMETER PROTECTION MAY BE CONSTRUCTED WITH SILT FENCE OR SEDIMENT CONTROL WATTLES. PERIMETER PROTECTION SHALL BE INSPECTED IN ACCORDANCE WITH THE SWPPP AND/OR EROSION SEDIMENT CONTROL PERMIT.

PAYMENT FOR PERIMETER PROTECTION WILL BE PER LINEAR FOOT FOR THE VARIOUS ITEMS USED FOR PERIMETER PROTECTION SUCH AS "SILT FENCE" AND "SEDIMENT CONTROL WATTLE".

EROSION CONTROL WATTLES (SCW)

EROSION CONTROL WATTLES CAN BE USED FOR PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, SLOPE PROTECTION, ETC. AND SHALL BE INSTALLED AT LOCATIONS AS SHOWN ON THE DRAWINGS AND AT LOCATIONS DETERMINED BY THE ENGINEER DURING CONSTRUCTION. REFER TO CITY OF RAPID CITY DETAIL 150-3 FOR DETAIL.

THE CONTRACTOR SHALL PROVIDE CERTIFICATION THAT THE EROSION CONTROL WATTLES DO NOT CONTAIN NOXIOUS WEED SEEDS. FOR COMPOST SOCKS THE CONTRACTOR SHALL ALSO PROVIDE CERTIFICATION THAT THE COMPOST USED IS FREE FROM NOXIOUS WEED SEEDS.

THE CONTRACTOR SHALL REMOVE SEDIMENT TRAPPED BY THE WATTLE WHEN THE SURFACE OF THE SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE EXPOSED WATTLE. DAMAGED AREAS SHOULD BE REPAIRED IMMEDIATELY UNTIL THE VEGETATION IS ESTABLISHED AND GROWING THROUGH THE MATERIAL.

THE EROSION CONTROL WATTLE SHALL BE THE DIAMETER SHOWN ON THE DRAWINGS AND SELECTED FROM THE MANUFACTURERS LISTED BELOW; OR APPROVED EQUAL:

MANUFACTURER	PRODUCT NAME
AMERICAN EXCELSIOR COMPANY ARLINGTON, TX PHONE: 1-800-777-7645 <a href="http://WWW.AMEREXCEL.COM">WWW.AMEREXCEL.COM</a>	CURLEX SEDIMENT LOG AND AEC PREMIER STRAW WATTLE
FLAXTECH LLC ROCKLAKE, ND PHONE: 701-266-5417 <a href="http://WWW.FLAXTECH.NET">WWW.FLAXTECH.NET</a>	BIOLOG FLAX STRAW WATTLE
DIOTEN ENGINEERING, INC. RAPID CITY, SD <a href="http://WWW.DIOTEN.COM">WWW.DIOTEN.COM</a>	COMPOST FILTER SOCK
ASPEN RIDGE RAPID CITY, SD PHONE 605-415-0695 <a href="http://WWW.SILT SOCKSD.COM">WWW.SILT SOCKSD.COM</a>	SILT SOCK

THE CONTRACTOR SHALL INSTALL EROSION CONTROL WATTLES ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

EROSION CONTROL WATTLES SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR "12" DIAMETER EROSION CONTROL WATTLE". PAYMENT FOR ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO INSTALL, MAINTAIN, REPAIR, AND REMOVE THE EROSION CONTROL WATTLES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAL FOOT.

VEHICLE TRACKING CONTROL (VTC)

THE CONTRACTOR SHALL INSTALL VEHICLE TRACKING CONTROL MEASURES AT LOCATIONS AS SHOWN ON THE DRAWINGS. REFER TO CITY OF RAPID CITY DETAIL 150-9, 150-10 FOR DETAILS.

THE CONTRACTOR SHALL MAINTAIN THE VEHICLE TRACKING CONTROL SUCH THAT MUD TRACKING AND SEDIMENT FLOW WILL NOT ENTER THE ROADWAY OR ADJACENT DRAINAGE AREAS. THE VEHICLE TRACKING CONTROL SHALL BE ROUTINELY INSPECTED AND THE CONTRACTOR SHALL REPAIR OR REPLACE MATERIAL AS DEEMED NECESSARY BY THE ENGINEER.

PAYMENT TO CONSTRUCT, MAINTAIN, AND REMOVE THE CONSTRUCTION ENTRANCE WILL BE PAID FOR UNDER CONTRACT BID ITEM PER EACH FOR "CONSTRUCTION ENTRANCE".

 PLOTTING DATE:	PROJECT OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	SHEET NO. 4.2	TOTAL SHEETS 24
	EROSION AND SEDIMENT CONTROL NOTES		

FOR BIDDING PURPOSES ONLY

GRANULAR MATERIAL FOR VEHICLE TRACKING CONTROL  
GRANULAR MATERIAL SHALL BE PLACED IN 6 INCH MAXIMUM LIFTS.

AGGREGATE FOR GRANULAR MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS:

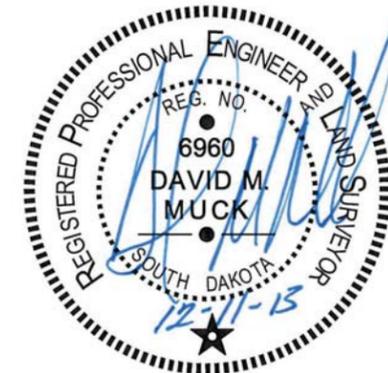
SIEVE SIZE	PERCENT PASSING
3"	100%
2 1/2"	90-100%
1 1/2"	25-60%
3/4"	0-10%
1/2"	0-5%

GRANULAR MATERIAL WILL BE PAID FOR AT THE CONTRACT PRICE PER EACH FOR "CONSTRUCTION ENTRANCE". PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING MATERIALS, LABOR, AND EQUIPMENT.

CONCRETE WASHOUT AREA (CWA)

CONCRETE WASHOUT AREA SHALL BE PROVIDED FOR CONCRETE TRUCKS AS NECESSARY. REFER TO CITY OF RAPID CITY DETAIL 150-11 FOR DETAILS.

CONTRACTOR SHALL UTILIZE THE CONCRETE WASHOUT AREA(S) PROVIDED IN THE SD DEPARTMENT OF TRANSPORTATION EROSION CONTROL PLANS.



LEGEND



EXISTING FLOW DIRECTION

— SCW —



12" DIAMETER EROSION CONTROL WATTLE



CONSTRUCTION ENTRANCE

FOR BIDDING PURPOSES ONLY

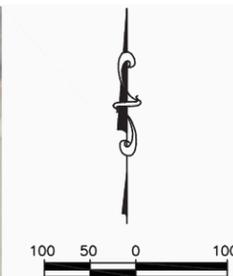
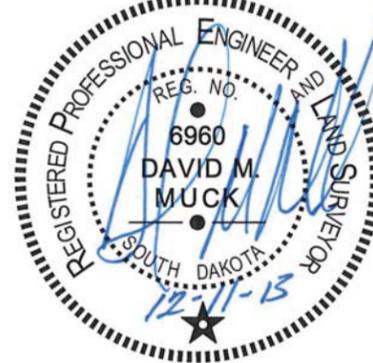
FEC Ferber Engineering & Planning  
PLOTING DATE:



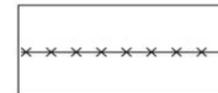
PROJECT  
OMAHA STREET/ W. BOULEVARD  
INTERSECTION - UTILITIES

SHEET NO.  
4.3

TOTAL SHEETS  
24



FOR BIDDING PURPOSES ONLY



**SILT FENCE**



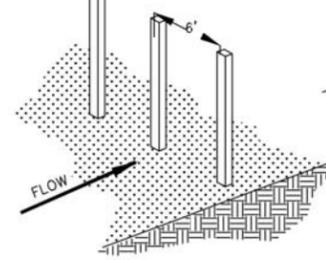
DEFINITION:

A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. THE SILT FENCE IS A TEMPORARY LINEAR BARRIER CONSTRUCTED OF SYNTHETIC FILTER FABRIC AND SUPPORTED BY WOODEN OR STEEL POSTS.

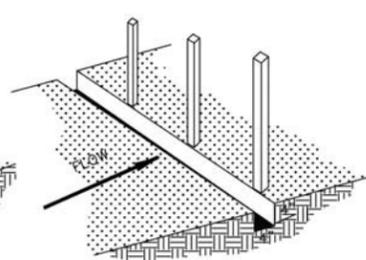
PURPOSES:

1. TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO REDUCE SEDIMENT IN RUNOFF FROM LEAVING THE SITE.
2. TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW-TO-MODERATE LEVEL CONCENTRATED FLOWS.

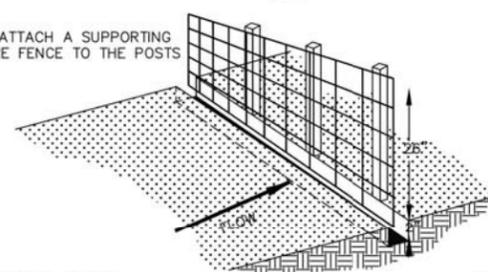
1. SET POSTS.



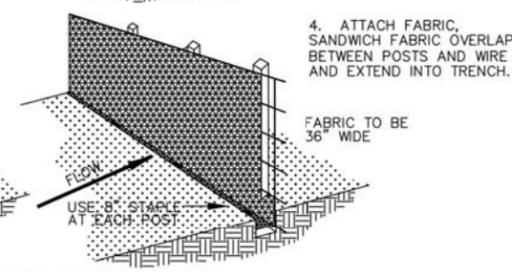
2. EXCAVATE A 4" X 4" TRENCH UPSLOPE ALONG THE POSTS.



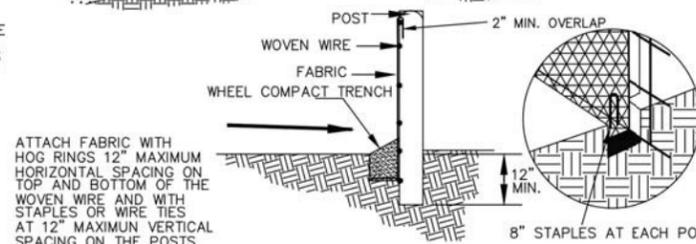
3. ATTACH A SUPPORTING WIRE FENCE TO THE POSTS



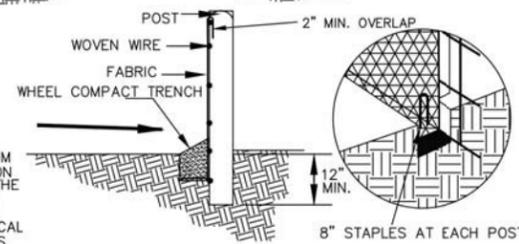
4. ATTACH FABRIC, SANDWICH FABRIC OVERLAP BETWEEN POSTS AND WIRE AND EXTEND INTO TRENCH.



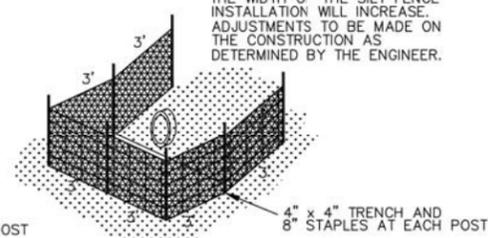
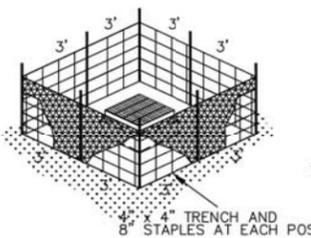
5. BACKFILL TRENCH. IF ROCK TYPE SOILS ARE ENCOUNTERED, UTILIZE 30 TO 40 LB SANDBAGS BUTTED END TO END TO PREVENT UNDERFLOW.



ATTACH FABRIC WITH HOG RINGS 12" MAXIMUM HORIZONTAL SPACING ON TOP AND BOTTOM OF THE WOVEN WIRE AND WITH STAPLES OR WIRE TIES AT 12" MAXIMUM VERTICAL SPACING ON THE POSTS.



ON MULTIPLE PIPE INSTALLATIONS, THE WIDTH OF THE SILT FENCE INSTALLATION WILL INCREASE. ADJUSTMENTS TO BE MADE ON THE CONSTRUCTION AS DETERMINED BY THE ENGINEER.



CITY OF RAPID CITY

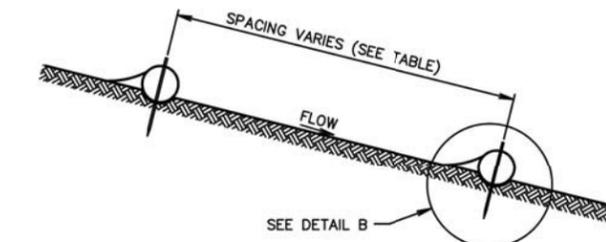
PUBLIC WORKS DEPARTMENT

**SILT FENCE  
 (WOVEN WIRE)**

DATE: 2-16-12  
 SEC.-SHT.  
 150-2

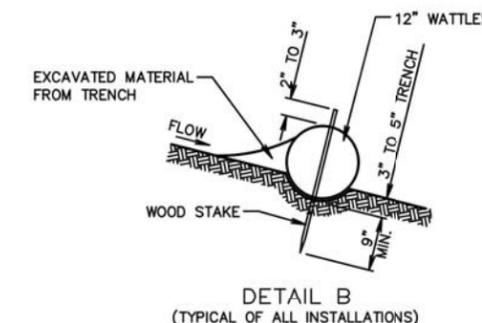


**SEDIMENT CONTROL WATTLE**

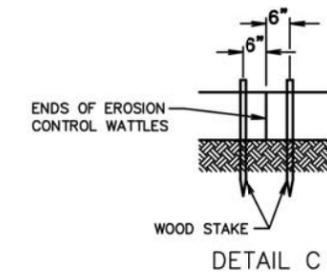


ELEVATION VIEW  
 CUT OR FILL SLOPE INSTALLATION

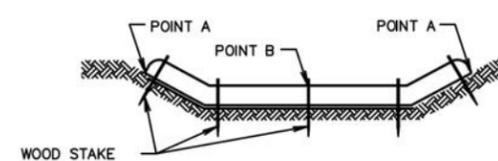
CUT OR FILL SLOPE * INSTALLATION	
SLOPE	SPACING (FT)
1:1	10
2:1	20
3:1	30
4:1	40



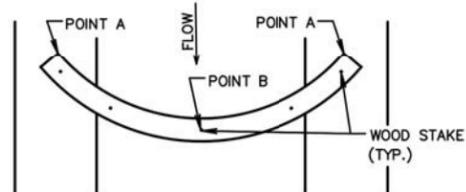
DETAIL B  
 (TYPICAL OF ALL INSTALLATIONS)



DETAIL C



SECTION A-A



PLAN VIEW  
 DITCH INSTALLATION

GENERAL NOTES:

AT CUT OR FILL SLOPE INSTALLATIONS, WATTLES SHALL BE INSTALLED ALONG THE CONTOUR AND PERPENDICULAR TO THE WATER FLOW.

AT DITCH INSTALLATIONS, POINT 'A' MUST BE HIGHER THAN POINT 'B' TO ENSURE THAT WATER FLOWS OVER THE WATTLE AND NOT AROUND THE ENDS.

THE CONTRACTOR SHALL DIG A 3" TO 5" TRENCH, INSTALL THE WATTLE TIGHTLY IN THE TRENCH SO THAT DAYLIGHT CAN NOT BE SEEN UNDER THE WATTLE, AND THEN COMPACT THE SOIL EXCAVATED FROM THE TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. SEE DETAIL B.

THE STAKES SHALL BE 1"x2" OR 2"x2" WOOD STAKES, THE STAKES SHALL BE PLACED 6" FROM THE ENDS OF THE WATTLES AND THE SPACING OF THE STAKES ALONG THE WATTLES SHALL BE 3' TO 4'.

WHERE INSTALLING RUNNING LENGTHS OF WATTLES, THE CONTRACTOR SHALL BUTT THE SECOND WATTLE TIGHTLY AGAINST THE FIRST AND SHALL NOT OVERLAP THE ENDS. SEE DETAIL C.

DITCH INSTALLATION	
GRADE	SPACING (FT)
2%	150
3%	100
4%	75
5%	50

CITY OF RAPID CITY

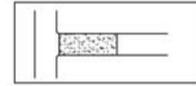
PUBLIC WORKS DEPARTMENT

**SEDIMENT CONTROL WATTLE**

DATE: 2-16-12  
 SEC. - SHT.  
 150-3

FOR BIDDING PURPOSES ONLY

		PROJECT	SHEET NO.	TOTAL SHEETS
		OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	4.5	24
PLOTING DATE:		EROSION AND SEDIMENT CONTROL DETAILS		



VEHICLE TRACKING CONTROL

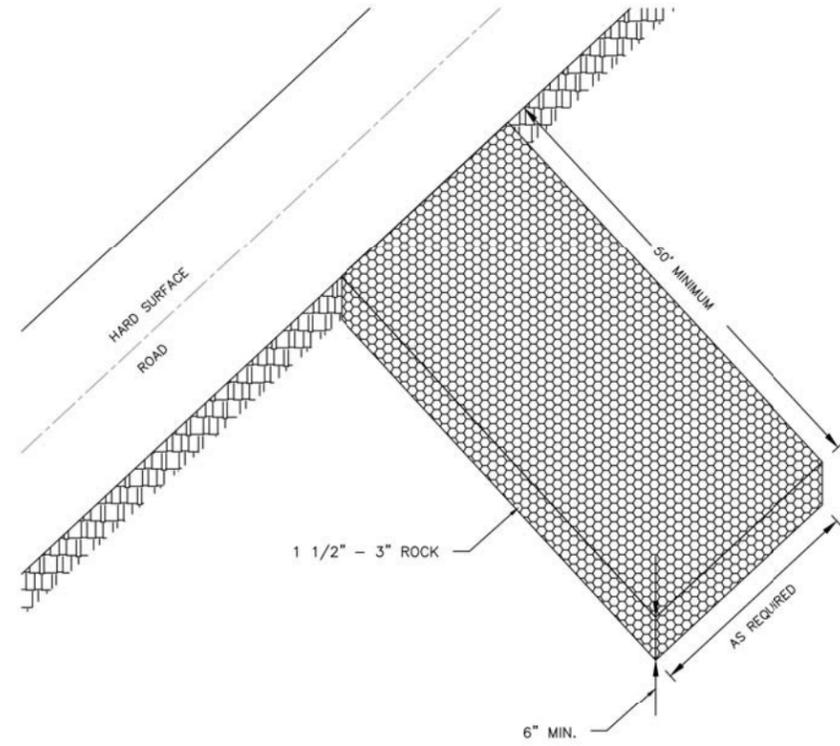


DEFINITION:

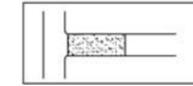
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE

PURPOSE:

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO ROADS BY MOTOR VEHICLES OR RUNOFF



CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TEMPORARY VEHICLE TRACKING CONTROL	DATE: 2-16-12
	SEC.-SHT. 150-9



VEHICLE TRACKING CONTROL



DEFINITION:

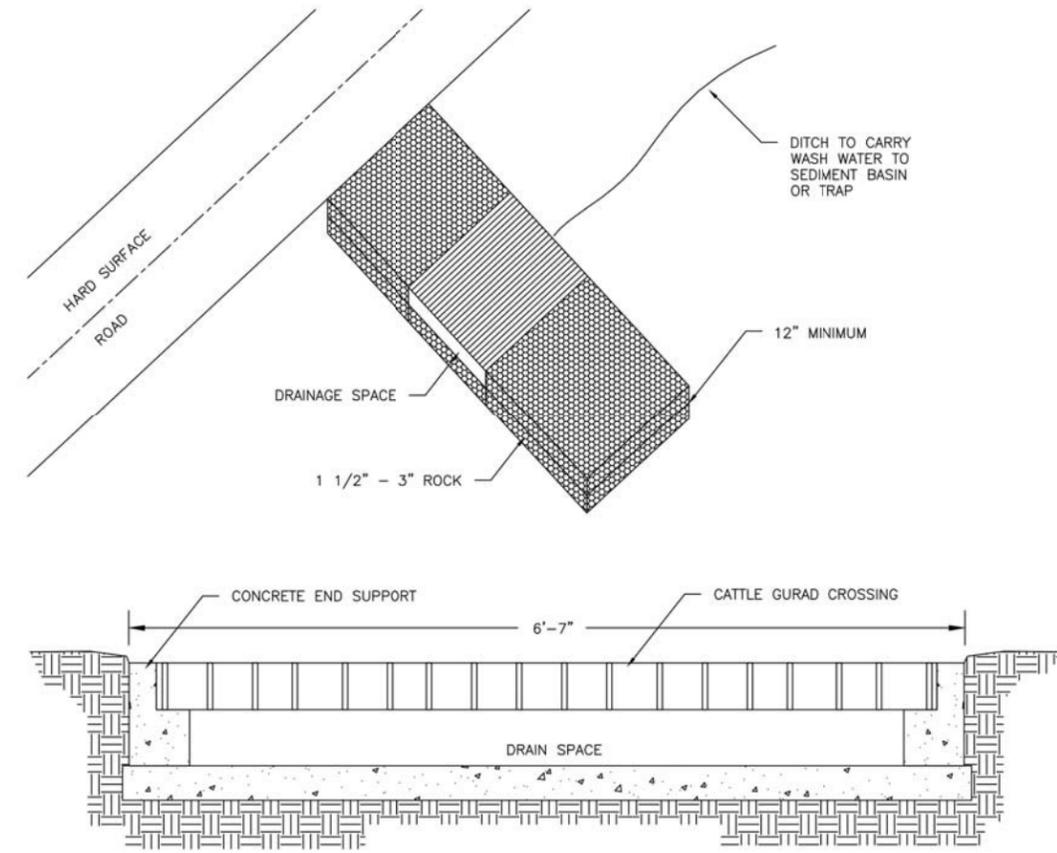
A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE, EQUIPPED WITH A WASH RACK

PURPOSES

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO ROADS BY MOTOR VEHICLES OR RUNOFF

NOTE:

ONLY APPLICABLE FOR SITES GREATER THAN 2 ACRES IN SIZE



CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TEMPORARY VEHICLE TRACKING CONTROL WITH WASH RACK	DATE: 2-16-12
	SEC.-SHT. 150-10

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**SANITARY SEWER MANHOLE NOTES:**

1+50.0 - 0.5' RT REPLACE MANHOLE BASE MH 2-1  
 2+76.0 - 0.0' LT INSTALL MH 2-2

**SANITARY SEWER MAIN NOTES:**

STA 2+76.0 - 0.0' LT TO STA 1+50.0 - 0.5' RT INSTALL 126 LF - 12" PVC (C-900) (GREEN) SANITARY SEWER MAIN  
 STA 3+01.0 - 0.0' RT TO STA 2+76.0 - 0.0' LT INSTALL 26 LF - 12" HDPE SANITARY SEWER MAIN

**PIPE BURSTING NOTES:**

STA 6+12.5 - 0.0' LT TO STA 3+01.0 - 0.0' RT PIPE BURST 312 LF - 12" SANITARY SEWER MAIN.

**SURFACING NOTES:**

STA 1+44.1 - 3.9' LT TO STA 3+09.4 - 1.4' RT REMOVE AND REPLACE 162.2 SY - 10" CONCRETE PAVEMENT PER SDDOT STANDARD PLATES PROVIDED IN THESE PLANS  
 GRAVEL CUSHION - 54.8 TON (6-INCH THICK)

**REMOVAL NOTES:**

STA 1+50.0 - 0.5' RT TO STA 2+98.2 - 0.2' LT REMOVE 149 LF - 10" CONCRETE SEWER MAIN. (INCIDENTAL)  
 STA 2+98.2 - 0.2' LT REMOVE MANHOLE G6-032.

\* REFER TO SDDOT PLANS FOR ADDITIONAL SURFACE RESTORATION AND REMOVALS.

**FOR BIDDING PURPOSES ONLY**

**FEC Ferber Engineering**  
 PLOTTING DATE: 12/11/13

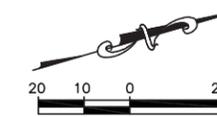


<b>PROJECT</b>	OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES
<b>SHEET NO.</b>	5.1
<b>TOTAL SHEETS</b>	24
SANITARY SEWER PLAN STA 1+00 TO 4+00	

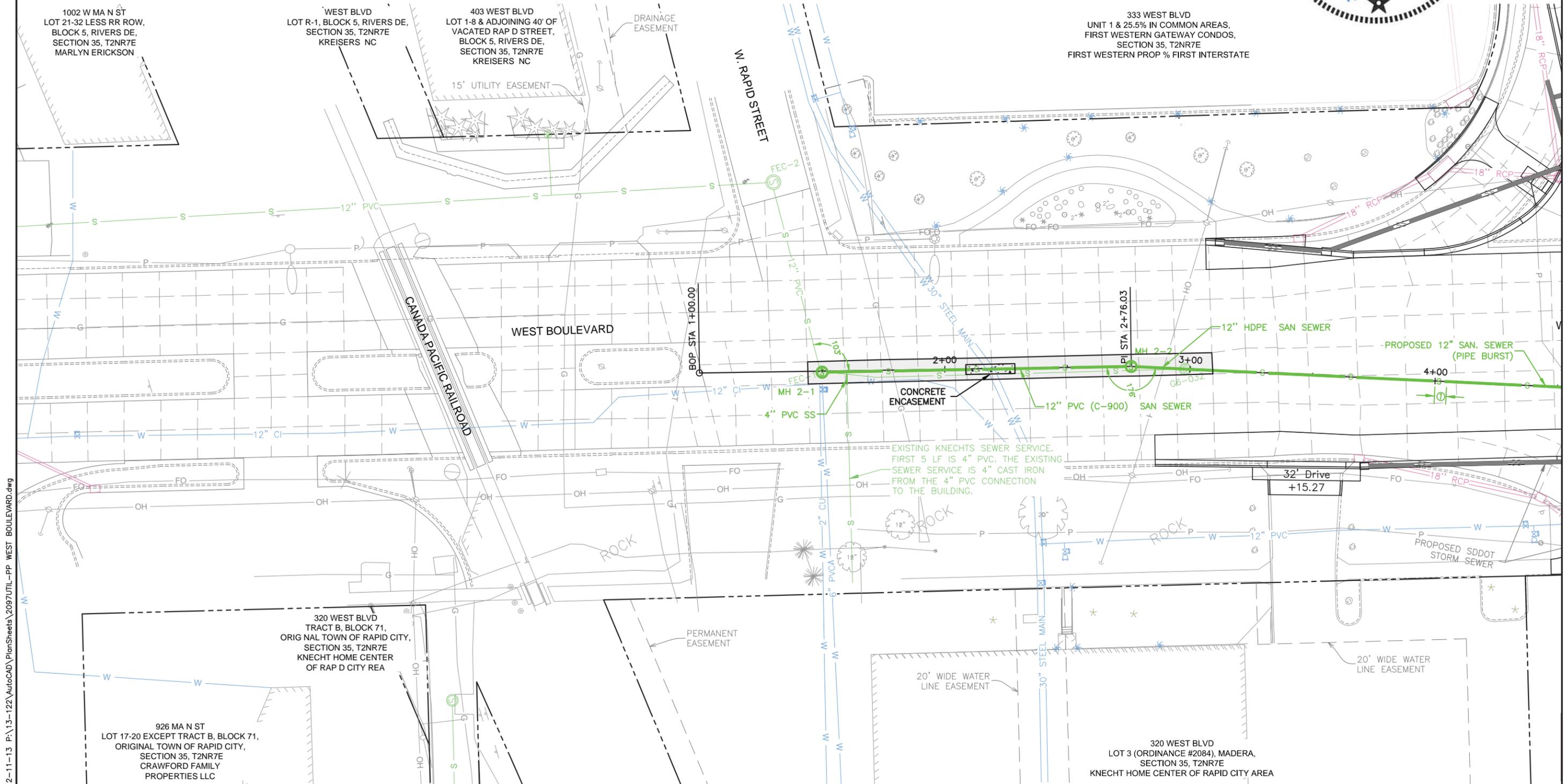
**SANITARY SEWER SERVICE NOTES:**

INSTALL PVC SANITARY SEWER SERVICE, SANITARY SEWER SERVICE SADDLE, AND RECONNECT SANITARY SEWER SERVICE AT THE LOCATIONS IDENTIFIED.

STATION	TO	STATION	LF	SIZE
1+60.0 - 1.3' RT		1+60.1 - 5.7' RT	4	4"



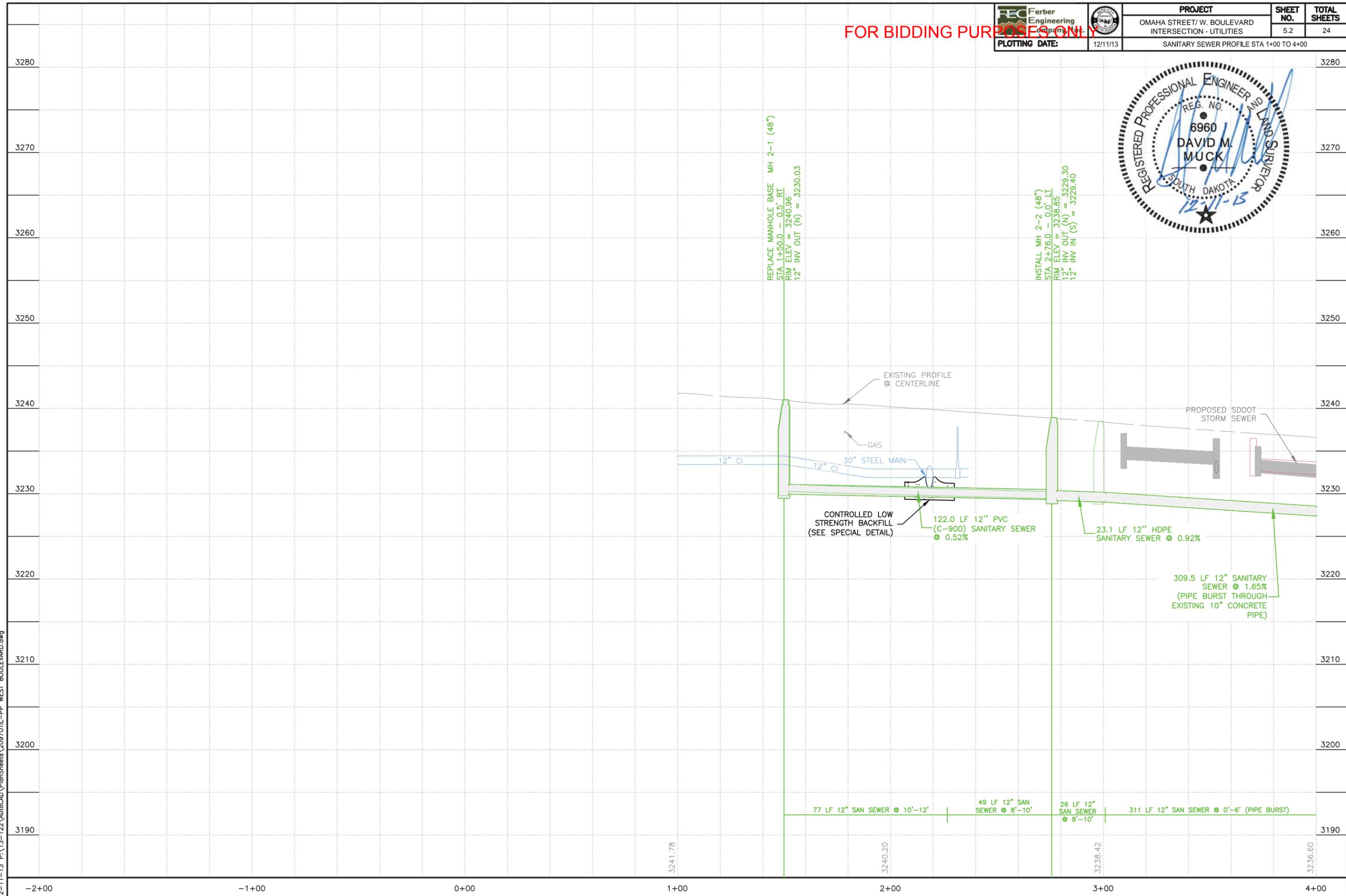
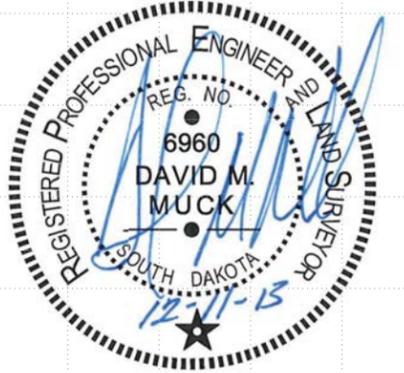
333 WEST BLVD  
 UNIT 1 & 25.5% IN COMMON AREAS,  
 FIRST WESTERN GATEWAY CONDOS,  
 SECTION 35, T2NR7E  
 FIRST WESTERN PROP % FIRST INTERSTATE



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FOR BIDDING PURPOSES ONLY

	PROJECT	SHEET NO.	TOTAL SHEETS
	OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	5.2	24
PLOTTING DATE: 12/11/13	SANITARY SEWER PROFILE STA 1+00 TO 4+00		



12-11-13 P:\13-122\AutoCAD\PlanSheets\2097UTIL-PP WEST BOULEVARD.dwg

**SANITARY SEWER MANHOLE NOTES:**

6+12.5 - 0.0' LT      INSTALL MH 2-3

**SANITARY SEWER MAIN NOTES:**

STA 7+75.6 - 0.1' LT TO      INSTALL 164 LF - 12" PVC SANITARY  
 STA 6+12.5 - 0.0' LT      SEWER MAIN  
 (CONNECT TO EXISTING MH G6-064)

**NOTES:**

CITY OF RAPID CITY UTILITY MAINTENANCE ATTEMPTED TO POT HOLE THE EXACT LOCATION OF THE 42-INCH RCP CASING UNDER I-190 BUT WERE UNSUCCESSFUL IN AT 10- FEET +/- . PRIOR TO INSTALLATION OF THE MAIN BETWEEN MH 2-3 AND G6-063, THE CONTRACTOR SHALL VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF THIS CASING TO THE ENGINEER. VERTICAL SLOPE ADJUSTMENT MAY BE NECESSARY DEPENDING ON THE 42-INCH RCP CASING. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

10" CONCRETE SANITARY SEWER VIDEO COMMENTS (SPOT ID ALONG ALIGNMENT SHOWN IN PLAN)			
SPOT ID	STATION	TO STATION	COMMENT
1	4+32.2 - 0.0' LT	4+36.8 - 0.0' LT	2" TO 3" SAG IN THE SEWER MAIN
2	5+13.9 - 0.0' LT		EXISTING INACTIVE SEWER SERVICE TAP
3	5+20.2 - 0.0' LT	5+28.2 - 0.0' LT	3" TO 4" SAG IN THE SEWER MAIN
4	5+35.2 - 0.0' LT	5+41.2 - 0.0' LT	3" SAG IN THE SEWER MAIN
5	5+48.2 - 0.0' LT	5+66.2 - 0.0' LT	4" TO 5" SAG IN THE SEWER MAIN
6	5+83.2 - 0.0' LT	5+96.2 0.0' LT	3" TO 4" SAG IN THE SEWER MAIN
7	6+25.9 - 2.9' LT	6+29.8 - 3.7' LT	3" SAG IN THE SEWER MAIN

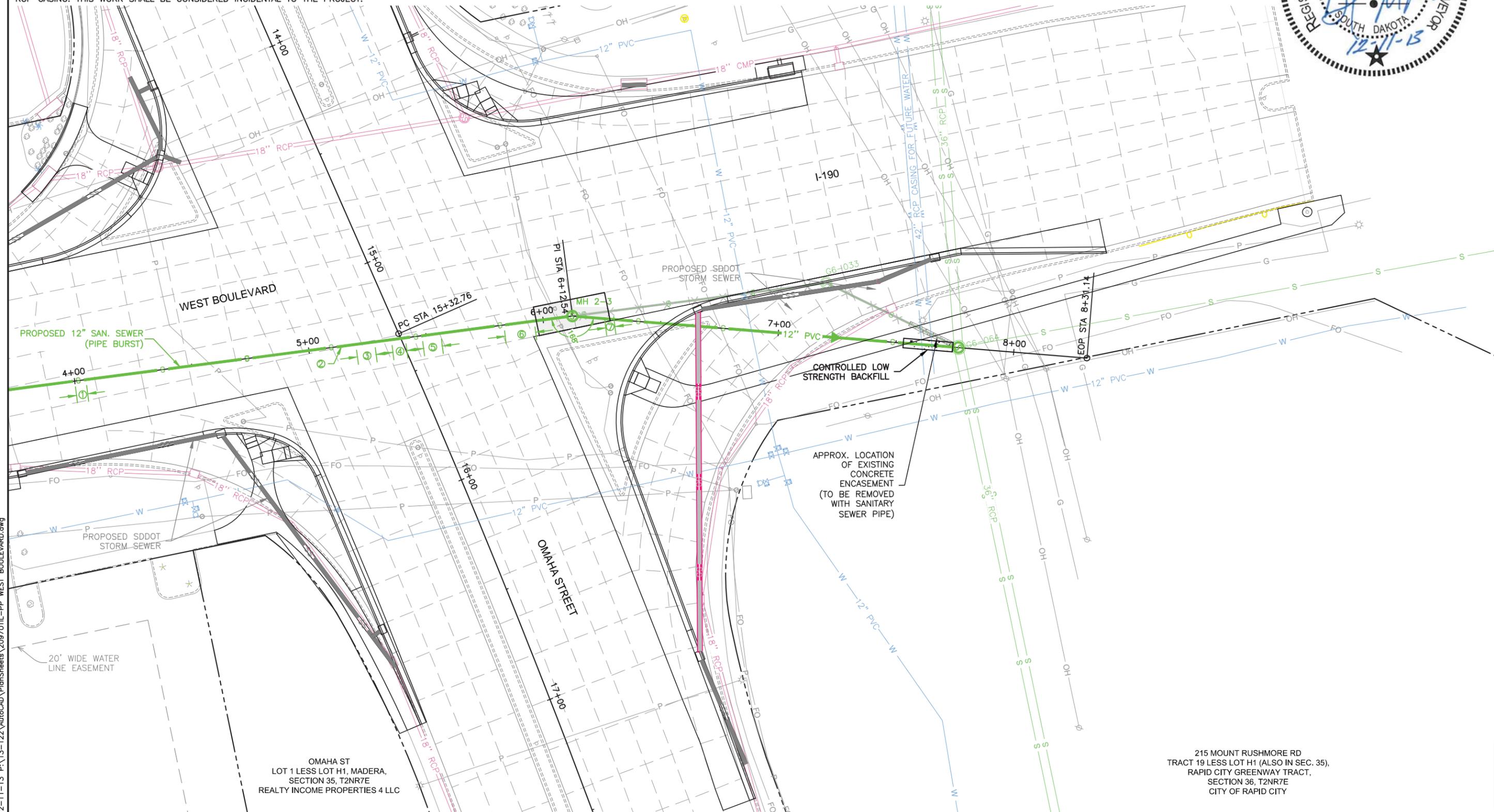
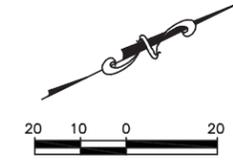
**REMOVAL NOTES:**

- STA 7+18.2 - 22.8' LT      ABANDON MANHOLE G6-033.
- STA 6+12.6 - 0.0' LT TO      ABANDON 104 LF - 10" SANITARY SEWER MAIN  
 STA 7+18.2 - 22.8' LT
- STA 7+18.2 - 22.8' LT TO      ABANDON 63 LF - 10" SANITARY SEWER MAIN.  
 STA 7+76.5 - 0.1' LT
- STA 5+96.6 - 5.9' LT TO      REMOVE AND REPLACE 41.8 SY - 10" CONCRETE PAVEMENT  
 STA 6+28.6 - 0.7' RT      PER SDDOT STANDARD PLATES REFERENCED IN THESE PLANS  
 GRAVEL CUSION 14.1 TON - (6-INCHS THICK)

\* REFER TO SDDOT PLANS FOR ADDITIONAL SURFACE RESTORATION AND REMOVALS.

		<b>PROJECT</b>	<b>SHEET NO.</b>	<b>TOTAL SHEETS</b>
		OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	5.3	24
<b>PLOTTING DATE:</b>		SANITARY SEWER PLAN STA 4+00 TO 10+00 PL		
12/11/13				

**FOR BIDDING PURPOSES ONLY**

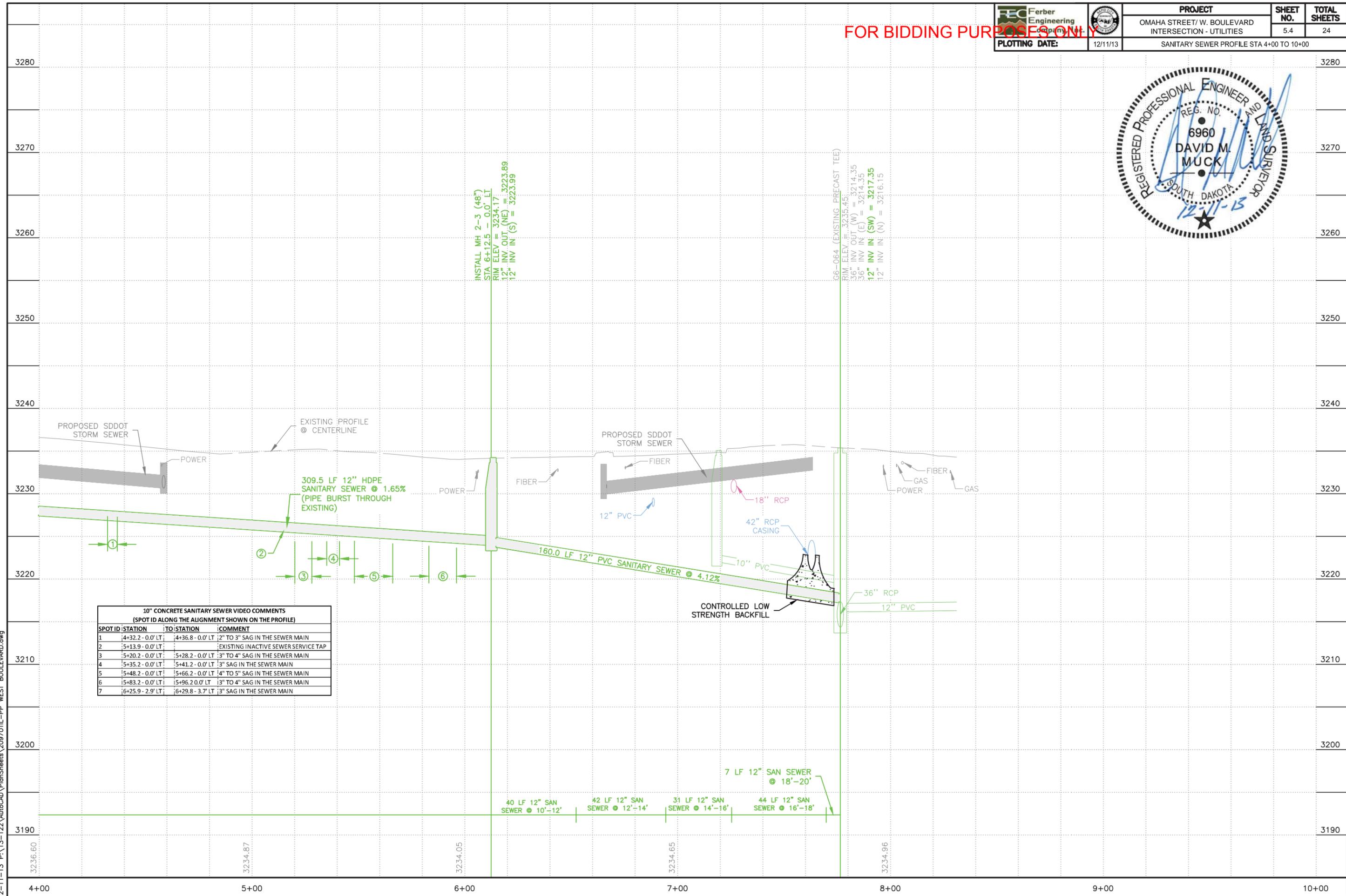


OMAHA ST  
 LOT 1 LESS LOT H1, MADERA,  
 SECTION 35, T2NR7E  
 REALTY INCOME PROPERTIES 4 LLC

215 MOUNT RUSHMORE RD  
 TRACT 19 LESS LOT H1 (ALSO IN SEC. 35),  
 RAPID CITY GREENWAY TRACT,  
 SECTION 36, T2NR7E  
 CITY OF RAPID CITY

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FOR BIDDING PURPOSES ONLY



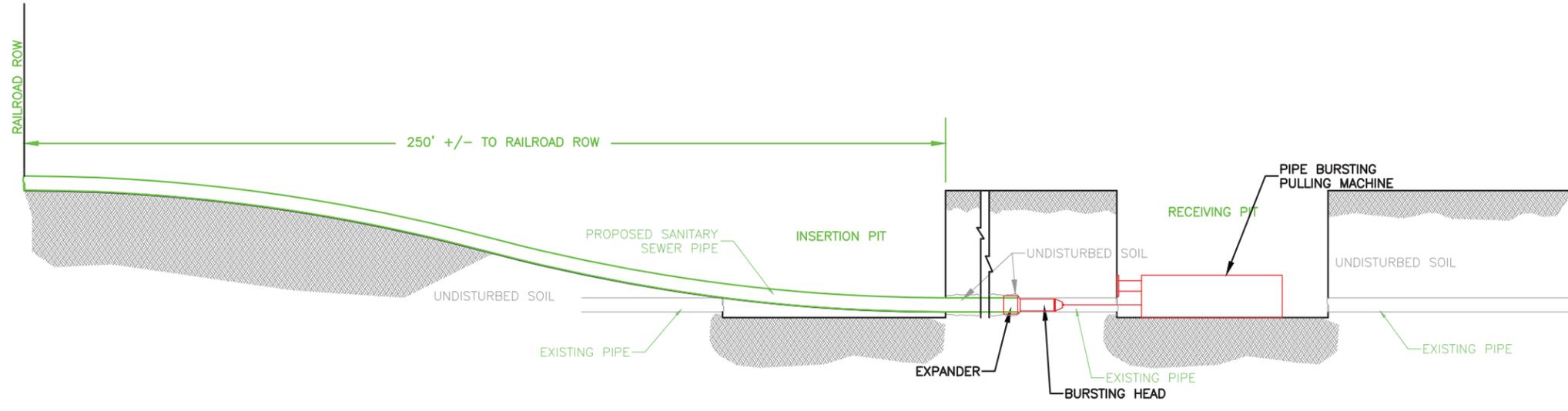
**10" CONCRETE SANITARY SEWER VIDEO COMMENTS**  
(SPOT ID ALONG THE ALIGNMENT SHOWN ON THE PROFILE)

SPOT ID	STATION	TO STATION	COMMENT
1	4+32.2 - 0.0' LT	4+36.8 - 0.0' LT	2" TO 3" SAG IN THE SEWER MAIN
2	5+13.9 - 0.0' LT		EXISTING INACTIVE SEWER SERVICE TAP
3	5+20.2 - 0.0' LT	5+28.2 - 0.0' LT	3" TO 4" SAG IN THE SEWER MAIN
4	5+35.2 - 0.0' LT	5+41.2 - 0.0' LT	3" SAG IN THE SEWER MAIN
5	5+48.2 - 0.0' LT	5+66.2 - 0.0' LT	4" TO 5" SAG IN THE SEWER MAIN
6	5+83.2 - 0.0' LT	5+96.2 - 0.0' LT	3" TO 4" SAG IN THE SEWER MAIN
7	6+25.9 - 2.9' LT	6+29.8 - 3.7' LT	3" SAG IN THE SEWER MAIN

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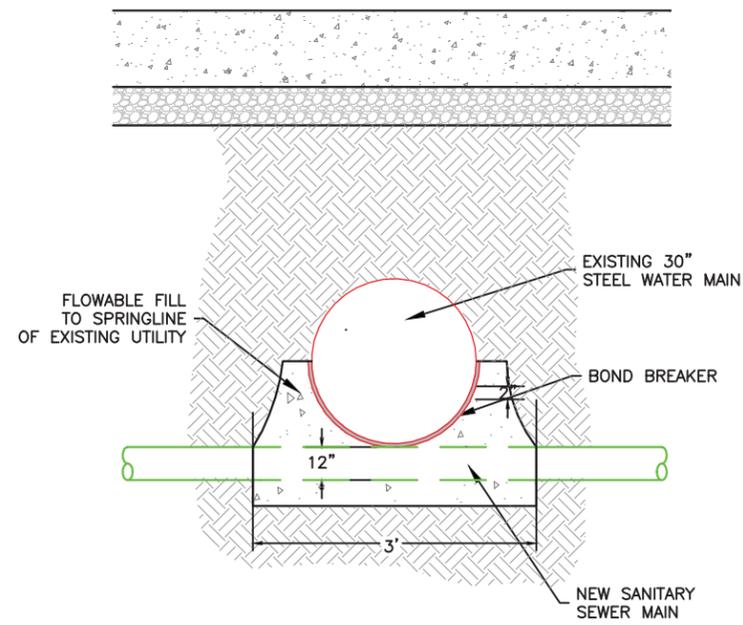
FOR BIDDING PURPOSES ONLY

 PLOTTING DATE: 12/11/13	 12/11/13	<b>PROJECT</b> OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	<b>SHEET NO.</b> 6.1	<b>TOTAL SHEETS</b> 24
		SPECIAL DETAILS		

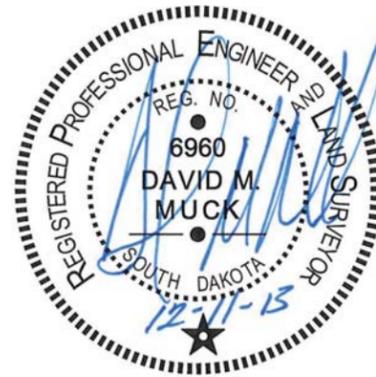


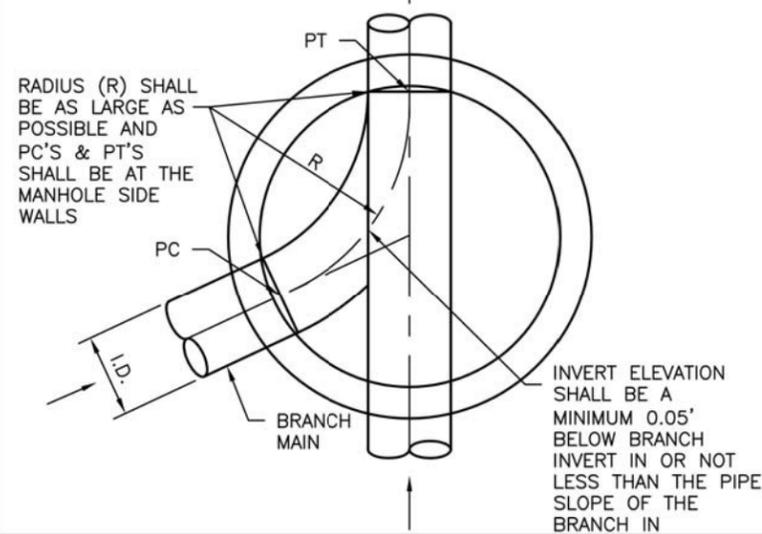
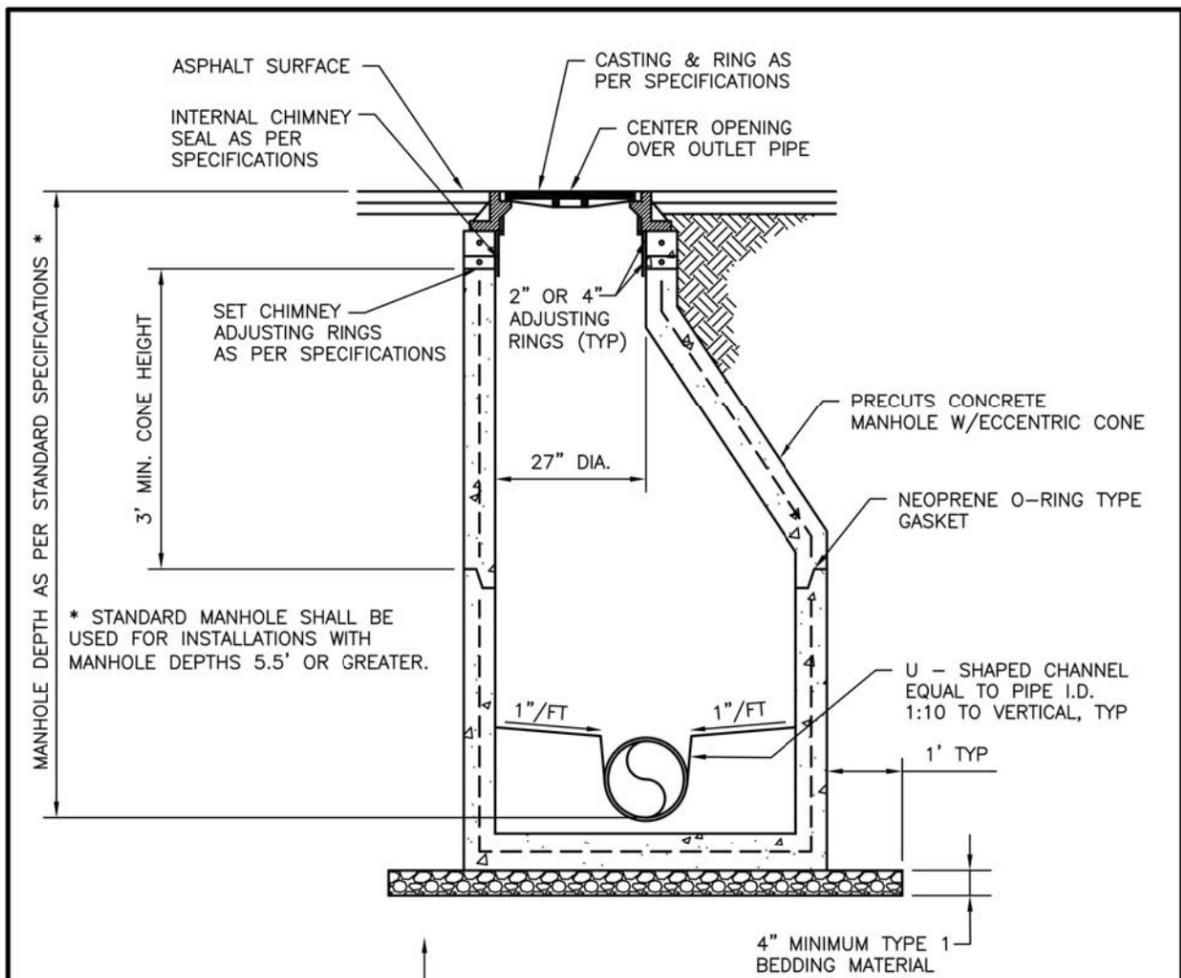
PIPE BURSTING DETAIL  
N.T.S.

PIPE BURSTING NOTES:  
DETAILS FOR OTHER METHODS OF PIPE BURSTING HAVE NOT BEEN PROVIDED. IF CONTRACTOR CHOOSES ANOTHER METHOD FOR PIPE BURSTING, SUBMITTAL MATERIALS SHALL INCLUDE APPROPRIATE SECTIONS AND PROFILES TO DEMONSTRATE PROPOSED METHODOLOGY.

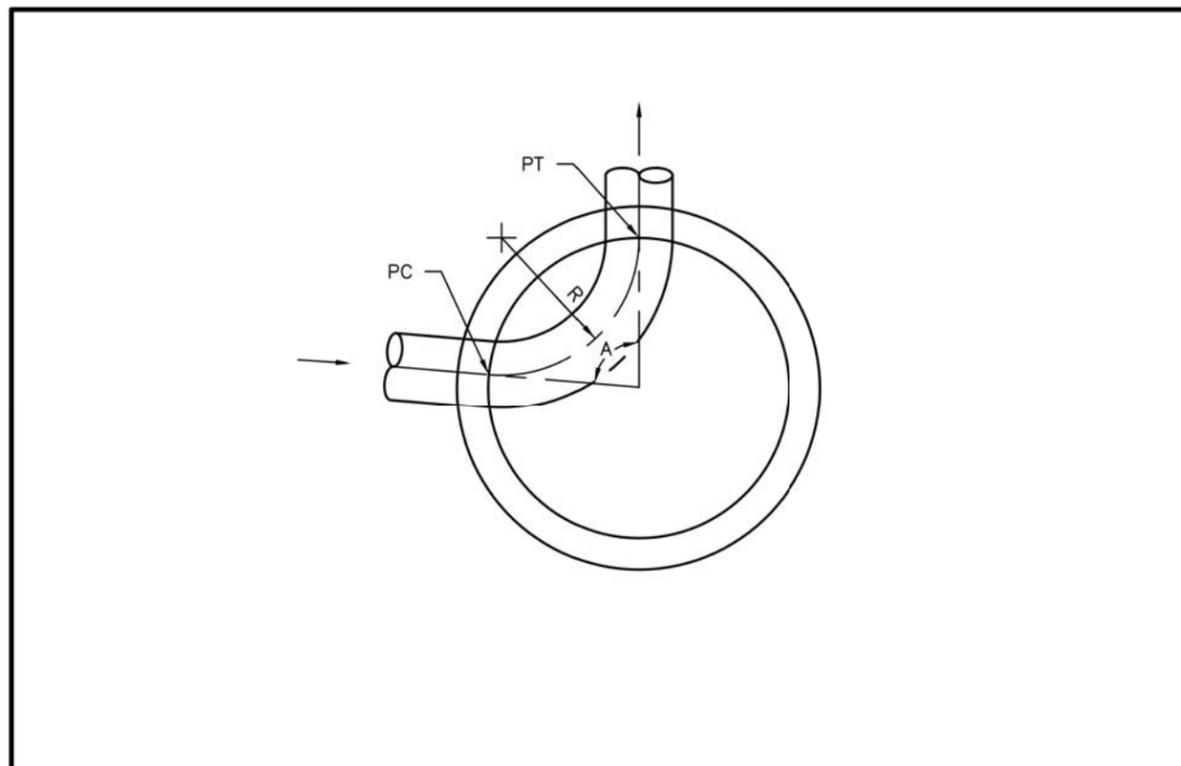


CONTROLLED LOW STRENGTH BACKFILL DETAIL  
N.T.S.





- NOTES:**
1. PC'S & PT'S ARE TO BE WITHIN THE MANHOLE.
  2. ALL INVERTS TO BE U-SHAPED CHANNEL EQUAL TO PIPE I.D. AND SHALL BE CONSTRUCTED WITH SWEEPS.
  3. A MINIMUM RADIUS (R) OF 2.5 TIMES THE I.D. OF THE BRANCH MAIN IS REQUIRED FOR ALL SWEEPS. IF THE 2.5 TIMES THE I.D. OF THE BRANCH CAN'T BE MET, A LARGER DIAMETER MANHOLE SHALL BE REQUIRED. SEE DETAIL SHEET 9-3.
  4. MANHOLE PIPE CONNECTOR SHALL BE A RESILIENT WATER TIGHT SEAL.



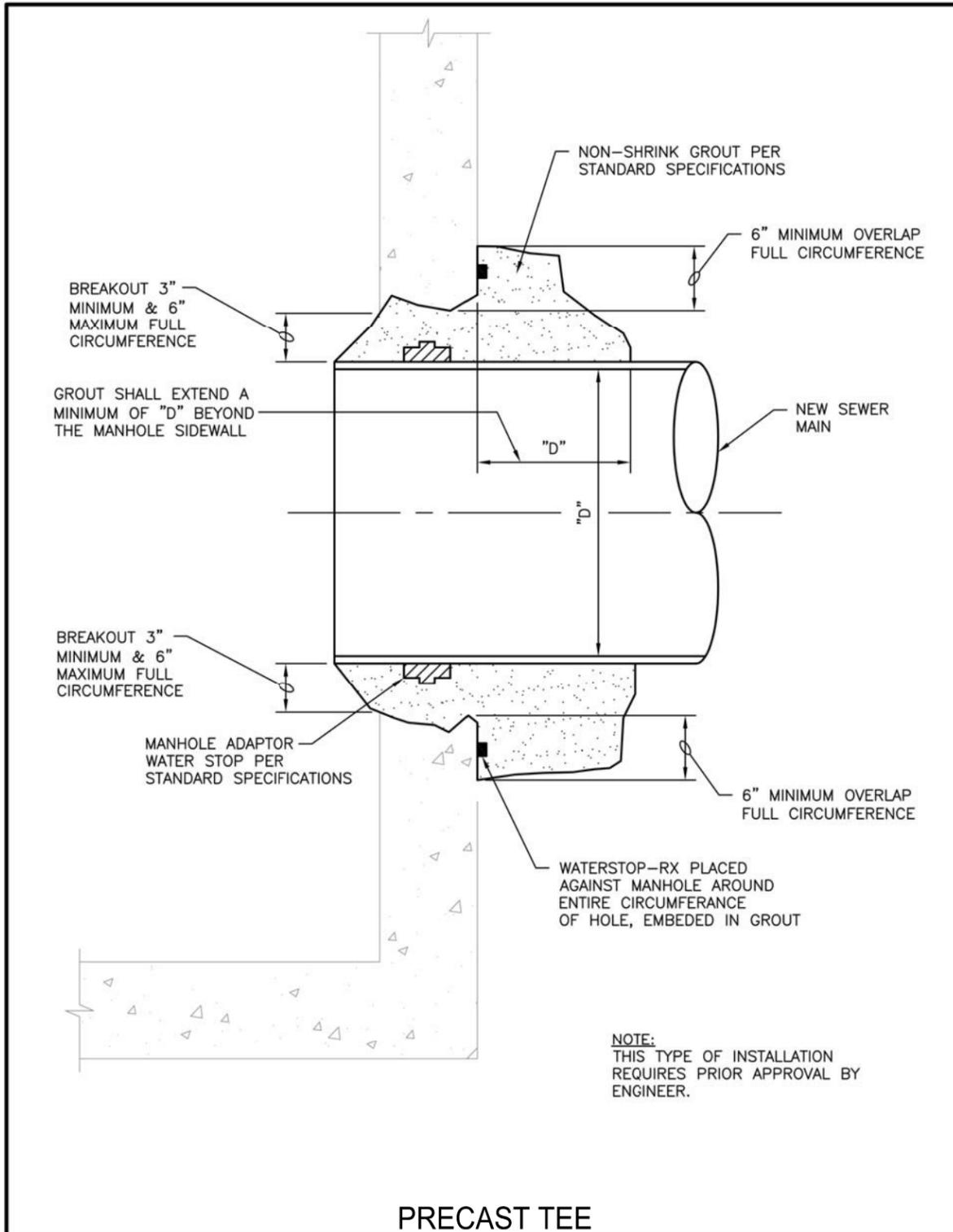
OUTLET PIPE DIA. INCHES	INLET PIPE DIA. INCHES	MIN. ANGLE "A" IN DEGREES				
		48" DIA.	60" DIA.	72" DIA.	84" DIA.	96" DIA.
8	8	80	75	75	75	75
10	8	81	75	75	75	75
10	10	94	80	75	75	75
12	8	81	75	75	75	75
12	10	94	81	75	75	75
12	12	104	91	80	75	75
15	8	83	75	75	75	75
15	10	95	81	75	75	75
15	12	106	92	81	75	75
15	15	117	104	94	84	77

■ ANGLES LESS THAN 90°

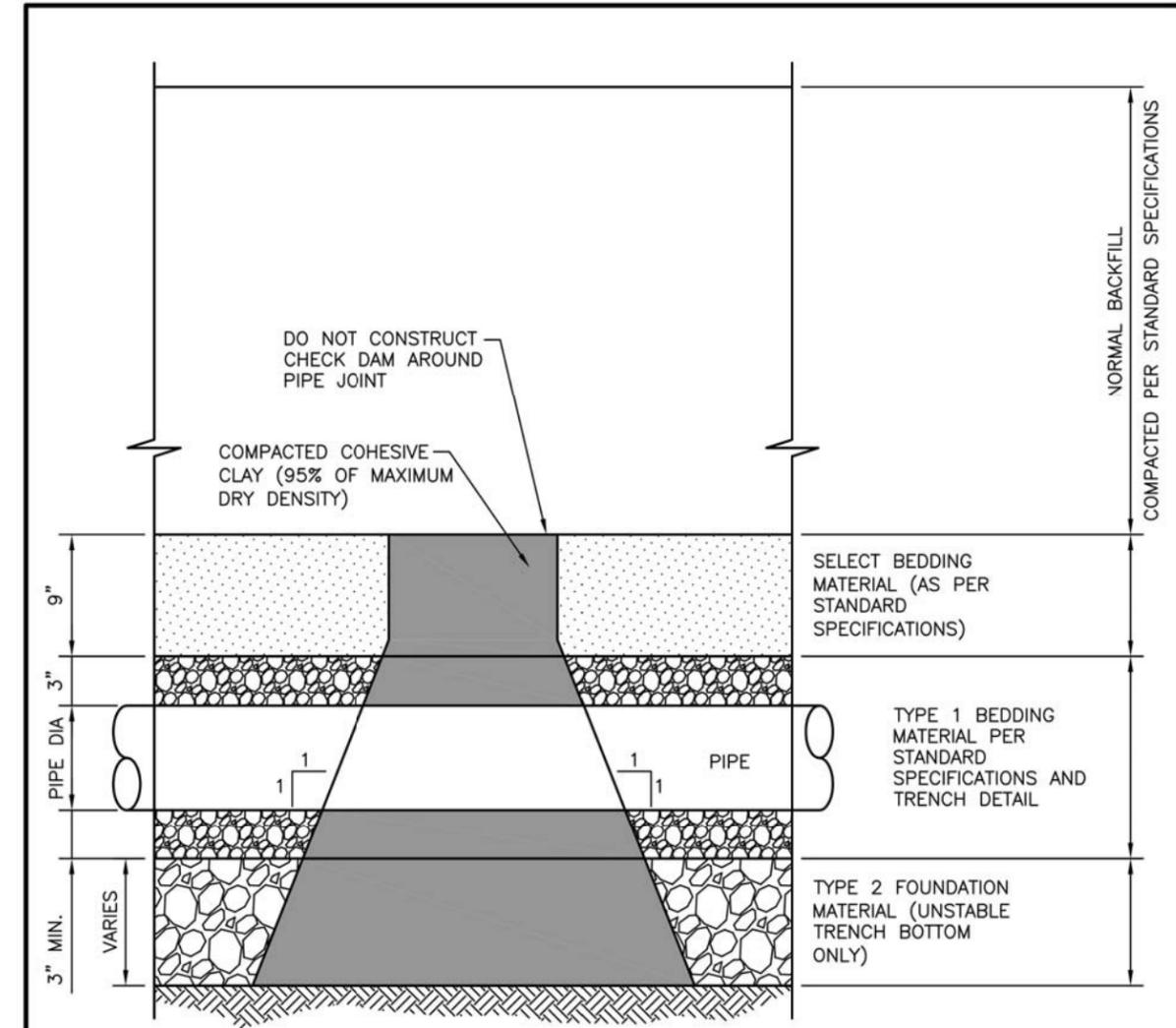
**NOTE:**  
"A" ANGLES LESS THAN 90° REQUIRE THE DESIGN ENGINEER TO SUBMIT A WRITTEN REQUEST AND JUSTIFICATION FOR A DESIGN EXCEPTION, AND OBTAIN CITY APPROVAL. IN NO CASE SHALL THE "A" ANGLE BE LESS THAN 75°.

FOR BIDDING PURPOSES ONLY

	PROJECT	SHEET NO.	TOTAL SHEETS
	OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	7.2	24
PLOTTING DATE: 12/5/13	RAPID CITY STANDARD DETAILS		



PRECAST TEE



ELEVATION

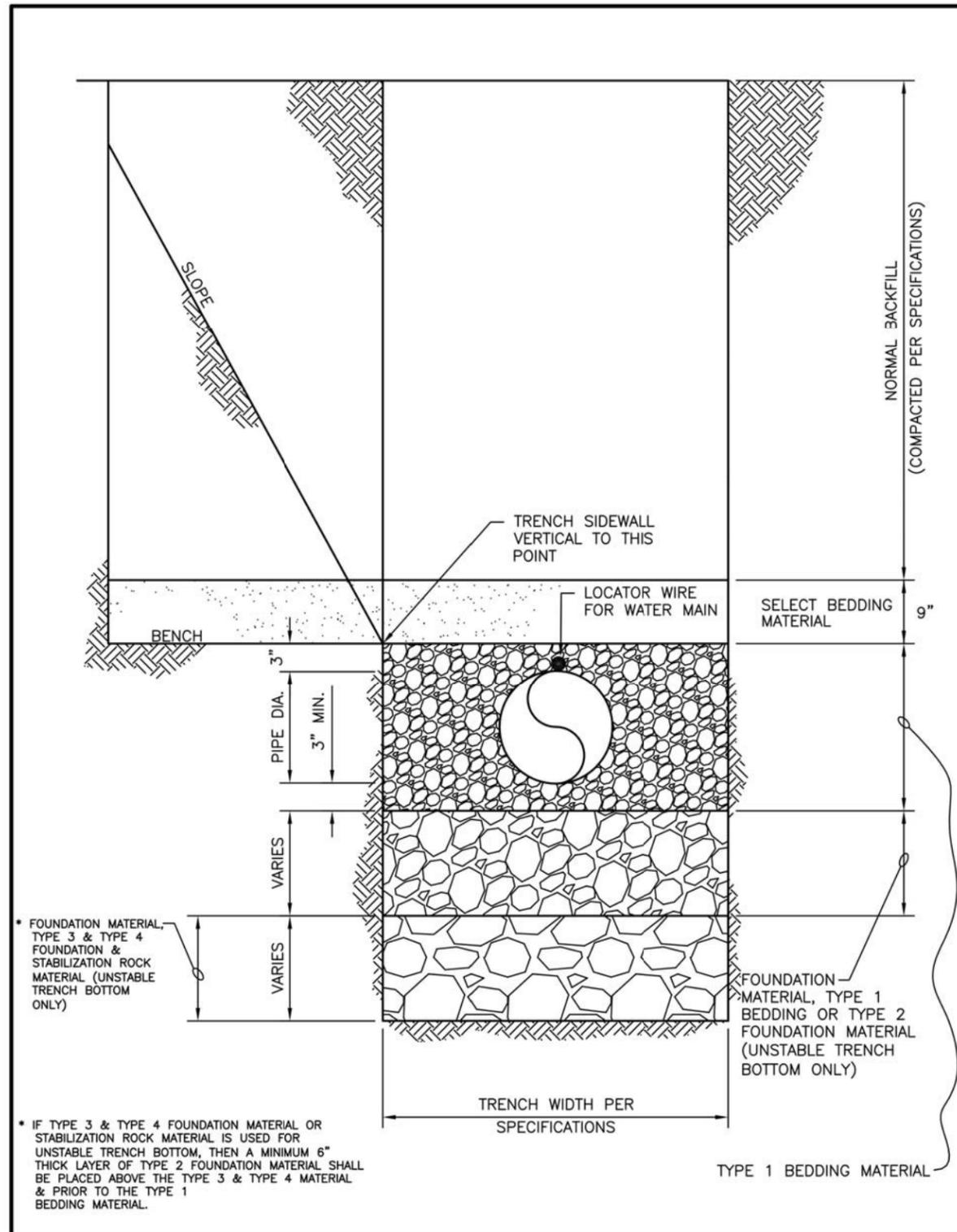
**NOTE:**  
 CHECK DAM INSTALLATION LOCATIONS SHALL BE AS INDICATED ON THE PLANS. HOWEVER DURING CONSTRUCTION, CHECK DAM INSTALLATION LOCATIONS MAY BE MOVED DUE TO FIELD CONDITIONS.  
 THE CHECK DAM SHALL EXTEND FROM THE BOTTOM OF THE EXCAVATION THROUGH THE BEDDING MATERIAL TO THE "NORMAL BACKFILL" AND SHALL EXTEND COMPLETELY TO EACH TRENCH SIDEWALL. CHECK DAM MATERIAL SHALL BE COMPACTED COHESIVE CLAY THAT CONTAINS A MINIMUM OF 25% MINUS NO. 200 SIEVE MATERIAL, WITH 70% PASSING A 3/4 INCH SIEVE. IF THE NORMAL EXCAVATED MATERIAL IS NOT SUITABLE FOR CONSTRUCTION OF THE CHECK DAM, THEN THE CONTRACTOR SHALL OBTAIN MATERIAL FROM OUTSIDE SOURCES. CHECK DAM INSTALLATION AND MATERIAL SHALL BE CONSIDERED AS INCIDENTAL TO THE PIPE INSTALLATION.

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
PIPE CONNECTION TO <del>EXISTING MANHOLE</del>	DATE: 5-1-07
(GROUTED CONNECTION)	SEC. SHT. 9-6

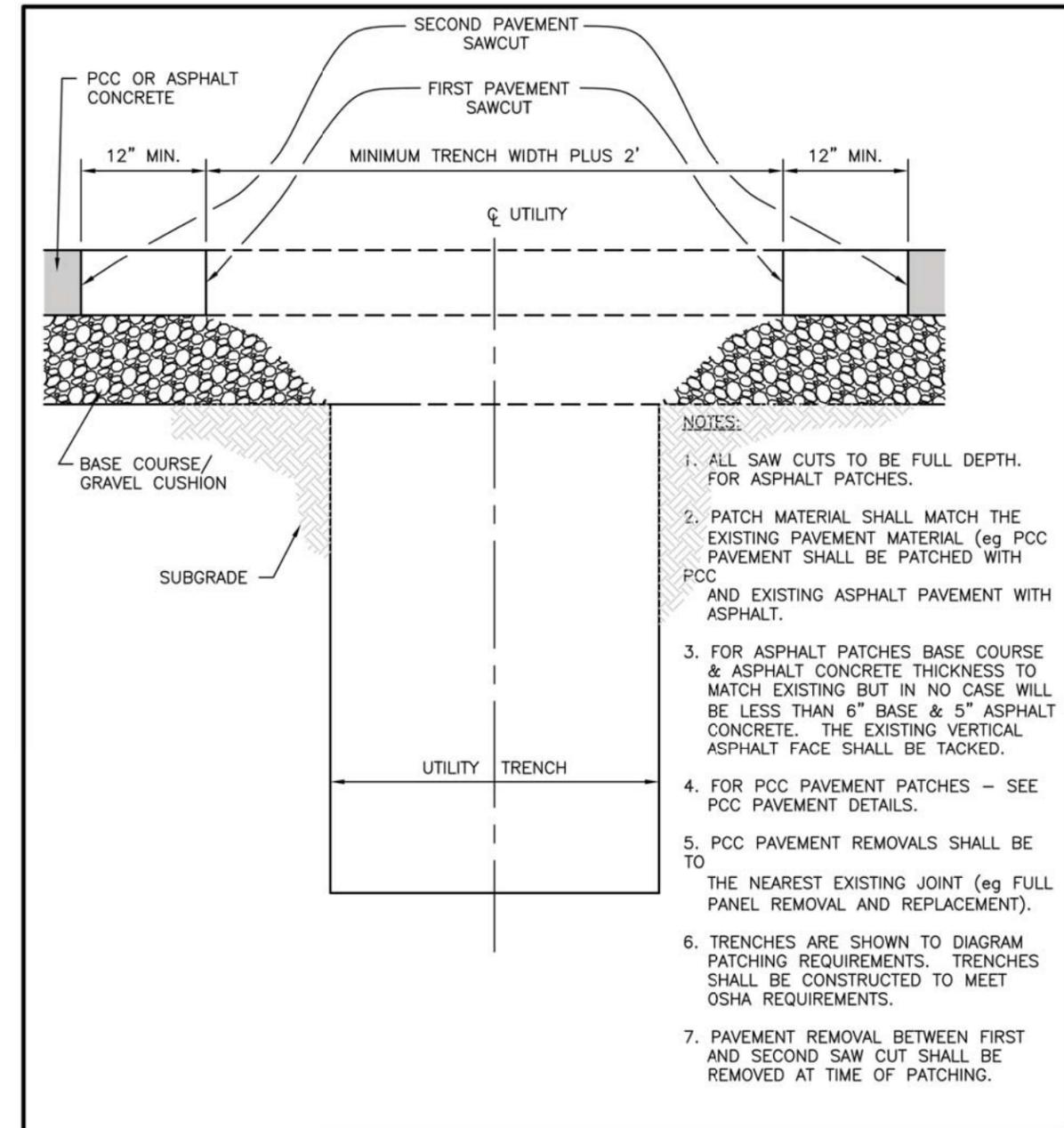
(MODIFIED)

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TYPICAL TRENCH CHECK DAM DETAIL	DATE: 5-1-07
FOR WATER & SEWER MAINS	SEC. SHT. 11-2

12-5-13 P:\13-122\AutoCAD\PlanSheets\2097DETAILS.dwg



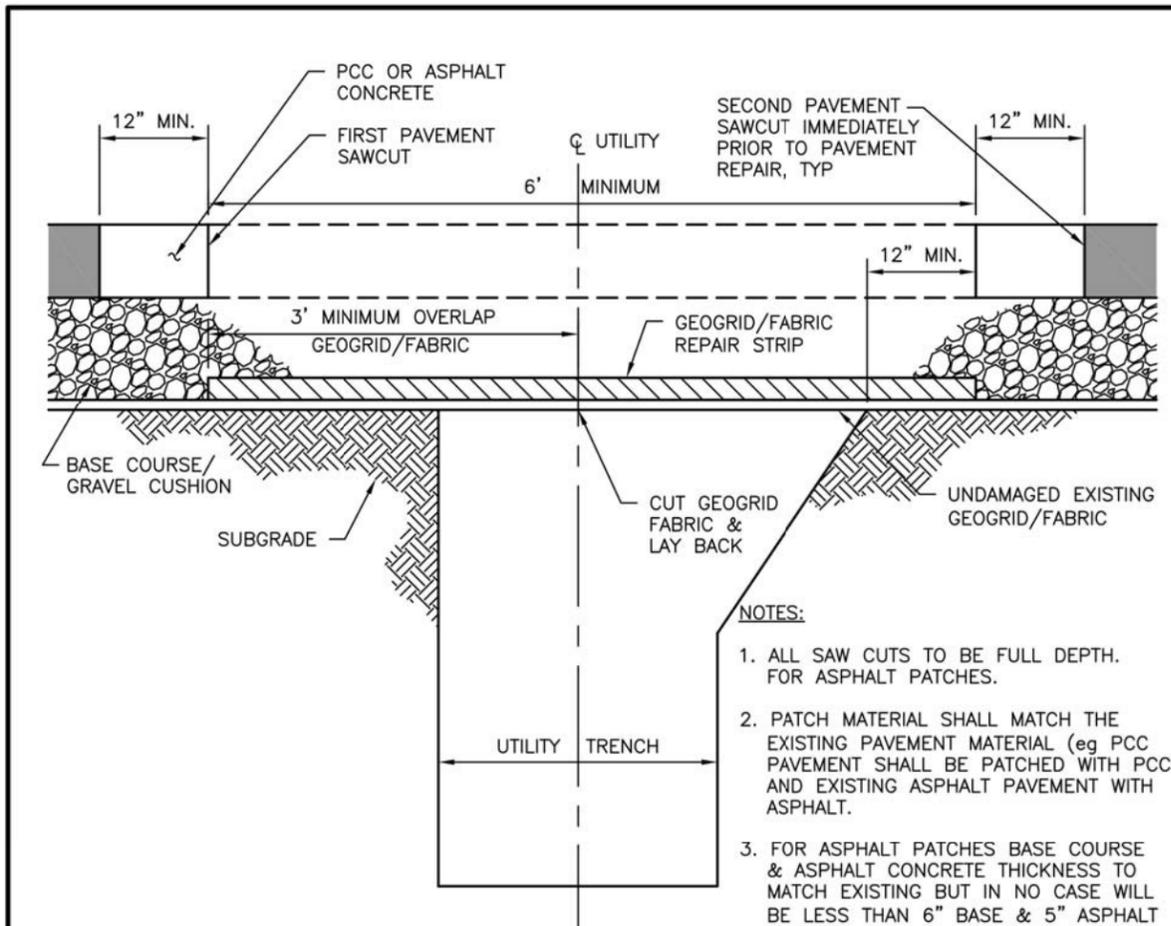
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT  
 TRENCH DETAIL FOR WATER & SEWER MAIN  
 DATE: 5-1-07  
 SEC. 11 SHT. 3



- NOTES:
1. ALL SAW CUTS TO BE FULL DEPTH. FOR ASPHALT PATCHES.
  2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT).
  3. FOR ASPHALT PATCHES BASE COURSE & ASPHALT CONCRETE THICKNESS TO MATCH EXISTING BUT IN NO CASE WILL BE LESS THAN 6" BASE & 5" ASPHALT CONCRETE. THE EXISTING VERTICAL ASPHALT FACE SHALL BE TACKED.
  4. FOR PCC PAVEMENT PATCHES - SEE PCC PAVEMENT DETAILS.
  5. PCC PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
  6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
  7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF PATCHING.

PIPE DIAMETER	MINIMUM WIDTH	MINIMUM BETWEEN FIRST SAWCUTS	MINIMUM BETWEEN SECOND SAWCUTS	PCC PAVEMENT
<8 in.	24"	4'	6'	SECOND SAWCUTS SHALL BE AT EXISTING JOINTS SEE NOTE #5
8in. - 12in.	30"	4'-6"	6'-6"	
14in. - 18in.	36"	5'	7'	
20in. - 21in.	42"	5'-6"	7'-6"	
24in. - 36in.	1.25 (PIPE OD) PLUS 12in. PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	
>36in.		MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT  
 UTILITY TRENCH PATCH DETAIL  
 DATE: 5-1-07  
 SEC. 41 SHT. 1

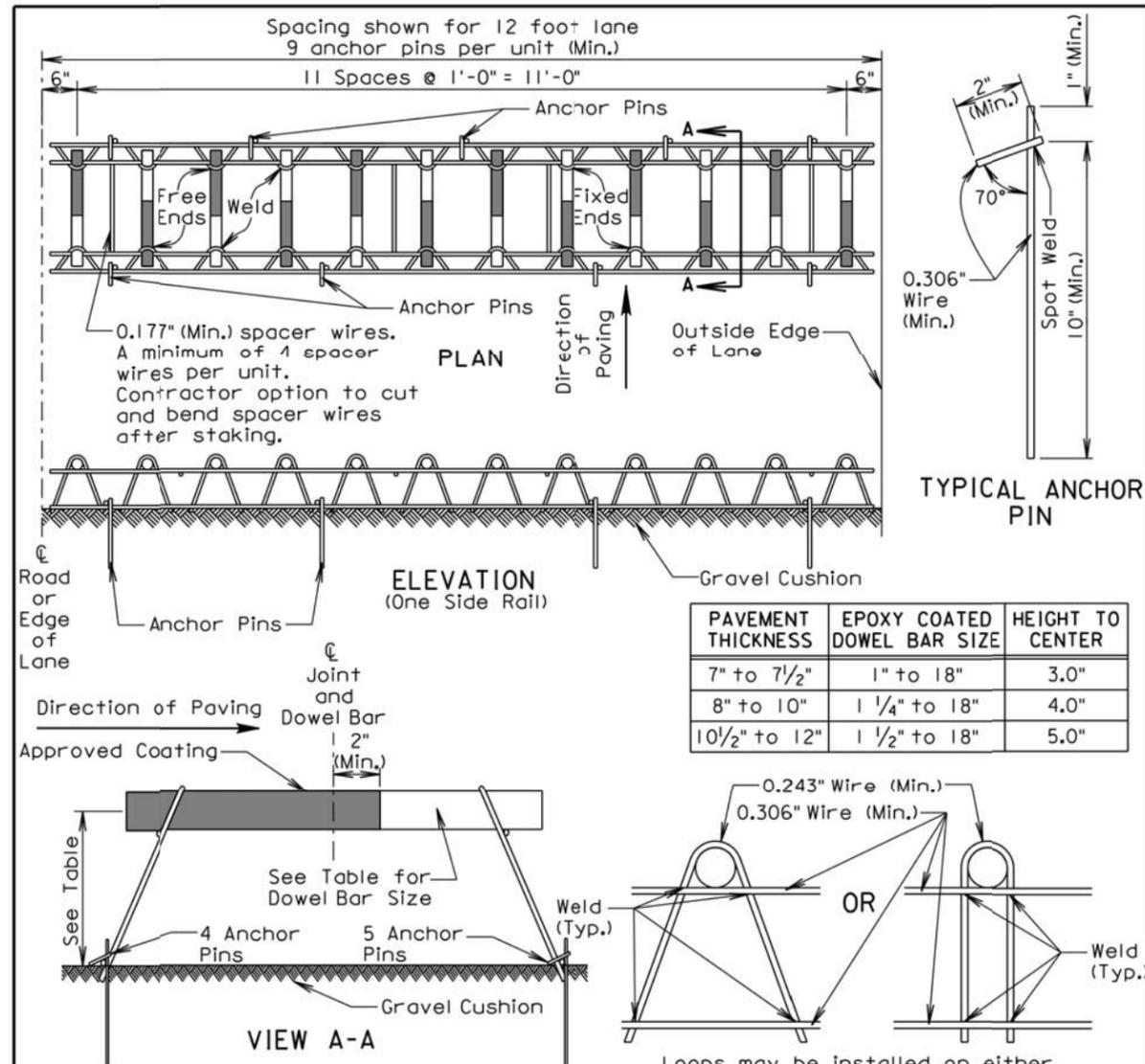


- NOTES:**
1. ALL SAW CUTS TO BE FULL DEPTH. FOR ASPHALT PATCHES.
  2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT).
  3. FOR ASPHALT PATCHES BASE COURSE & ASPHALT CONCRETE THICKNESS TO MATCH EXISTING BUT IN NO CASE WILL BE LESS THAN 6" BASE & 5" ASPHALT CONCRETE. THE EXISTING VERTICAL ASPHALT FACE SHALL BE TACKED.
  4. FOR PCC PAVEMENT PATCHES - SEE PCC PAVEMENT DETAILS.
  5. PCC PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
  6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
  7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF PATCHING.

TABLE 11-1 MINIMUM TRENCH WIDTH TABLE

PIPE DIAMETER	MINIMUM WIDTH	MINIMUM BETWEEN FIRST SAWCUTS	MINIMUM BETWEEN SECOND SAWCUTS	PCC PAVEMENT
<8 in.	24"	4'	6'	SECOND SAWCUTS SHALL BE AT EXISTING JOINTS SEE NOTE #5
8in. - 12in.	30"	4'-6"	6'-6"	
14in. - 18in.	36"	5'	7'	
20in. - 21in.	42"	5'-6"	7'-6"	
24in. - 36in.	1.25 (PIPE OD) PLUS 12in.	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	
>36in.	PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

CITY OF RAPID CITY		PUBLIC WORKS DEPARTMENT	
<h1>GEOGRID/FABRIC UTILITY TRENCH PATCH DETAIL</h1>		DATE: 5-1-07	
		SEC. 41	SHT. 2



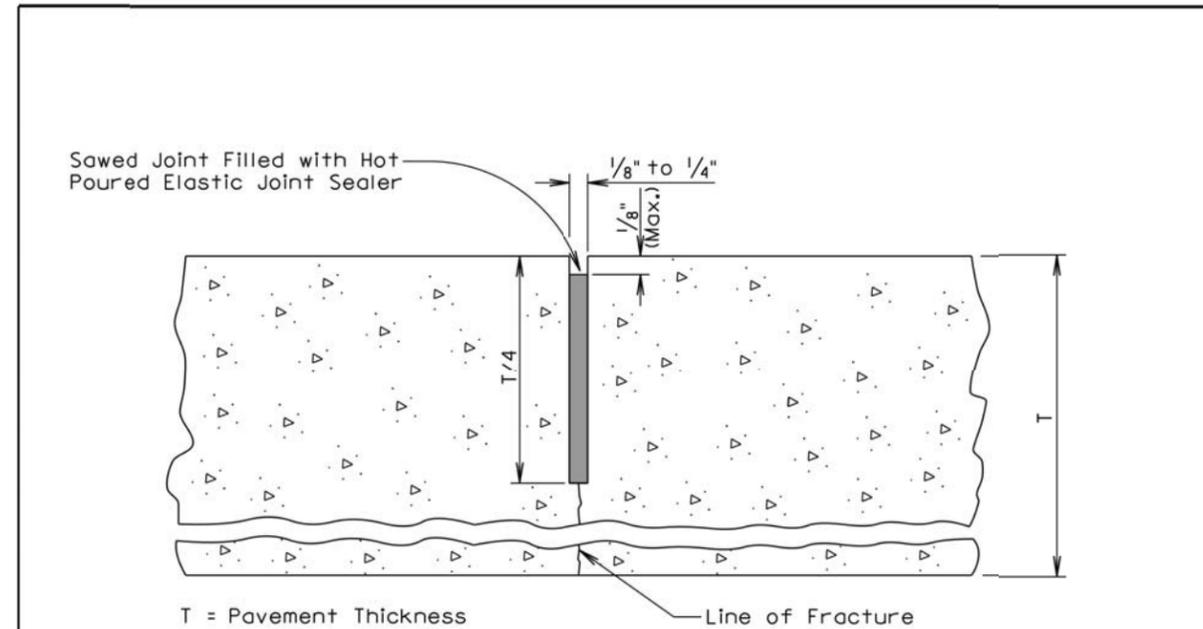
PAVEMENT THICKNESS	EPOXY COATED DOWEL BAR SIZE	HEIGHT TO CENTER
7" to 7 1/2"	1" to 18"	3.0"
8" to 10"	1 1/4" to 18"	4.0"
10 1/2" to 12"	1 1/2" to 18"	5.0"

**GENERAL NOTES:**

- Longitudinal joint tie bars shall be placed a minimum of 15 inches from the transverse contraction joint.
- Centerline of individual dowel bars shall be parallel to top of subgrade  $\pm 1/8$  inch in 18 inches and to all other dowel bars in the assembly  $\pm 1/16$  inch in 18 inches.
- Centerline of individual dowel bars shall be parallel to the centerline of the roadway  $\pm 1/2$  inch in 18 inches.
- The transverse contraction joints shall be sawed perpendicular to the centerline of the roadway and the dowel bars shall be centered on the sawed joint  $\pm 1$  inch.
- Supporting devices as shown on this sheet, or equivalent as approved by the Engineer, shall be used to maintain proper horizontal and vertical alignment of the dowel bars.

June 26, 2013

	<b>PCC PAVEMENT DOWEL BAR ASSEMBLY FOR TRANSVERSE CONTRACTION JOINTS</b> 12 Bar Assembly on Granular Base Material	PLATE NUMBER 380.01
		Sheet 1 of 1
Published Date: 3rd Qtr. 2013		



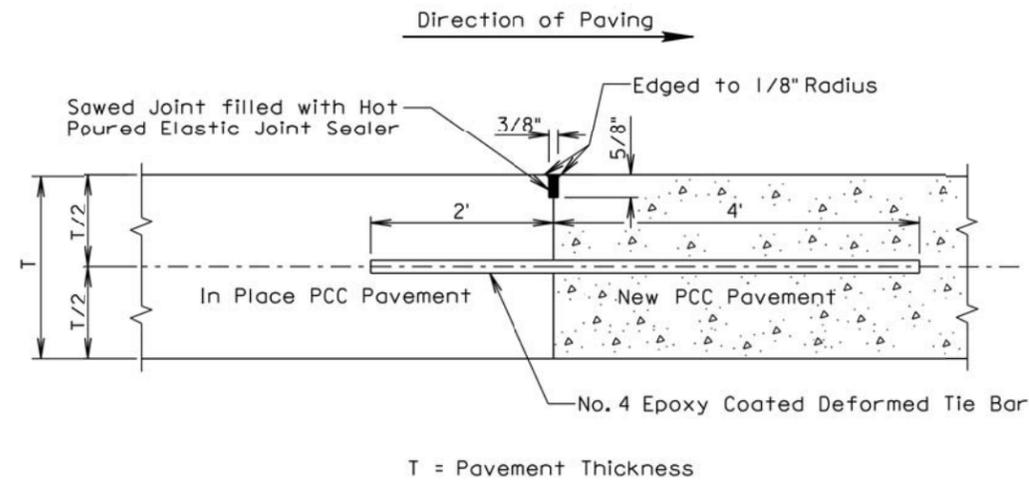
**GENERAL NOTES:**

- The saw cut to control cracking shall be a minimum of  $1/4$  the thickness of the pavement.
- All hot poured elastic joint sealer material spilled on the surface of the concrete pavement shall be removed as soon as the material has cooled. The extent of removal of material shall be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material shall be borne by the Contractor.

June 26, 2013

	<b>PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY</b>	PLATE NUMBER 380.05
		Sheet 1 of 1
Published Date: 3rd Qtr. 2013		

		PROJECT	SHEET NO.	TOTAL SHEETS
		OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	7.6	24
PLOTING DATE:		12/5/13	SDDOT STANDARD PLATES	



**GENERAL NOTES:**

No. 4 epoxy coated deformed tie bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

The minimum distance between a transverse construction joint with tie bars and an adjacent transverse contraction joint shall be 5 feet.

When a transverse construction joint is made, paving will not be allowed in this area for 12 hours.

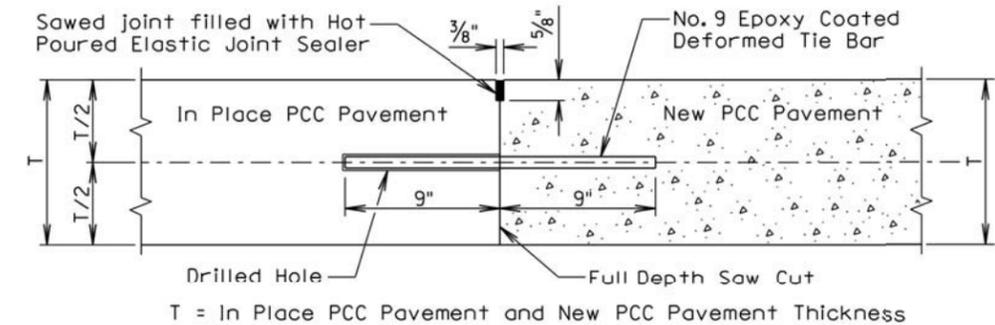
A transverse construction joint may be placed in lieu of the transverse contraction joint when shown in the plans.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

June 26, 2013

	<b>PCC PAVEMENT MID PANEL TRANSVERSE CONSTRUCTION JOINT</b>	PLATE NUMBER 380.07
		Sheet 1 of 1
Published Date: 3rd Qtr. 2013		

**TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS**



**GENERAL NOTES:**

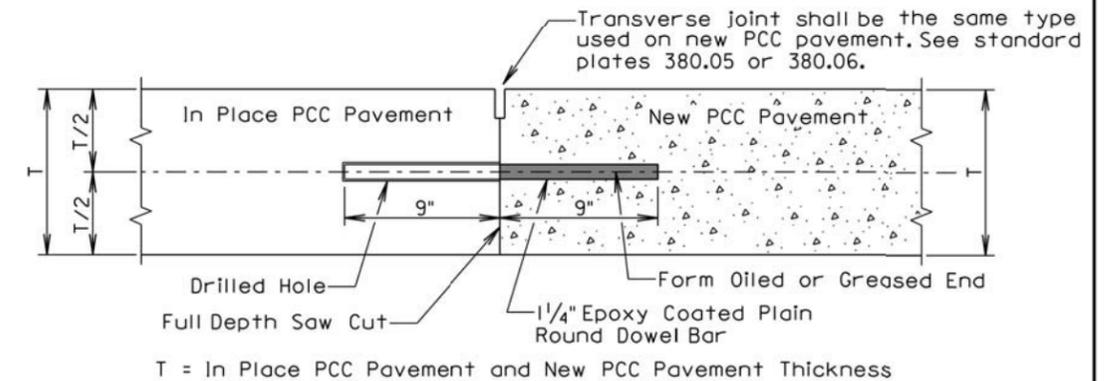
This detail shall be used when the transverse joint is less than 15 feet from the existing transverse contraction joint.

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

No. 9 epoxy coated deformed tie bars shall be spaced 18 inches center to center and shall be a minimum of 3 inches and a maximum of 9 inches from the pavement edges.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

**TRANSVERSE CONSTRUCTION JOINT WITH DOWEL BARS**



**GENERAL NOTES:**

This detail shall be used when the transverse joint is 15 feet or greater from the existing transverse contraction joint.

The plain round dowel bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

The 1 1/4" epoxy coated plain round dowel bars shall be spaced 12 inches center to center and shall be a minimum of 3 inches and a maximum of 6 inches from the pavement edges.

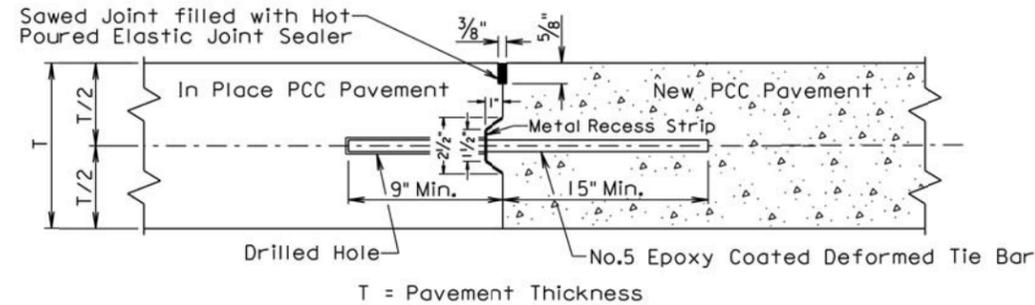
The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

June 26, 2013

	<b>PCC PAVEMENT TRANSVERSE CONSTRUCTION JOINTS WITH TIE BARS OR DOWEL BARS</b>	PLATE NUMBER 380.08
		Sheet 1 of 1
Published Date: 3rd Qtr. 2013		

		PROJECT	SHEET NO.	TOTAL SHEETS
		OMAHA STREET/ W. BOULEVARD INTERSECTION - UTILITIES	7.7	24
PLOTING DATE:		12/5/13	SDDOT STANDARD PLATES	

**LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS**  
(DRILLED IN BARS)



**GENERAL NOTES:**

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

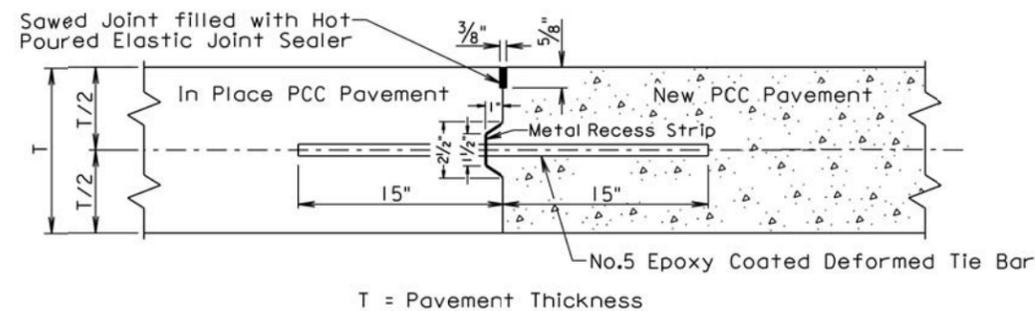
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

**LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS**  
(INSERTED OR FORMED IN BARS)



**GENERAL NOTES:**

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

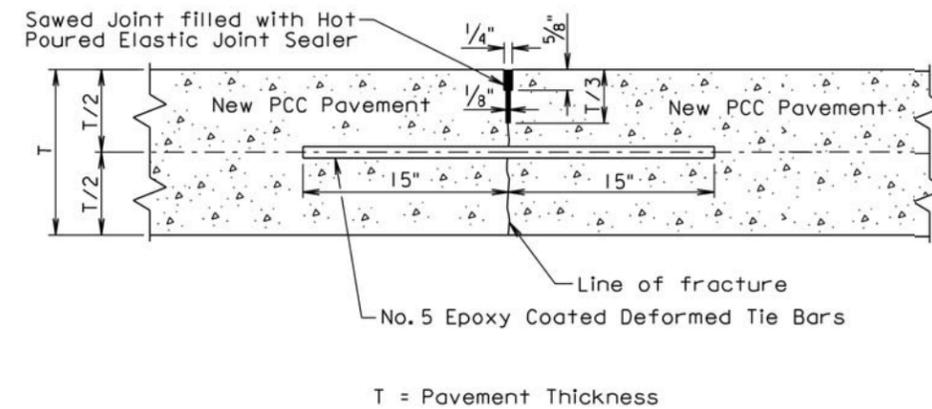
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS</b>	PLATE NUMBER 380.10
		Sheet 1 of 2
Published Date: 3rd Qtr. 2013		

**SAWED LONGITUDINAL JOINT WITH TIE BARS**  
(POURED MONOLITHICALLY)



**GENERAL NOTES:**

No.5 epoxy coated deformed tie bars shall be spaced 48 inches center to center.

The tie bars shall be placed a minimum of 15 inches from the existing transverse contraction joints.

The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

September 14, 2001

	<b>PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS</b>	PLATE NUMBER 380.10
		Sheet 2 of 2
Published Date: 3rd Qtr. 2013		