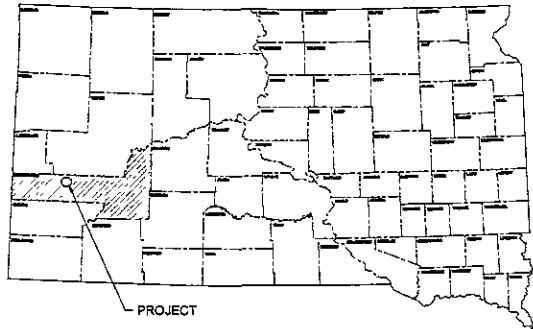


NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION

CITY OF RAPID CITY PROJECT NO. SSW02-1258
DECEMBER 2006

INDEX OF SHEETS

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RECEIVED

DEC 9 2006

Rapid City Growth
Management Department

**PROJECT
LOCATION**

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ENGINEER UNDER THE LAWS OF SOUTH DAKOTA.

DAN FERBER, P.E./L.S.
REGISTRATION NUMBER 4763

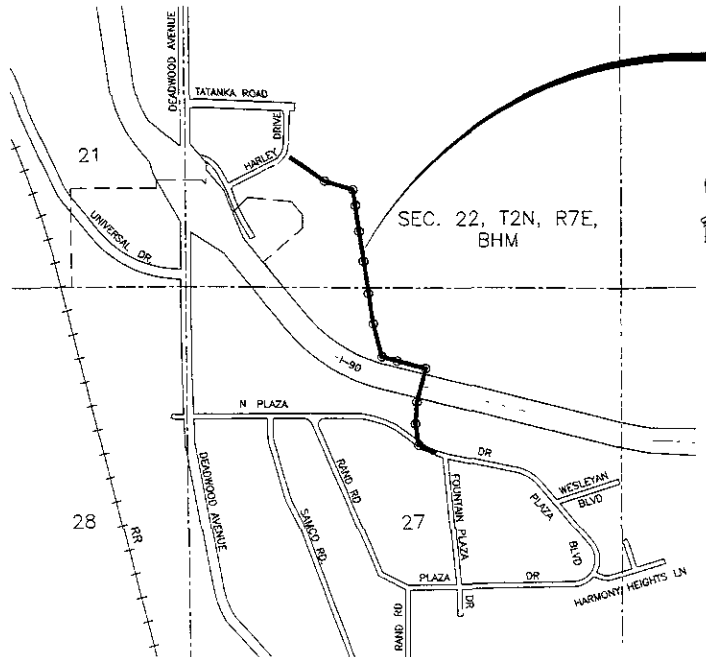


Civil Engineers • Water Resources • Transportation • Land Surveying
729 East Westtown St. Rapid City, SD 57101 • Phone: (605) 345.3321

EXISTING LEGEND	
	FLAG POLE
	BOREHOLE
	MONITORING WELL
	PARKING METER
	TRAFFIC SIGNAL
	DELINQUENT
	CABLE TV OR TELEPHONE RISER
	CONIFEROUS TREE
	DECIDUOUS TREE
	BUSH
	HEDGE/TREE LINE
	3 POLE SIGN
	2 POLE SIGN
	1 POLE SIGN
	MAILBOX
	POST / BOLLARD
	YARD HYDRANT
	WATER METER
	FIRE HYDRANT
	GATE VALVE
	BUTTERFLY VALVE
	POST INDICATOR VALVE (PIV)
	SPRINKLER HEAD
	WATER MANHOLE
	CURB STOP
	TELEPHONE MANHOLE
	STORM SEWER MANHOLE
	SANITARY SEWER MANHOLE
	CLEAN OUT
	SET PROPERTY CORNER
	FOUND PROPERTY CORNER
	CONTROL POINT
	RIGHT-OF-WAY MARKER
	GAS VALVE
	GAS METER
	GAS MANHOLE
	ELECTRICAL MANHOLE
	LIGHT POLE
	GUY WIRE ANCHOR
	TYPE "A" INLET
	TYPE "B" INLET
	STORM SEWER JUNCTION BOX
	STUMP

PROPOSED LEGEND	
	SANITARY SEWER MANHOLE
	CONSTRUCTION EASEMENT
	TEMP CONSTRUCTION FENCE LINE
	SANITARY LINE
	PROPERTY LINE
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	EASEMENT LINE
	RIGHT-OF-WAY LINE
	MAJOR CONTOUR
	MINOR CONTOUR

	SANITARY SEWER LINE
	FOR PIPES 18" AND LARGER
	STORM SEWER LINE
	FOR PIPES 18" AND LARGER
	WATER LINE
	FOR PIPES 18" AND LARGER



SITE MAP NOT TO SCALE

ONE CALL
BEFORE DIGGING
1-800-781-7474

ITEM	DESCRIPTION OF ITEM	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	MOBILIZATION (INTERSTATE BOISE)	2	LB
3	STORMWATER POLLUTION PREVENTION PLAN	1	LS
4	CONSTRUCTION STAKING	1	LS
5	CLEARING & GRUBBING	1	LS
6	8" PVC SEWER MAIN (0'-0")	51	LF
7	8" PVC SEWER MAIN (6'-0")	52	LF
8	8" PVC SEWER MAIN (6'-0")	35	LF
9	8" PVC SEWER MAIN (10'-12")	102	LF
10	8" PVC SEWER MAIN (12'-14")	122	LF
11	8" PVC SEWER MAIN (14'-16")	77	LF
12	8" PVC SEWER MAIN (16'-18")	155	LF
13	8" PVC SEWER MAIN (18'-20")	96	LF
14	8" PVC SEWER MAIN (20'-22")	56	LF
15	10" PVC SEWER MAIN (10'-12")	6	LF
16	12" PVC SEWER MAIN (16'-20")	6	LF
17	12" PVC SEWER MAIN (20'-22")	6	LF
18	15" PVC SEWER MAIN (0'-0")	95	LF
19	15" PVC SEWER MAIN (6'-0")	27	LF
20	15" PVC SEWER MAIN (6'-10")	28	LF
21	15" PVC SEWER MAIN (10'-12")	78	LF
22	15" PVC SEWER MAIN (12'-14")	150	LF
23	15" PVC SEWER MAIN (14'-16")	481	LF
24	15" PVC SEWER MAIN (16'-18")	170	LF
25	15" PVC SEWER MAIN (18'-20")	259	LF
26	15" PVC SEWER MAIN (20'-22")	433	LF
27	15" PVC SEWER MAIN (22'-24")	65	LF
28	15" PVC SEWER MAIN (24'-26")	735	LF
29	15" PVC SEWER MAIN (26'-28")	248	LF
30	15" PVC SEWER MAIN (28'-30")	255	LF
31	18" PVC SEWER MAIN (10'-12")	200	LF
32	18" PVC SEWER MAIN (12'-14")	200	LF
33	18" PVC SEWER MAIN (14'-16")	21	LF
34	18" PVC SEWER MAIN (16'-18")	28	LF
35	18" PVC SEWER MAIN (18'-20")	22	LF
36	18" PVC SEWER MAIN (20'-22")	23	LF
37	18" PVC SEWER MAIN (22'-24")	28	LF
38	18" PVC SEWER MAIN (24'-26")	129	LF
39	18" PVC SEWER MAIN (26'-28")	41	LF
40	4" PVC SANITARY SERVICE LINE	9	LF
41	EXTRA MANHOLE DEPTH, 48" DIA.	67.5	VFT
42	EXTRA MANHOLE DEPTH, 60" DIA.	20.3	VFT
43	EXTRA MANHOLE DEPTH, 72" DIA.	3.4	VFT
44	EXTRA MANHOLE DEPTH, 96" DIA.	16.8	VFT
45	STANDARD MANHOLE, 48" DIA.	9	EA
46	STANDARD MANHOLE, 72" DIA.	1	EA
47	STANDARD MANHOLE, 96" DIA.	1	EA
48	DROP MANHOLE, 48"	1	EA
50	REMOVE SANITARY SEWER MANHOLE	1	EA
51	ROCK EXCAVATION	170	CY
52	RECONSTRUCT SEWER SERVICE (FARM CREDIT)	1	EA
53	SEWER MAIN CONCRETE REINFORCEMENT (CLM-8)	171	LF
54	CONNECTION TO EXISTING SEWER MAIN	3	EA
55	4" SANITARY SEWER SERVICE CONNECTION	1	EA
56	STOCK DAM CROSSING	1	LS
57	INTERSTATE BOISE (8" SLEEVE)	220	LF
58	TYPE I BEDDING MATERIAL	30	TON
59	TYPE II FOUNDATION MATERIAL	30	TON
60	EXCAVATION UNCLASSIFIED	740	CY
61	CLEAN ROCK - 2" (CONSTRUCTION ENTRANCES)	21	T
62	REMOVE & DISPOSE ASPHALT PAVEMENT	432	SY
63	REMOVE & REPLACE CURBS & GUTTER (R&P)	20	LF
64	REMOVE & RESET FENCE	1	EA
65	TRANSPLANT TREES 6"-12"	1	EA
66	REMOVE AND RESET R&P&P	89	SY
67	AGGREGATE BASE COURSE	274	T
68	SOIL SUPPORT FABRIC/GEOTEXT	500	SY
69	ASPHALT CONCRETE, CLASS TYPE 1	500	SY
70	ASPHALT CONCRETE, CLASS TYPE 2	50	T
71	EROSION CONTROL, SILT FENCE	590	LF
72	REMOVE SILT FENCE	430	LF
73	SEEDING, FERTILIZING, MULCHING	8.40	ACRE
74	SOIL	3000	SY
75	TEMPORARY CONSTRUCTION FENCE	272	LF
76	SET INSET PROPERTY PINS	1	EA
77	TRAFFIC CONTROL	1	LS
78	TRAFFIC CONTROL PREPARATION	1	LS
79	INCIDENTAL	1	LS

PROJECT NOTE
THIS PROJECT EXTENDS THE CITY OF RAPID CITY SANITARY SEWER SERVICE TO INCLUDE THE AREA NORTH OF INTERSTATE 90, CONNECTING TO THE EXISTING DRY SEWER MAIN. THE NORTH DEADWOOD ALIGNMENT TIES TO THE EXISTING MAIN IN NORTH PLAZA DRIVE WITH A NEW MANHOLE. THE NORTH PLAZA DRIVE REPLACEMENT (SHEET 4) ALLOWS FOR INTERIM SERVICE TO THE AREA BY INCREASING THE DIAMETER FROM 8" TO 18" AT THE EXISTING MANHOLE (POST 1-10) WILL BE REPLACED.

SPECIFICATIONS TO BE USED

ALL UTILITY WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF RAPID CITY STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2004 EDITION WITH ALL CURRENT UPDATES, EXCEPT AS MODIFIED IN THE BID DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE EXACT LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES IN PLACE.

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.

ELECTRICAL, TELEPHONE, TELEVISION, AND GAS UTILITIES MAY BE ADJUSTED AND/OR RELOCATED BY THE RESPECTIVE UTILITY COMPANIES.

ALL UTILITY COMPANIES SHALL BE CONTACTED BY THE CONTRACTOR BEFORE SUBSURFACE WORK IS COMMENCED.

UTILITIES

SOUTH DAKOTA ONE CALL
1-800-781-7474

(TELEPHONE)
DISHNET
(800) 873-1811

(GAS)
MONTANA-DAKOTA UTILITIES
703 KANSAS CITY STREET
(605) 342-0150

CITY OF RAPID CITY UTILITIES DEPARTMENT
605 STEELE AVENUE
(605) 394-4159

WILLISTON BASIN INTERSTATE PIPELINE COMPANY
(605) 844-8922

(TELEVISION)
RELOCATION COMMUNICATIONS
1301 OMAHA STREET, STE 108
(605) 343-3402

(FIBER OPTIC)
BLACK HILLS FIBERCOM
809 DEANWOOD AVENUE
(605) 721-2000

(ELECTRIC)
BLACK HILLS POWER & LIGHT COMPANY
409 DEANWOOD AVENUE
(605) 342-3200

EXISTING GAS SERVICE AT STA 1+85

CONTRACTOR SHALL COORDINATE WITH MONTANA-DAKOTA UTILITIES NOT LESS THAN SEVEN (7) BUSINESS DAYS BEFORE EXCAVATING. THE EXISTING 3/4" STEEL GAS SERVICE LINE IS ESTIMATED TO BE BURIED AT 30" BELOW GRADE, AND VERIFIED THE FARM CREDIT BUILDING ON TRACT 1382.

SUBMITTALS

THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT THE FOLLOWING ITEMS TO THE ENGINEER PRIOR TO CONSTRUCTION:

- TRAFFIC CONTROL PLAN FOR THE NORTH PLAZA DRIVE OPEN CUT
- DUST CONTROL PLAN FROM THE CITY OF RAPID CITY
- SHOP DRAWINGS FOR ALL MATERIAL FURNISHED, INCLUDING AGGREGATES
- SEED/SOIL CERTIFICATION
- A COPY OF THE NOTICE OF INTENT TO THE SOVEREIGN (FILED BY THE CONTRACTOR)
- A COPY OF THE CONTRACTOR'S STORMWATER POLLUTION PREVENTION PLAN
- A COPY OF THE UTILITY WORK PERMIT FROM THE SUDOT FOR WORK WITHIN THE INTERSTATE 90 R.O.W.
- BYPASS PUMPING PLAN FOR NORTH PLAZA SANITARY SEWER.
- BYPASS PUMPING PLAN FOR THE FARM CREDIT SANITARY SEWER SERVICE
- BORING CONTRACTOR'S EXPERIENCE AND CREDENTIALS
- BORING PLAN, BORING METHOD, FIT FLOOR STABILIZATION, EQUIPMENT, METHOD OF INSURING AGAINST OVERSINKING, HORIZ. AND VERT. CONTROL METHOD, ETC
- SLEEVE, SLEEVE END SEALS, CASING SPACERS, GARRIER PIPE RESTRAINTS.

SUBMITTALS SHALL INCLUDE ALL DRAWINGS, DIAGRAMS, DESCRIPTIVE LITERATURE, ILLUSTRATIONS, INSTRUCTIONS, SCHEDULES, SAFETY PLANS, OPERATING PLANS, PERFORMANCE AND TEST DATA, PRODUCT DATA SHEETS, MATERIAL SAFETY DATA SHEETS, AND SIMILAR MATERIALS PREPARED BY THE CONTRACTOR OR A SUPPLIER TO ILLUSTRATE MATERIAL, EQUIPMENT OR SOME PORTION OF THE WORK.

CONTROL POINTS

CONTROL POINTS AND ALIGNMENT COORDINATES ARE IDENTIFIED ON THE SURVEY DATA SHEET.

CONTRACTOR FURNISHED STAKING

ALL PROJECT STAKING SHALL BE PER SECTION 201 OF THE STANDARD SPECIFICATIONS AND SHALL BE FURNISHED BY THE CONTRACTOR. PAYMENT FOR CONTRACTOR FURNISHED STAKING SHALL BE AT THE CONTRACT LUMP SUM PRICE FOR "CONSTRUCTION STAKING".

TRENCH CHECK DAM

CONTRACTOR SHALL PLACE WITHIN THE TRENCH A COMPACTED CONCRETE 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. THE CHECK DAM SHALL EXTEND FROM THE BOTTOM OF THE EXCAVATION THROUGH THE BEDDING MATERIAL TO THE SACRELL AND SHALL EXTEND COMPLETELY TO EACH TRENCH. OVERBANKS THE CHECK DAM IS USED AS A MEANS TO PREVENT THE CONVEYANCE OF WATER THROUGH THE TRENCH BEDDING. COMPACTED CONCRETE CLAY SHALL CONSIST OF MATERIAL THAT CONTAINS A MINIMUM OF 20% LEISS NO. 200 SIEVE MATERIAL, WITH 70% PASSING A 3/4" OPEN SIEVE AND A MINIMUM 8% OF 100. 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 AN INCIDENTAL TO THE PVC SEWER PIPE INSTALLATION.

SAWING IN EXISTING ASPHALT CONCRETE

WHERE NEW ASPHALT CONCRETE IS PLACED ADJACENT TO EXISTING ASPHALT CONCRETE THE EXISTING ASPHALT CONCRETE SHALL BE SAWS TO A TRUE LINE WITH A VERTICAL FACE, TO FULL DEPTH. SAWING IS INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.

EROSION CONTROL

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DEVELOPMENT, PROCUREMENT, AND IMPLEMENTATION OF A STATE OF SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (SDENR) STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND PROPER PERMITS. THE CONTRACTOR SHALL FURNISH THE ENGINEER A COPY OF THE POLLUTION PREVENTION PLAN AT THE PRE-CONSTRUCTION MEETING. THESE SHALL BE NO SEPARATE CONTRACT ITEM FOR THE STORMWATER POLLUTION PREVENTION PLAN.

THE MINIMUM LOCATIONS FOR POLLUTION CONTROL DEVICES ARE SPECIFIED ON THE PLANS. HOWEVER IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ANY ADDITIONAL DEVICES AND LOCATIONS NECESSARY FOR POLLUTION CONTROL IN ACCORDANCE WITH THE SDENR REGULATIONS.

THE CONTRACTOR IS ADVISED THAT ENVIRONMENTALLY SENSITIVE AREAS ARE LOCATED DOWNSTREAM OF THE PROJECT AND THAT THE REQUIREMENTS OF WETLANDS POLLUTION PREVENTION PLAN MUST BE FULLY IMPLEMENTED. THE IMPLEMENTATION OF THE POLLUTION PREVENTION CONTROL PLAN IS THE RESPONSIBILITY OF THE CONTRACTOR. HOWEVER, SEVERAL AGENCIES HAVE THE AUTHORITY TO STOP WORK IF THE POLLUTION PREVENTION CONTROL PLAN IS NOT IMPLEMENTED OR IS NOT EFFECTIVE IN PREVENTION OF ENVIRONMENTAL DAMAGE FROM CONSTRUCTION ACTIVITIES. NO COMPENSATION WILL BE FORTHCOMING FOR "TIME LOST" OR FOR ADDITIONAL POLLUTION CONTROL DEVICES DUE TO A "STOP WORK" ORDER.

THE CONTRACTOR IS REQUIRED TO OBTAIN A SURFACE WATER DISCHARGE PERMIT FROM SUDOT FOR ANY DOWNSIDE ACTIVITIES.

THE AREA INLET AT STA 2+44 - 30' LT SHALL BE INCLUDED IN THE CONTRACTORS SWPPP.

TOPSOIL

THE CONTRACTOR IS RESPONSIBLE FOR SALVAGING ALL TOPSOIL FROM THE DISTURBED AND REPLACING AREA AND REPLACING IT WITHIN THE TRENCH. THE REMOVAL AND REPLACING OF TOPSOIL IS INCIDENTAL TO THE PROJECT.

EXCESS MATERIAL

EXCESS MATERIAL FROM TRENCH EXCAVATION SHALL FIRST BE USED TO ESTABLISH 2:1 MINIMUM COVER OVER THE SEWER MAIN. LEFT OVER MATERIAL SHALL BE SPREAD WITHIN THE RIGHT OF WAY OR EASEMENTS AS DIRECTED BY THE ENGINEER PRIOR TO REPLACING TOPSOIL.

PROPERTY OWNERS

PROPERTY CORNERS AS LOCATED IN THE PLANS OR FOUND IN THE FIELD SHALL BE PRESERVED IF POSSIBLE. CORNERS DESTROYED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

WATER FOR COMPACTION

COST OF WATER FOR COMPACTION SHALL BE ASSIGNED IN THE CONTRACT UNIT PRICE FOR UNCLASSIFIED EXCAVATION, AND THE INSTALLATION OF THE SANITARY SEWER MAIN.

ASPHALT CONCRETE

ASPHALT CONCRETE SHALL BE CLASS G WITH 64 28 (OR COST EQUIVALENT) BINDER. MINIMUM THICKNESS IS 8", PER DETAIL 41-1, SHEET 15. SAWING AND TACK SHALL BE INCIDENTAL TO THE ASPHALT INSTALLATION.

EMBANKMENT

COMPACTION OF EARTH EMBANKMENT SHALL BE GOVERNED BY THE SPECIFIED DENSITY METHOD. EMBANKMENT QUANTITIES WILL BE COMPUTED ASSUMING A SUBGRADE FACTOR OF 50%. NO SEPARATE MEASUREMENT OF EMBANKMENT QUANTITIES WILL BE MADE.

DUST CONTROL

THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A RAPID CITY AREA DUST CONTROL PERMIT PRIOR TO BEGINNING THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROJECT WITHIN DUST CONTROL STANDARDS. A COPY OF THE DUST CONTROL PERMIT SHALL BE SUBMITTED TO THE OWNER.

RIGHT-OF-WAY FENCING AT THE INTERSTATE OR CROSSING SHALL BE RESTORED TO ITS ORIGINAL CONDITION UPON COMPLETION OF WORK. THE FENCE OPENING SHALL BE CLOSED WHEN THE CONSTRUCTION SITE IS NOT PHYSICALLY OCCUPIED BY THE CONTRACTOR. REMOVAL AND REPLACEMENT OF THE R.O.W. FENCE IS PAID FOR UNDER THE BID ITEM "REMOVE AND RESET FENCE". TEMPORARY CLOSING OF THE OPENING DURING PERIODS THAT THE SITE IS NOT OCCUPIED BY THE CONTRACTOR SHALL BE INCIDENTAL TO THE PROJECT.

TEMPORARY CONSTRUCTION FENCING

TEMPORARY CONSTRUCTION FENCING SHALL BE SET 1' WEST OF THE PROPERTY LINE FROM STA 1+90 TO STA 4+60 BEFORE WORK BEGINS. TEMPORARY CONSTRUCTION FENCE INSTALLATION AND REMOVAL TO BE PAID UNDER THE BID ITEM "TEMPORARY CONSTRUCTION FENCE".

WASTE DISPOSAL SITE

THE CONTRACTOR WILL BE REQUIRED TO FURNISH A SITE SATISFACTORY TO THE ENGINEER FOR THE DISPOSAL OF BROKEN CONCRETE, EXCESS DIRT, ROCK, TREES, NON-SALVAGEABLE ASPHALT CURFING AND OTHER CONSTRUCTION/DEMOLITION DEBRIS GENERATED BY THIS PROJECT. THE WASTE DISPOSAL SITE MAY NOT BE A STREAM BANK OR LAKE OR WETLAND UNLESS THE CONTRACTOR HAS OBTAINED A "404" PERMIT FROM THE U.S. ARMY CORPS OF ENGINEERS.

A WETLAND IS DEFINED AS THOSE AREAS THAT ARE INUNDATED OR SATURATED BY SURFACE OR GROUND WATER AT A FREQUENCY AND DURATION SUFFICIENT TO SUPPORT, AND THAT UNDER NORMAL CIRCUMSTANCES DO SUPPORT, THE PREVALENCE OF VEGETATION TYPICALLY ASSOCIATED WITH SATURATED SOIL CONDITIONS. WETLANDS GENERALLY INCLUDE SWAMPS, MARSHES, BOGS AND SIMILAR AREAS.

CONSTRUCTION/DEMOLITION DEBRIS MAY NOT BE DISPOSSED OF WITHIN CITY ROW.

CLEARING

CLEARING SHALL BE IN ACCORDANCE WITH SECTION 10 OF THE STANDARD SPECIFICATIONS. EXTREME CARE SHALL BE USED BY THE CONTRACTOR TO PRESERVE ALL TREES AND OTHER VEGETATION THAT LIE OUTSIDE THE ACTUAL CONSTRUCTION LIMITS. THE COSTS FOR TREES, SHRUBS OR OTHER VEGETATION REMOVED SHALL BE INCLUDED IN THE LUMP SUM FOR "CLEARING & GRUBBING".

THE CONTRACTOR SHALL REPLACE ANY EXISTING TREE NOT IDENTIFIED FOR REMOVAL THAT IS DAMAGED OR DYING AS A RESULT OF HER OPERATIONS. THE TREE SHALL BE REPLACED WITH A TREE OF EQUIVALENT SPECIES AND SIZE AT THE EXPENSE OF THE CONTRACTOR.

TREE TRANSPLANTING

ONE CONIFEROUS TREE AT STA 6+30 TO BE TRANSPLANTED TO A LOCATION ON THE LANDOWNER'S PROPERTY AT A LOCATION TO BE DETERMINED BY THE LANDOWNER. CONTRACTOR SHALL COORDINATE WITH THE LANDOWNER BEFORE CONSTRUCTION BEGINS.

MINIMUM COVER

760 CY OF "UNCLASSIFIED EXCAVATION" IS INCLUDED IN THE ESTIMATE OF QUANTITIES TO PROVIDE 4' MINIMUM COVER OVER THE PROPOSED SANITARY MAIN FROM STATION 2+00 TO 7+00. THIS QUANTITY INCLUDES 20% SHRINKAGE. COMPACTION OF THE EMBANKMENT OVER THE LENGTH OF THE SANITARY MAIN SHALL BE 50% MAXIMUM DRY DENSITY DETERMINED BY THE PROCTOR METHOD.

GRADING OPERATIONS SHALL BE CONTAINED WITHIN THE FOUNTAIN SPRINGS PROPERTY AND SHALL BE FINISHED SUCH THAT NO POOLING RESULTS AND OVERLAP DRAINAGE FROM THE EAST ADJOINING LOT IS NOT IMPERD.

SUBGRADE PREPARATION

PRIOR TO EMBANKMENT CONSTRUCTION OPERATIONS, ALL TOPSOIL/ORGANIC MATTER AND ANY CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE AREA TO RECEIVE FILL. ALL AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES, MOISTURE CONDITIONED & RECOMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR.

WHEN PLACING FILL AGAINST EXISTING SLOPES IS REQUIRED, EMBANKMENT SHALL BE PLACED STARTING AT THE TOE OF THE SLOPE. THE EMBANKMENT SHALL BE BENCHED INTO THE EXPOSED SOILS, ALL FILL SLOPES AND BENCHES SHALL BE CONSTRUCTED ACROSS THE ENTIRE WIDTH OF THE HILLSIDE AND TIED INTO THE EXISTING CONTOURS.

PAYMENT FOR SUBGRADE PREPARATION SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "UNCLASSIFIED EXCAVATION" AND NO SEPARATE PAYMENT OR MEASUREMENT SHALL BE MADE.

SCALE	AS SHOWN
DATE	12-08-08
DESIGNED	MMB/JYP
DRAWN	DRG
REVISIONS:	
DATE	

Ferbr Engineering Company, Inc.
Civil Engineering • Utility Structures • Transportation • Land Surveying
728 EARL WENTWORTH BL, Rapid City, SD 57701 • Phone: (605) 343-3131

GENERAL NOTES (CONT.)

INTERSTATE 90 CROSSING STA 10+00

CROSSING SHALL BE ACCOMPLISHED BY INSTALLATION OF A 96" DIAMETER STEEL PIPE WITH A RIVETED WALL THICKNESS OF 2 1/4" BY SPRING/PARKING. SEE THE DETAILED SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. CONTRACTOR SHALL NOTIFY THE HOBOT (GARY ENGLE - 584-2248) ONE WEEK IN ADVANCE OF BEGINNING WORK WITHIN THE INTERSTATE 90 ROW.

STOCK DAM CROSSING - STA 30+50

THE TOTAL AREA OF WETLAND TO BE DISTURBED BY THE CROSSING IS CONSERVATIVELY ESTIMATED TO BE 0.14 ACRES. THERE WILL BE NO NET CHANGE OF WETLAND AREA AS A RESULT OF THIS PROJECT.

CROSSING SHALL BE ACCOMPLISHED BY USE OF COFFER DAM AND OPEN TRENCH METHODS. DOWATERING OF THE AREA ENCLOSED BY THE COFFER DAM SHALL BE ACCOMPLISHED BY INJECTION IN THE CONTRACTOR'S STORMWATER POLLUTION PREVENTION PLAN. A DOWATERING PERMIT SHALL ALSO BE OBTAINED FROM THE AERIAL SOIL CLASS 150 PPG (WATER MAIN PIPE) SHALL BE USED FROM MANHOLE #12 TO MANHOLE #13. ENCASE THE SEWER MAIN WITH CLASS M-5 CONCRETE FROM STA 30+75 TO STA 40+25. THE STOCK DAM SHALL BE RESTORED TO ITS ORIGINAL CONTOUR FOLLOWING THE INSTALLATION. DISTURBED AREAS SHALL BE SEEDED TO WITHIN 5' OF THE WATER'S EDGE, AT TIME OF SEEDING.

150 LINEAR FEET OF ENCASUREMENT SHALL BE PAID UNDER THE BID ITEM "SEWER MAIN CONCRETE ENCASUREMENT"

A QUANTITY OF STABILIZATION ROCK ("TYPE B FOUNDATION MATERIAL") IS INCLUDED IN THE ESTIMATE OF QUANTITIES FOR TRENCH FOUNDATION STABILIZATION WHERE NEEDED.

COFFER DAM CONSTRUCTION, DEWATERING, MUCK EXCAVATION AND RESTORATION OF THE STOCK DAM CONTOURS ARE TO BE PAID UNDER THE LUMP SUM BID ITEM "STOCK DAM CROSSING."

RESIDUAL STABILIZATION ROCK SHALL BE REMOVED FROM THE SURFACE BEFORE TOPSOIL IS PLACED.

CONNECTION TO EXISTING SANITARY SEWER - STA 0+71.9 TO STA 1+28.4

THE EXISTING MANHOLE AT STA 0+71.9 SHALL BE REPLACED. A 60" DIAMETER MONOLITHIC BASED MANHOLE SHALL BE USED WITH PRE-CAST INVERT SIZED FOR 18" DIAMETER DRIET AND OUTLET. THE NEW MANHOLE OUTLET SHALL BE SIZED FOR 12" PPG SEWER MAIN. (THE OUTLET IS TO BE RE-SIZED BY OTHERS WHEN THE EXISTING 12" SANITARY SEWER MAIN IS INCREASED TO 18" DIAMETER IN THE FUTURE.)

CONTRACTOR SHALL PROVIDE UNINTERRUPTED SANITARY SEWER SERVICE THROUGH NORTH PLAZA DRIVE BY PROVIDING BYPASS PUMPING DURING CONSTRUCTION OF THE SANITARY SEWER BETWEEN STA 0+71.9 AND STA 1+39.4. CONTRACTOR SHALL SUBMIT A BYPASS PUMPING PLAN TO THE ENGINEER SEVEN (7) BUSINESS DAYS BEFORE CONSTRUCTION ON NORTH PLAZA DRIVE BEGINS. ALL COSTS ASSOCIATED WITH THE SANITARY SEWER TEMPORARY BYPASS SHALL BE INCIDENTAL TO THE SEWER INSTALLATION.

SURFACE RESTORATION / SEEDING

QUANTITIES FOR THE ASPHALT PATCH IN NORTH PLAZA DRIVE ARE CALCULATED ASSUMING A 3" THICKNESS OF ASPHALT ON 6" OF AGGREGATE BASE COURSE.

SEEDING QUANTITY IS BASED ON THE TOTAL WIDTH OF THE PERMANENT SANITARY ENCASMENT PLUS TEMPORARY CONSTRUCTION EASEMENT WIDTH THROUGH THE PROJECT. 8000 SQUARE FEET IS INCLUDED IN THIS QUANTITY FOR THE BORE PITS. 7000 SQUARE FEET IS INCLUDED IN THIS QUANTITY FOR THE N. PLAZA ROW. PLANS QUANTITY WILL BE PAID FOR SEEDING WITHOUT FIELD MEASUREMENT.

SOO SHALL BE PLACED ON ALL DISTURBED AREAS FROM THE NORTH ROW OF N. PLAZA DRIVE TO THE INTERSTATE 90 R.O.W. REFER TO CITY OF RAPID CITY STANDARD SPECIFICATIONS SECTION 78 FOR SPECIFIC REQUIREMENTS. SOO QUANTITY IS BASED ON 90 FEET OF WIDTH TIMES THE LENGTH OF SANITARY MAIN WITHIN THE PRIVATE LOT. PLANS QUANTITY WILL BE PAID FOR SOO WITHOUT FIELD MEASUREMENT.

DISTURBED AREAS WITHIN THE NORTH PLAZA DRIVE ROW, INTERSTATE 90 R.O.W., AND NORTH OF INTERSTATE 90 SHALL BE PERMANENTLY SEEDED.

SEED MIXTURE SHALL BE

- 40% CRESTED WHEATGRASS
- 30% PERENNIAL RYEGRASS
- 20% HARD FESCUE
- 10% ANNUAL RYEGRASS

WITH AN APPLICATION RATE OF 100 LBS PER ACRE

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

MULCHING

WITHIN THE NORTH PLAZA DRIVE AND INTERSTATE 90 R.O.W.: GRASS MAY MULCH SHALL BE APPLIED AT A RATE OF 2000 LBS PER ACRE. STRAW MULCH IS SPECIFICALLY EXCLUDED DUE TO THE PROJECT'S PROXIMITY TO A GOLF COURSE AND OFFICE BUILDINGS. NORTH OF THE INTERSTATE TO THE END OF THE PROJECT GRASS MAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 2000 LBS PER ACRE.

SANITARY SERVICE STUB

THE 4" SERVICE STUB AT STA 7+88.4 SHALL BE CLIPPED AND MARKED WITH A STEEL 1'-POST, BURIED TO 0' BELOW GRADE. THE CAP AND 1-POST SHALL BE IN INCIDENTAL TO THE STUB-OUT.

SANITARY SERVICE CONNECTIONS

NO SEWER SERVICE CONNECTIONS OTHER THAN THE STUB AT STATION 7+88.4 SHALL BE MADE OR INSTALLED WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.

SANITARY SEWER STUBOUTS AT MANHOLES

STUB-OUTS ARE PAID FOR AS 8 LF OF SANITARY SEWER MAIN, MEASURED FROM C/L OF MANHOLE. THE CAP/PLUG AT END OF STUB-OUTS SHALL BE INCIDENTAL TO THE SEWER MAIN.

ENCASUREMENT MATERIAL

CONCRETE FOR ENCASMENT SHALL BE CLASS M-5 PER THE SPECIFICATIONS

ROCK EXCAVATION

BORING #2 OF THE GEOTECHNICAL EXPLORATION PROGRAM (INCLUDED IN THE DETAILED SPECIFICATIONS) SHOWS THE PRESENCE OF GYPSUM. WHERE GYPSUM OR BEDROCK IS ENCOUNTERED AT THE TRENCH BOTTOM, THE TRENCH SHALL BE OVER EXCAVATED 2' AND BACKFILLED WITH COHESIVE MATERIAL ACCEPTABLE TO THE ENGINEER. A QUANTITY OF ROCK EXCAVATION IS INCLUDED IN THE BID TAB. ROCK EXCAVATION WILL BE PAID BY THE CUSTO YARD AS MEASURED IN THE FIELD. ROCK EXCAVATION SHALL BE VERIFIED BY THE ENGINEER BEFORE BEING PAID AS SUCH.

SILT FENCE

SILT FENCE SHALL BE INSTALLED WHERE INDICATED ON THE PLANS. PAYMENT FOR SILT FENCE WHERE SPECIFICALLY CALLED OUT IN THE PLANS WILL BE PAID PER LINEAR FOOT UNDER THE BID ITEM "EROSION CONTROL. SILT FENCE". THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ALL OTHER EROSION CONTROL AND STORMWATER RUNOFF MEASURES AS NEEDED IN ACCORDANCE WITH THE CONTRACTOR'S STORMWATER POLLUTION PREVENTION PLAN.

STAGING AREAS

ADDITIONAL AREAS FOR STORAGE OF MATERIALS AND EQUIPMENT ARE NOT INCLUDED IN THE PLANS. CONTRACTOR SHALL COORDINATE WITH RESPECTIVE LANDOWNERS IF ADDITIONAL AREA OUTSIDE THE RIGHT-OF-WAY, PERMANENT EASEMENTS, OR TEMPORARY CONSTRUCTION EASEMENTS IS DESIRED. SURFACE RESTORATION OF ANY ADDITIONAL AREA WILL BE AT THE CONTRACTOR'S EXPENSE. ADDITIONAL SEEDING AND ANY OTHER SURFACE RESTORATION WILL NOT BE PAID.

WORK AREAS

CONTRACTOR SHALL CONFINED THE WORK TO WITHIN THE WORK AREA. THE WORK AREA IS DEFINED AS THE AREA WITHIN THE ROW, PERMANENT EASEMENTS, AND TEMPORARY CONSTRUCTION EASEMENTS AS SHOWN ON THE PLANS.

CONSTRUCTION ENTRANCE

WHERE CONSTRUCTION ACTIVITIES ARE ACCESSED VIA A PAVED SURFACE, A TEMPORARY STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED PER CITY OF RAPID CITY STANDARD DETAIL 144-S. A QUANTITY OF 2" CLEAN AGGREGATE EQUAL TO ONE ENTRANCE IS INCLUDED IN THE ESTIMATE OF QUANTITIES FOR THIS PURPOSE.

GEOROID

GEOROID MAY EXIST AS PART OF THE NORTH PLAZA DRIVE STREET SECTION. A QUANTITY OF GEOROID IS INCLUDED FOR THIS PURPOSE. IF GEOROID DOES NOT EXIST, THE QUANTITY SHALL BE DEDUCTED.

TABLE OF SANITARY SEWER MANHOLES

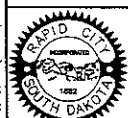
MANHOLE NO	DIAMETER IN	STATION	RIM EL. MSL.	INVERT OUT MSL.	DEPTH FT	EXTRA DEPTH VF
1A	90	0+71.9	3362.31	3354.71	7.20	1.6
1	80	1+38.4	3360.88	3355.70	4.98	0.0
2	48	4+64.8	3363.90	3358.52	5.98	0.0
3	48	9+54.4	3362.28	3361.25	7.53	1.9
4	90	11+75.2	3368.68	3363.80	25.82	9.8
5	48	15+30.0	3374.35	3368.67	7.88	1.7
6	90	17+09.0	3378.50	3368.26	7.74	1.7
7	72	20+44.4	3390.48	3371.07	9.29	3.4
8	48	24+38.3	3383.01	3375.03	9.08	3.1
9	48	28+38.3	3387.18	3383.73	13.45	7.5
10	48	32+38.3	3408.12	3388.53	18.29	13.3
11	48	36+38.3	3410.76	3389.63	23.02	14.8
12	90	38+28.3	3414.47	3393.40	23.01	17.0
13-DROP	48	41+27.2	3414.90	3393.50	21.10	15.1
14	48	44+82.0	3427.11	3414.27	12.54	6.8
15	48	45+37.0	3421.13	3421.88	6.25	3.3

TOTAL 48" MH	9
TOTAL 48" DROP MH	1
TOTAL 60" MH	4
TOTAL 72" MH	1
TOTAL 90" MH	1
TOTAL EXTRA VF 48" MANHOLE	67.5
TOTAL EXTRA VF 60" MANHOLE	29.3
TOTAL EXTRA VF 72" MANHOLE	8.4
TOTAL EXTRA VF 90" MANHOLE	19.8

SCALE	AS SHOWN
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DESIGNED	MBP/DFP
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 Civil Engineering • Water Resources • Transportation • Land Surveying
 729 East Wackerline St, Rapid City, SD 57701 • phone (605) 343-3331

GENERAL NOTES & QUANTITY TABLES
 NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO. SSW02-1258

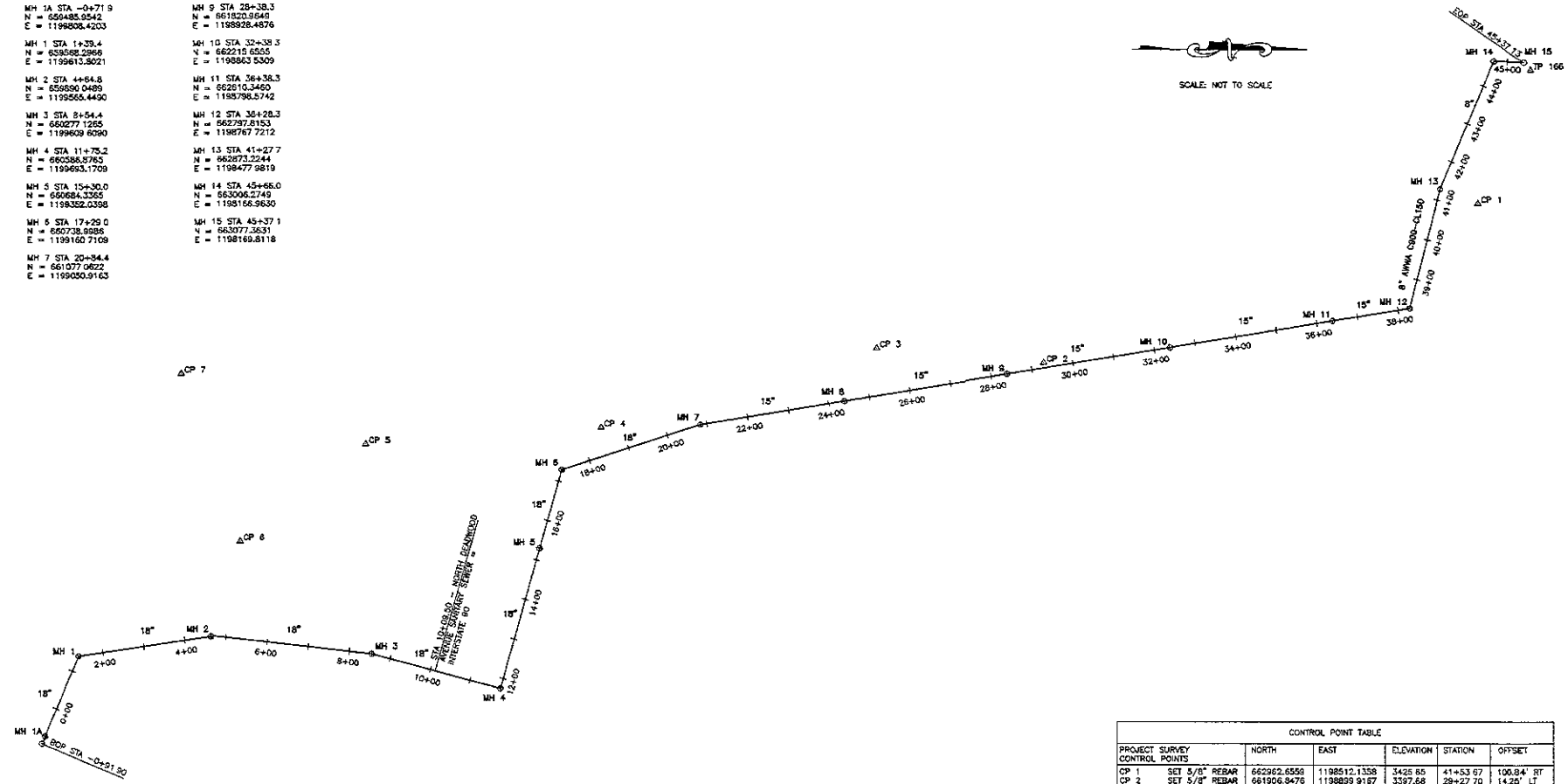


NORTH DEADWOOD AVENUE
SANITARY SEWER ALIGNMENT

BOP STA -0+91.8 N = 659480.7880 E = 1199327.7415	MH 8 STA 24+38.3 N = 661426.2744 E = 1198953.4443
MH 1A STA -0+71.9 N = 659488.0542 E = 1199808.4203	MH 9 STA 28+38.3 N = 661920.9640 E = 1198928.4876
MH 1 STA 1+33.4 N = 659568.2966 E = 1199613.5021	MH 10 STA 32+38.3 N = 662215.6535 E = 1198863.5309
MH 2 STA 4+84.8 N = 659690.0489 E = 1199565.4490	MH 11 STA 36+38.3 N = 662510.3450 E = 1198798.5742
MH 3 STA 8+54.4 N = 660277.1265 E = 1199609.6090	MH 12 STA 38+28.3 N = 662797.8153 E = 1198767.7212
MH 4 STA 11+75.2 N = 660388.9762 E = 1199603.1709	MH 13 STA 41+27.7 N = 662873.2244 E = 1199477.5819
MH 5 STA 15+30.0 N = 660684.3362 E = 1199322.0398	MH 14 STA 45+66.0 N = 663006.2749 E = 1199166.9630
MH 6 STA 17+29.0 N = 660738.8986 E = 1199160.7109	MH 15 STA 45+37.1 N = 663077.3631 E = 1199169.8118
MH 7 STA 20+34.4 N = 661077.0622 E = 1199050.9163	



SCALE: NOT TO SCALE



CONTROL POINT TABLE						
PROJECT CONTROL POINTS	NORTH	EAST	ELEVATION	STATION	OFFSET	
CP 1 SET 5/8" REBAR	662962.6550	1198512.1358	5425.85	41+53.67	100.94' RT	
CP 2 SET 5/8" REBAR	661906.8476	1198839.9187	3397.68	28+27.70	14.25' LT	
CP 3 SET 5/8" REBAR	661502.2205	1198863.0202	3397.28	25+34.44	116.36' LT	
CP 4 SET 5/8" REBAR	660332.4844	1199057.2310	3379.86	18+49.85	69.36' LT	
CP 5 SET 5/8" REBAR	660283.7520	1199028.0377	3380.19	16+58.68	474.18' LT	
CP 6 SET 5/8" REBAR	659958.5612	1199234.8162	3388.18	4+91.28	236.91' LT	
CP 7 SET 5/8" REBAR	658682.1595	1199524.7710	3389.76	17+03.88	246.67' LT	
TP 166	N/A	663050.4790	1198187.3145	3428.39	44+93.42	20.75' RT



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SURVEY CONTROL SHEET
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
CITY OF RAPID CITY PROJECT NO SSW02-1258

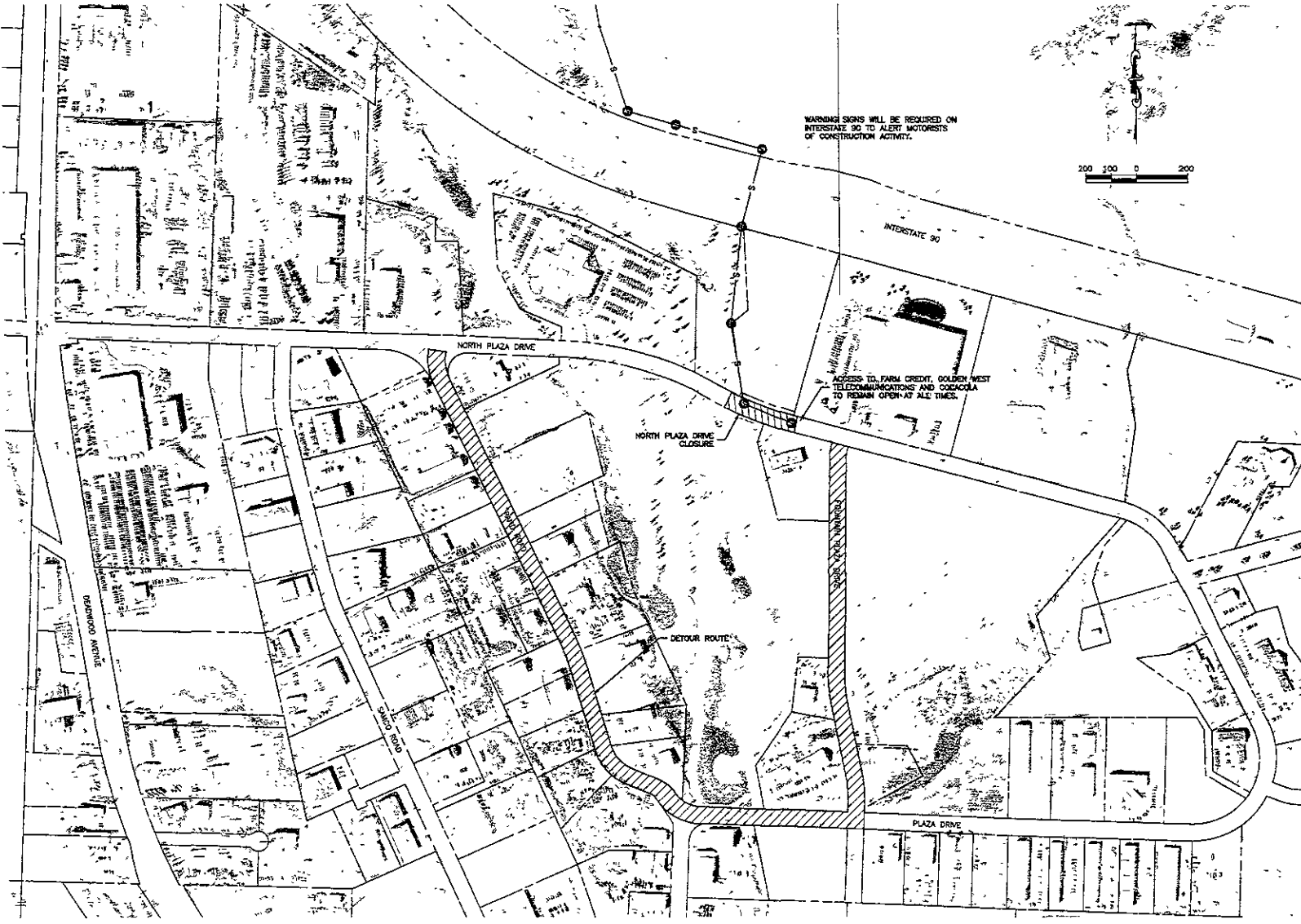
CONSTRUCTION SIGNING AND TRAFFIC CONTROL

CONSTRUCTION SIGNING AND TRAFFIC CONTROL SHALL CONFORM TO THE CONCEPTUAL TRAFFIC CONTROL PLAN, SECTIONS 90 AND 91 OF THE STANDARD SPECIFICATIONS, TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND AS DIRECTED BY THE ENGINEER. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A DETAILED TRAFFIC CONTROL PLAN COORDINATED WITH THE PROJECT SCHEDULE TO THE ENGINEER FOR APPROVAL.

THE CONCEPTUAL TRAFFIC CONTROL PLAN, ALONG WITH THE NOTES, ARE INTENDED TO SERVE AS A GUIDE FOR THE CONTRACTOR IN DEVELOPING HIS DETAILED TRAFFIC CONTROL PLAN. DEVIATIONS FROM THE REQUIREMENTS PRESENTED ON THIS PLAN MAY BE APPROVED IF TECHNIQUES AND METHODS KNOWN TO THE CONTRACTOR WILL RESULT IN IMPROVED PROJECT EFFICIENCY, LESS TRAFFIC DISRUPTION, IMPROVED ACCESS TO LOCAL PROPERTIES OR REDUCED CONSTRUCTION TIME.

PEDESTRIAN TRAFFIC SHALL BE PROTECTED FROM HAZARDS ASSOCIATED WITH THE PROJECT BY THE USE OF BLOW FENCE OR AN ALTERNATIVE APPROVED BY THE ENGINEER.

PAYMENT FOR DEVELOPMENT AND IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN, AND PAYMENT FOR ALL RELATED TRAFFIC CONTROL OBLIGATIONS DURING THE PROJECT SHALL BE MADE AT THE CONTRACT LUMP SUM PRICE FOR "TRAFFIC CONTROL".



WARNING SIGNS WILL BE REQUIRED ON INTERSTATE 90 TO ALERT MOTORISTS OF CONSTRUCTION ACTIVITY.

200 100 0 100 200



CITY of RAPID CITY

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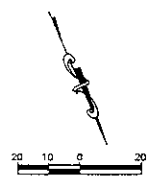
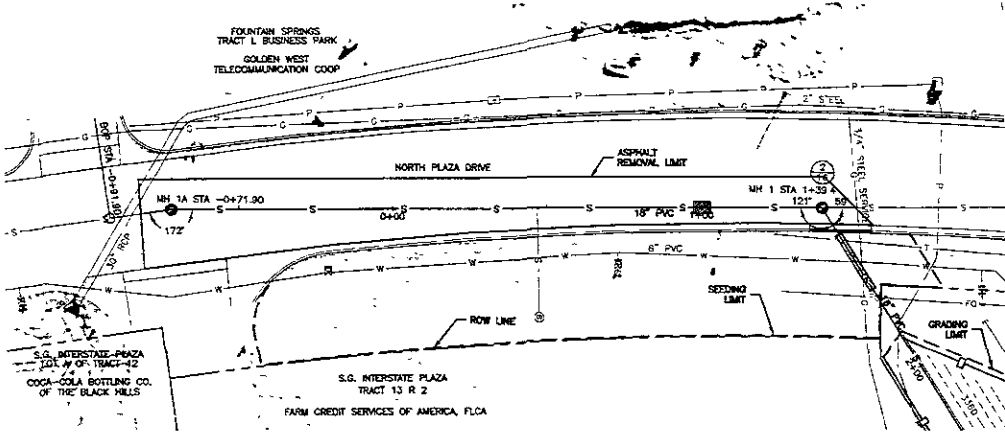
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CONCEPTUAL TRAFFIC CONTROL PLAN
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 5 OF 17

REMOVAL NOTES
 STA -0+81.9 TO STA 1+43.0 REMOVE AND DISPOSE ASPHALT CONCRETE PAVING. 452 SY
 STA -0+71.9 - 0.0' RT REMOVE SANITARY SEWER MANHOLE.
 STA 1+43.9 - 7.5' RT TO STA 1+54.8 - 9.3' LT REMOVE CONCRETE CURB & GUTTER. 20 LF

FOUNTAIN SPRINGS TRACT L BUSINESS PARK
 GOLDEN WEST TELECOMMUNICATION COOP

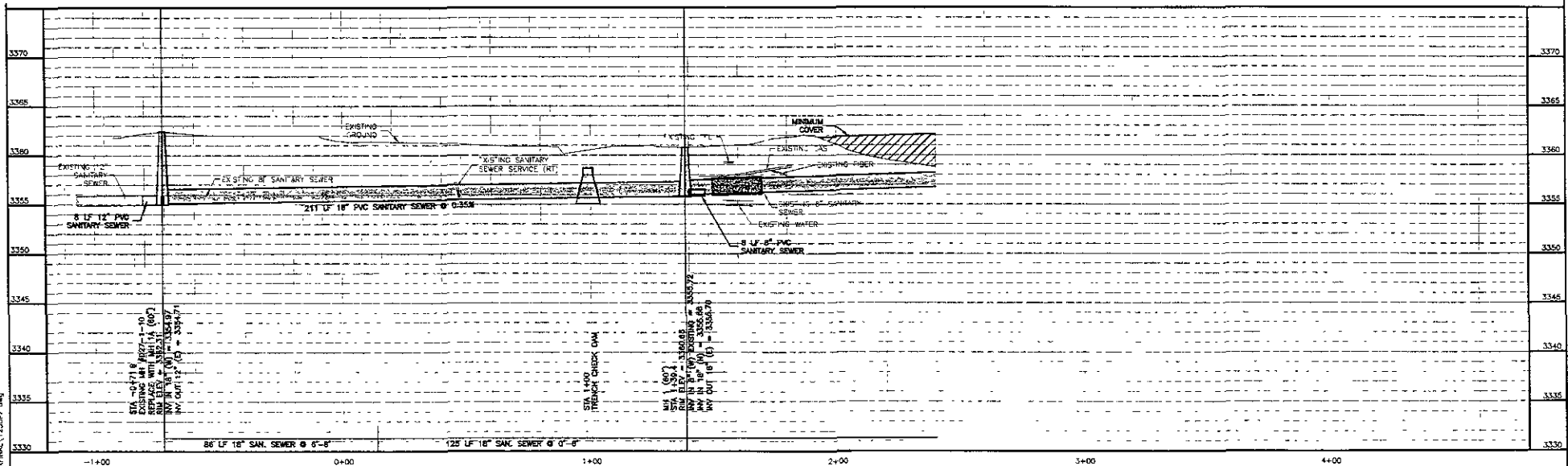


SANITARY SEWER NOTES
 STA -0+80.0 - 0.0 RT
 STA -0+80.0 - 0.0 RT TO STA -0+71.9 - 0.0' RT
 STA -0+71.9 - 0.0' RT
 STA -0+71.9 - 0.0' RT TO STA 1+39.4 - 0.0 RT
 STA 0+47.0 - 0.0' RT
 STA 1+39.4 - 0.0' RT
 STA 1+36.4 - 0.0' RT TO STA 1+43.6 - 6.8' LT
 STA 1+43.6 - 6.8' LT

CONNECT TO EXISTING 12" SANITARY SEWER
 INSTALL 8 LF 12" PVC SANITARY SEWER MAIN
 INSTALL MH 1A (60")
 INSTALL 211 LF 18" PVC SANITARY SEWER MAIN
 RECONNECT SANITARY SEWER SERVICE.
 INSTALL MH 1 (60" SHALLOW MANHOLE) (2/16)
 INSTALL 8 LF 8" PVC SANITARY SEWER MAIN
 CONNECT TO EXISTING 8" SANITARY SEWER

SURFACE RESTORATION NOTES
 STA -0+81.9 TO STA 1+43.0
 STA 1+43.9 - 7.5' RT TO STA 1+54.8 - 9.3' LT

INSTALL ASPHALT TRENCH PATCH, 6" AGGREGATE BASE COURSE, 166 TON
 5" CLASS G ASPHALT, 138 TON
 INSTALL TYPE B66 CONCRETE CURB & GUTTER. 20 LF



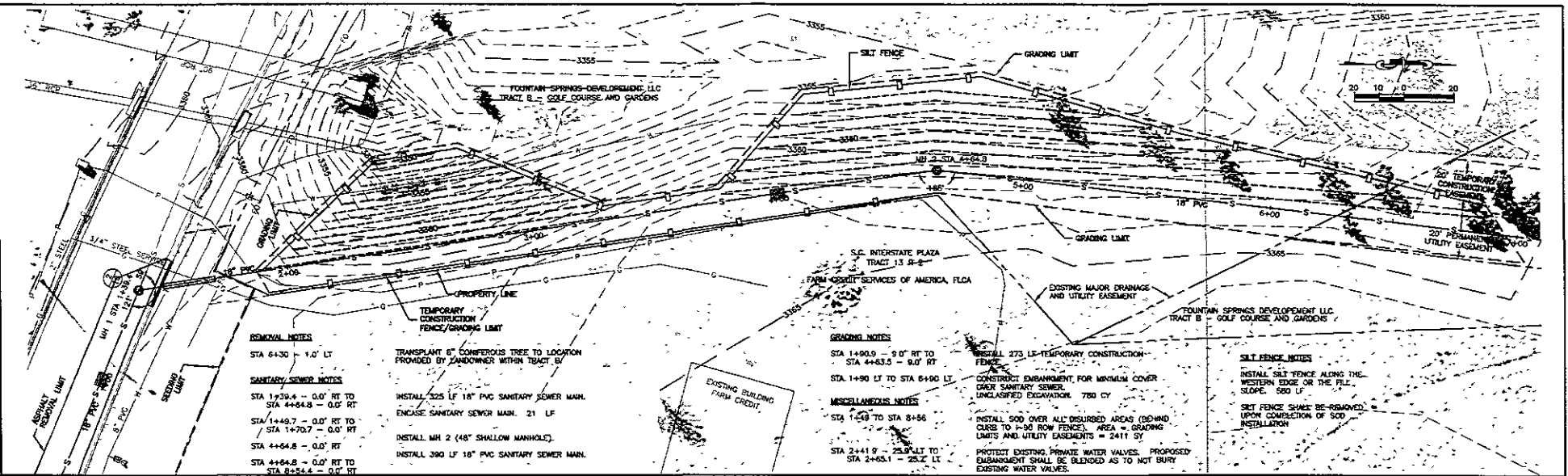
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NORTH PLAZA DRIVE PLAN & PROFILE
 STA -0+71.9 TO STA 1+39.42
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 6 OF 17



REMOVAL NOTES

- STA 6+30 - 9.0' LT
- SANITARY SEWER NOTES**
- STA 1+39.4 - 0.0' RT TO STA 4+64.8 - 0.0' RT
- STA 1+49.7 - 0.0' RT TO STA 1+70.7 - 0.0' RT
- STA 4+64.8 - 0.0' RT
- STA 4+64.8 - 0.0' RT TO STA 6+54.6 - 0.0' RT

TEMPORARY CONSTRUCTION FENCE/GRADING LIMIT

- TRANSPLANT 8" CONIFEROUS TREE TO LOCATION PROMOTED BY LANDOWNER WITHIN TRACT B1
- INSTALL 325 LF 18" PVC SANITARY SEWER MAIN.
- ENCASE SANITARY SEWER MAIN. 21 LF
- INSTALL MH 2 (18" SHALLOW MANHOLE).
- INSTALL 390 LF 18" PVC SANITARY SEWER MAIN.

GRADING NOTES

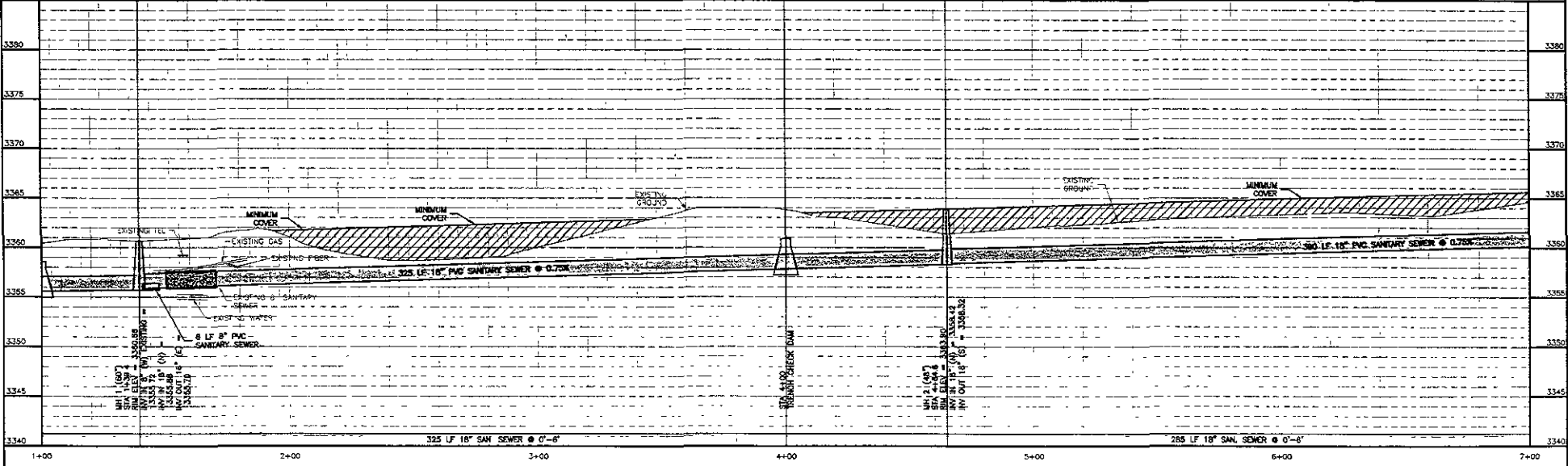
- STA 1+60.0 - 9.0' RT TO STA 4+63.6 - 9.0' RT
- STA 1+90 LT TO STA 6+90 LT
- STA 1+69 TO STA 8+66
- STA 2+41.9 - 25.0' LT TO STA 2+65.1 - 25.0' LT

MISCELLANEOUS NOTES

- INSTALL 275 LF TEMPORARY CONSTRUCTION FENCE
- CONSTRUCT EMBANKMENT FOR MINIMUM COVER OVER SANITARY SEWER. UNCLASSIFIED EXCAVATION. 700 CY
- INSTALL 500 OVER ALL DISBURSED AREAS (DOWN CURB TO 4-30 ROW FENCE). AREA = GRADING LIMITS AND UTILITY EASEMENTS = 2411 SY
- PROTECT EXISTING PRIVATE WATER VALVES. PROPOSED EMBANKMENT SHALL BE BLENDED AS TO NOT BURY EXISTING WATER VALVES.

SILT FENCE NOTES

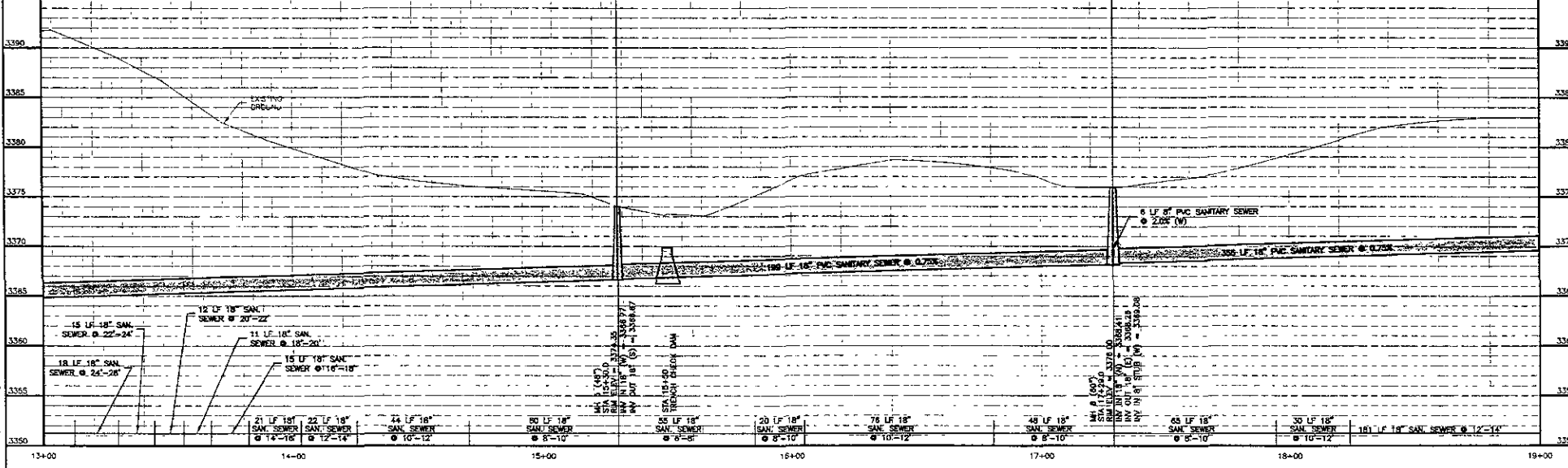
- INSTALL SILT FENCE ALONG THE WESTERN EDGE OR THE FILL SLOPE. 150 LF
- SILT FENCE SHALL BE REMOVED UPON COMPLETION OF SOIL INSTALLATION



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	PUBLIC WORKS DEPARTMENT		ENGINEERING DIVISION			
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SANITARY SEWER NOTES
 STA 15+30.0 - 0.0' RT
 STA 15+30.0 - 0.0' RT TO
 STA 17+29.0 - 0.0' RT
 STA 17+29.0 - 0.0' RT
 STA 17+29.0 - 0.0' RT TO
 STA 17+32.1 - 2.5' LT
 STA 17+29.0 - 0.0' RT TO
 STA 20+84.4 - 0.0' RT

INSTALL MH 5 (48")
 INSTALL 199 LF 18" PVC SANITARY SEWER MAIN
 INSTALL MH 5 (60")
 INSTALL 6 LF 6" PVC SANITARY SEWER STUB
 INSTALL 355 LF 18" PVC SANITARY SEWER MAIN



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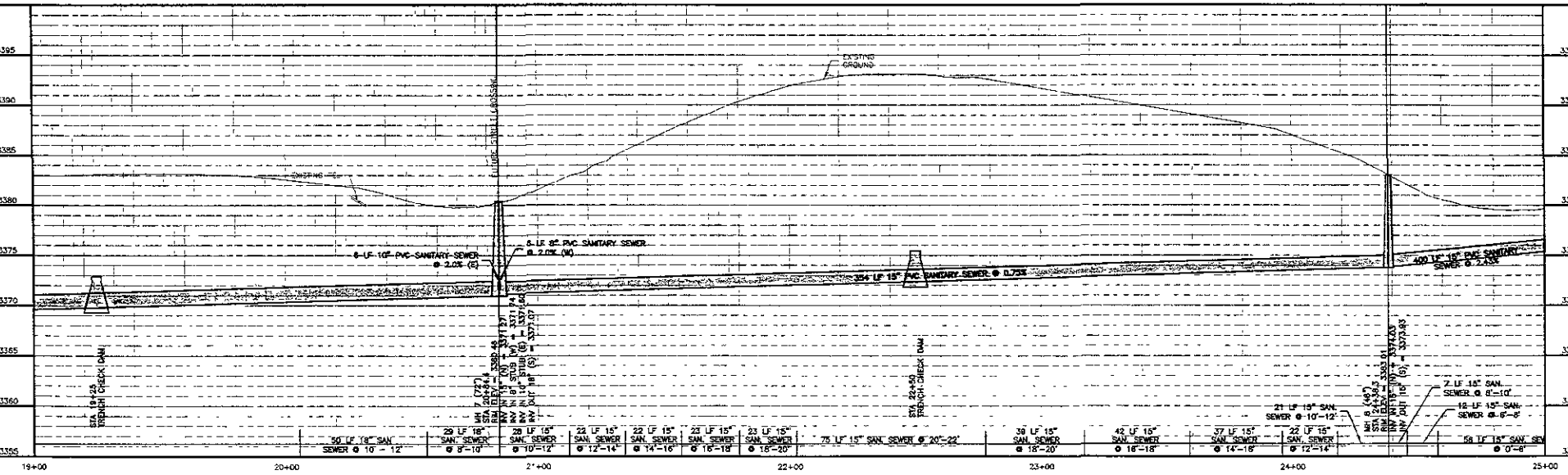
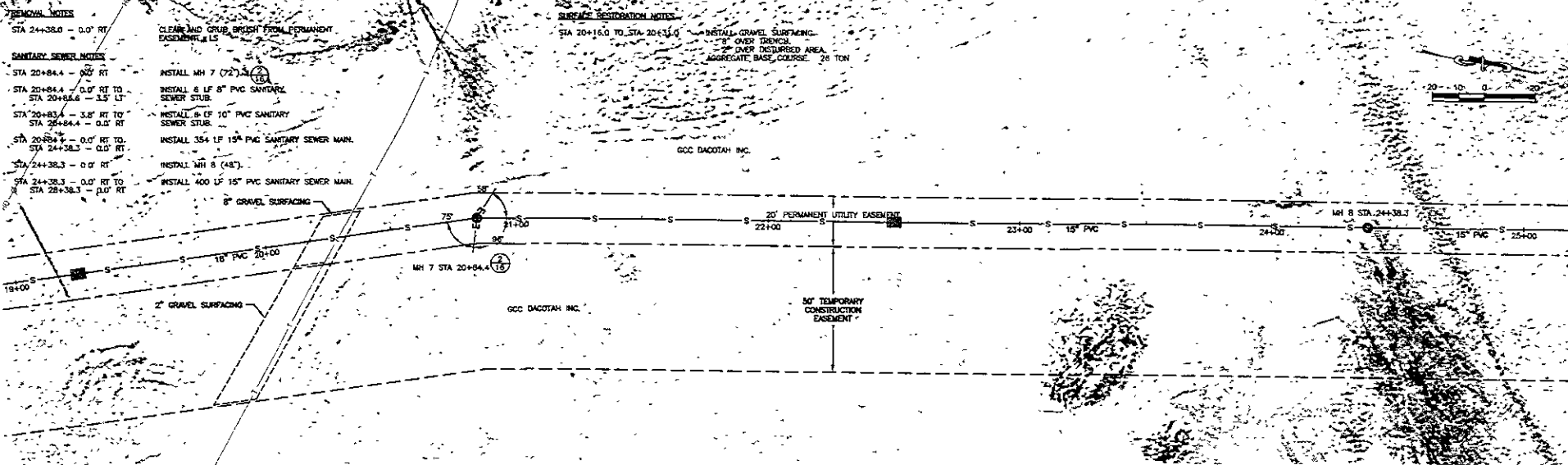



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NORTH DEADWOOD AVENUE PLAN & PROFILE
 STA 13+00 TO STA 19+00

NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258


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 OF
 17





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NORTH DEADWOOD AVENUE PLAN & PROFILE
 STA 19+00 TO STA 25+00
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 10 OF 17

AERIAL PHOTO RESOLUTION = 0.5 FEET

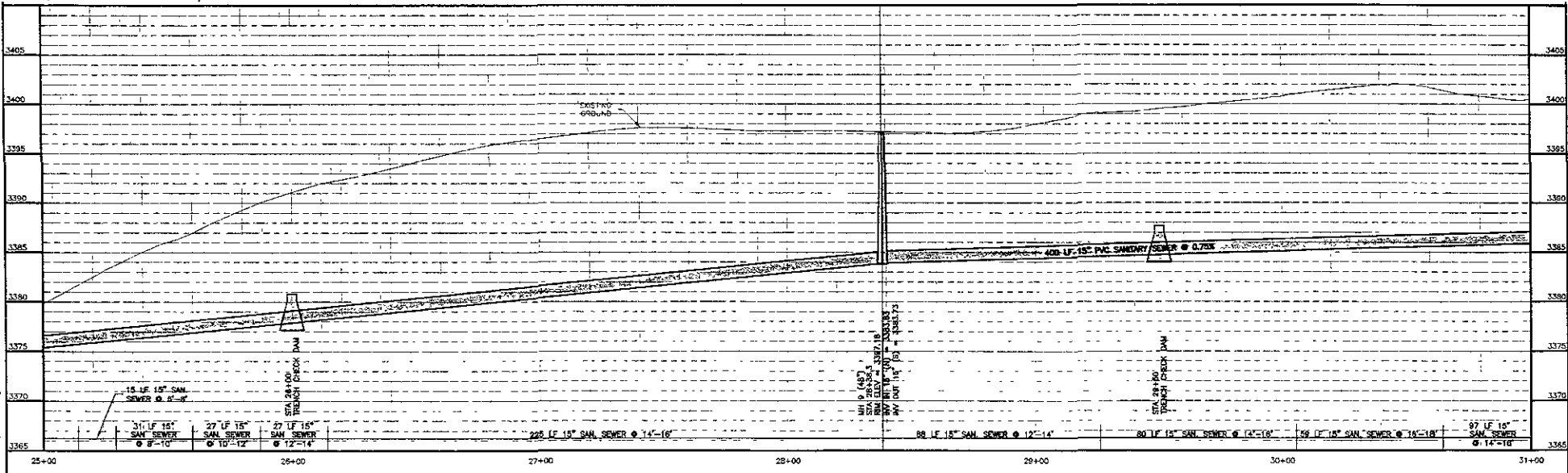
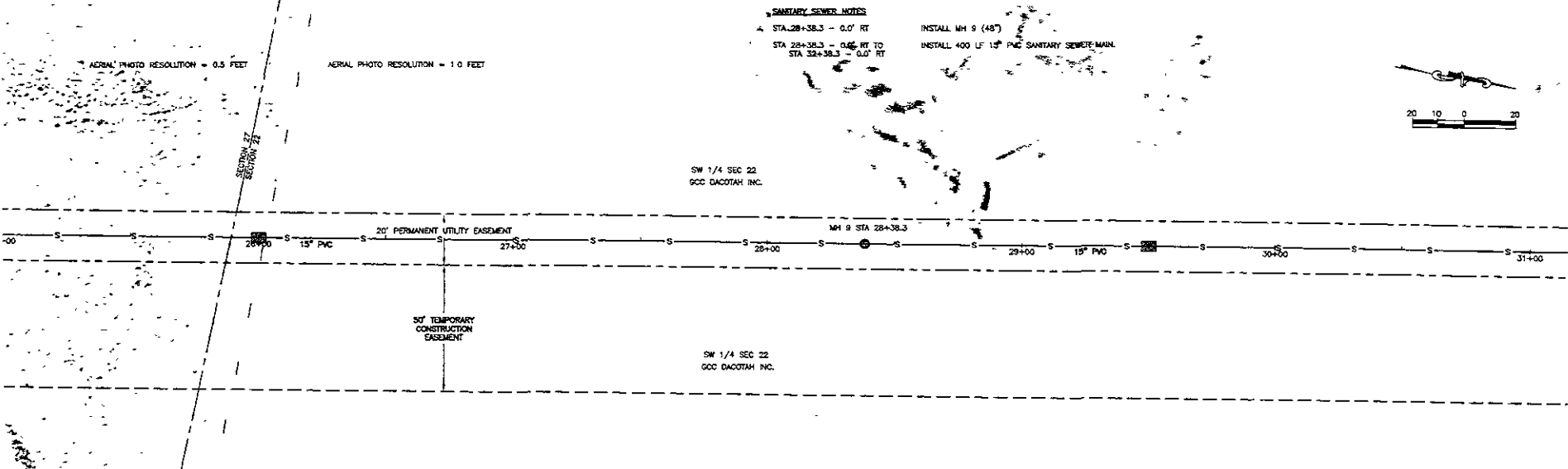
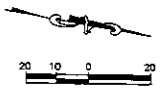
AERIAL PHOTO RESOLUTION = 1.0 FEET

SANITARY SEWER NOTES

- 1. STA. 28+38.3 - 0.0' RT
- 2. STA. 28+38.3 - 0.65' RT TO STA. 32+38.3 - 0.0' RT

INSTALL MH 9 (48")

INSTALL 400 LF 15" PVC SANITARY SEWER MAIN



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NORTH DEADWOOD AVENUE PLAN & PROFILE
 STA 25+00 TO STA 31+00

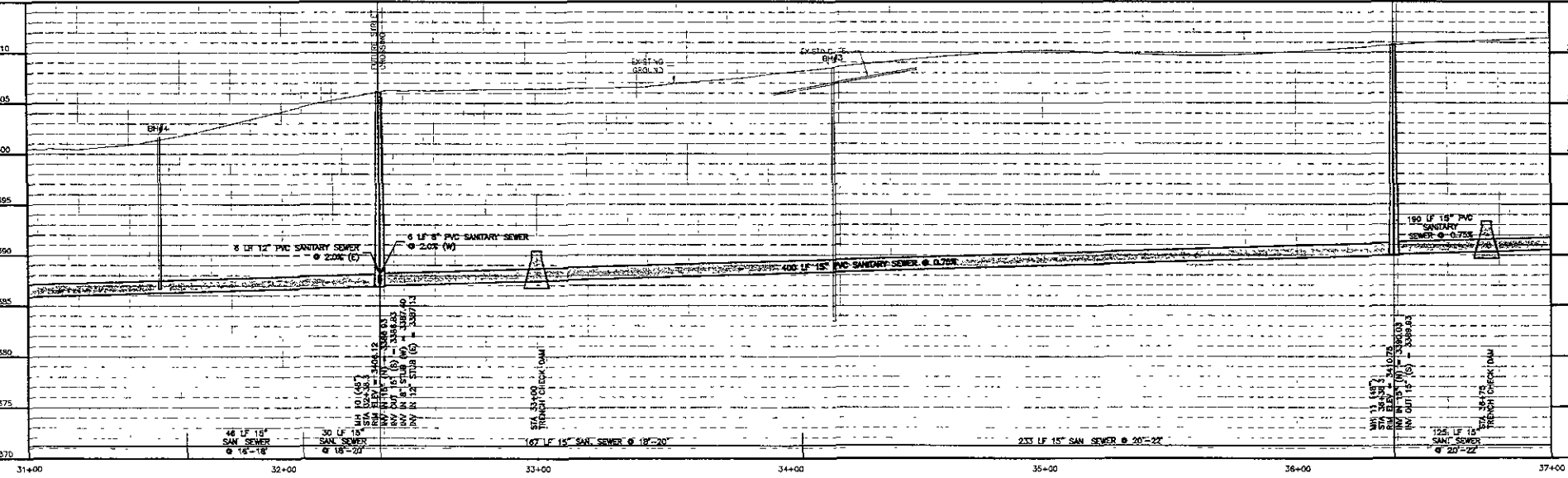
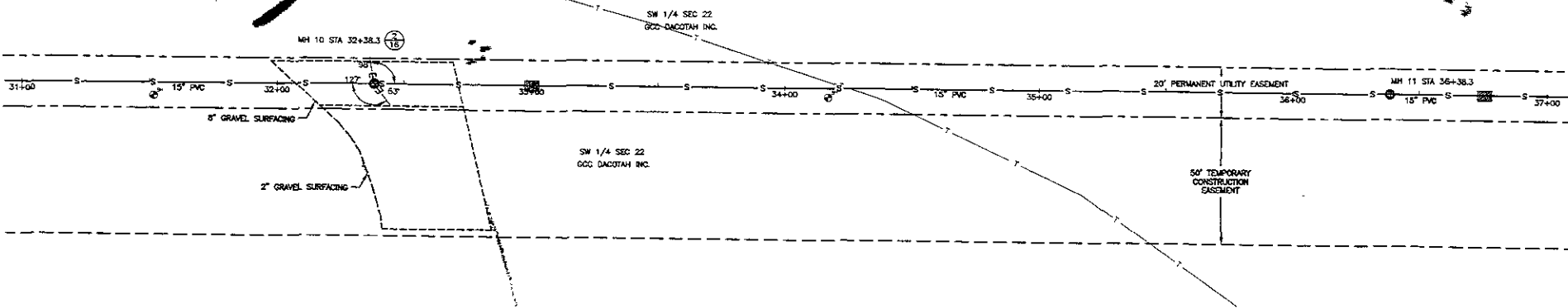
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 11
 OF 17

SANITARY SEWER NOTES
 STA 32+38.3 - 0.0' RT
 STA 32+37.6 - 3.9' LT TO
 STA 32+38.3 - 0.0' RT
 STA 32+38.3 - 0.0' RT TO
 STA 32+40.7 - 3.2' RT
 STA 32+38.3 - 0.0' RT TO
 STA 35+38.3 - 0.0' RT
 STA 36+38.3 - 0.0' RT
 STA 36+38.3 - 0.0' RT TO
 STA 38+28.3 - 0.0' RT

SURFACE RESTORATION NOTES
 INSTALL MH 10 (48")
 INSTALL 6 LF 8" PVC SANITARY
 SEWER STUB.
 INSTALL 6 LF 12" PVC SANITARY
 SEWER STUB.
 INSTALL 400 LF 15" PVC SANITARY
 SEWER MAIN.
 INSTALL MH 11 (48")
 INSTALL 190 LF 15" PVC SANITARY
 SEWER MAIN.

SURFACE RESTORATION NOTES
 STA 32+08.0 TO STA 32+67.0
 INSTALL GRAVEL SURFACING,
 8" OVER TRENCH
 2" OVER DISTURBED AREA.
 AGGREGATE BASE COURSE - 81.5 TON



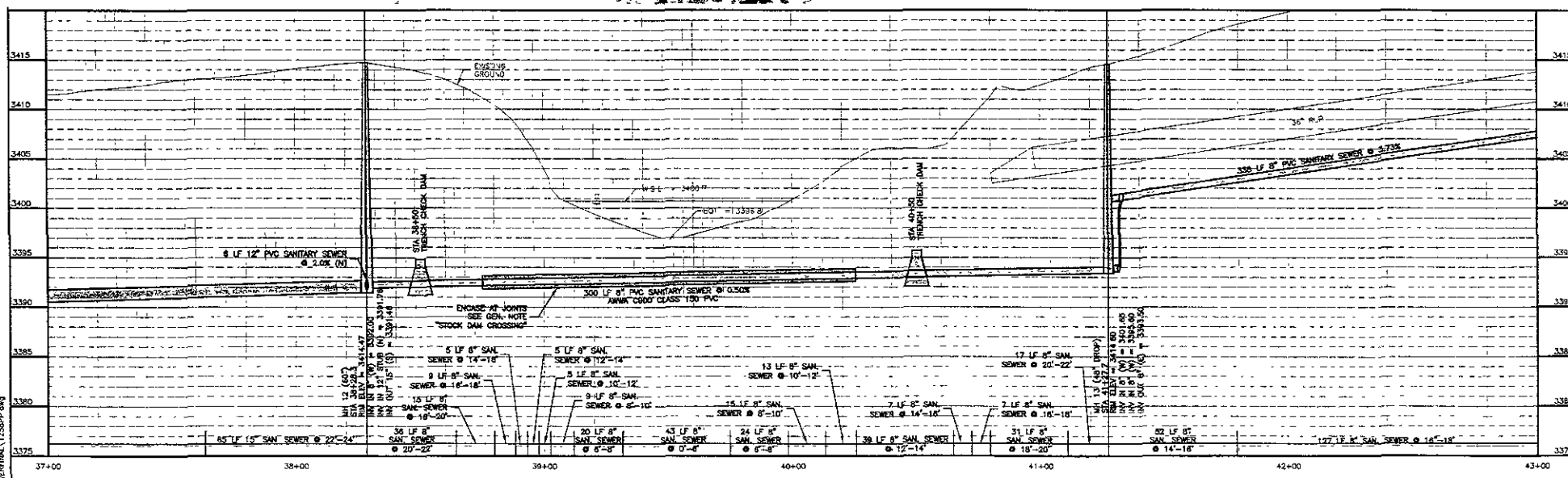
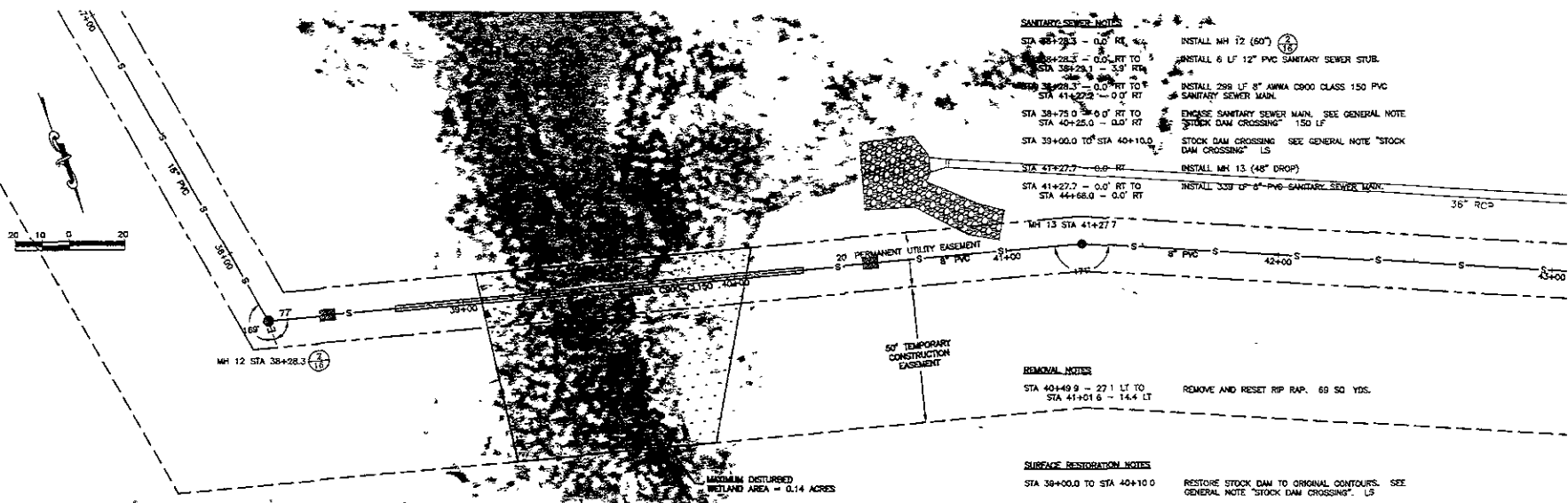
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NORTH DEADWOOD AVENUE PLAN & PROFILE
 STA 31+00 TO STA 37+00
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO. SSW02-1258

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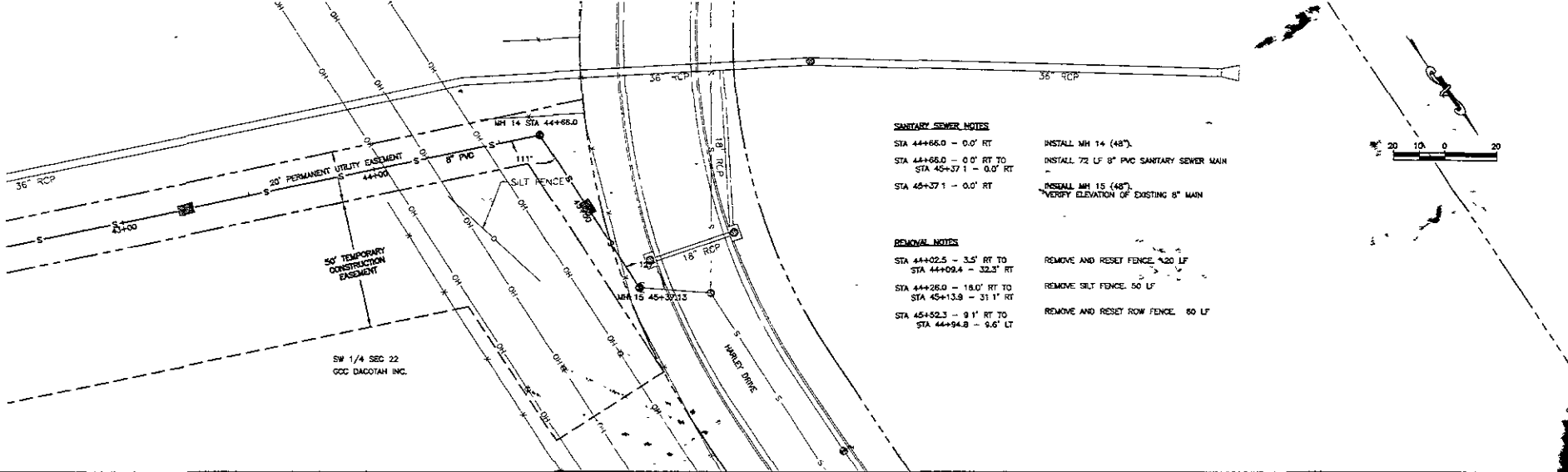
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DATE:	

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 Civil Engineering • Water Resources • Transportation • Land Surveying
 729 East Watertown St, Rapid City SD 57701 • Phone (605) 343-3311

NORTH DEADWOOD AVENUE PLAN & PROFILE
 STA 37+00 TO STA 43+00
NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 13 OF 17



SANITARY SEWER NOTES

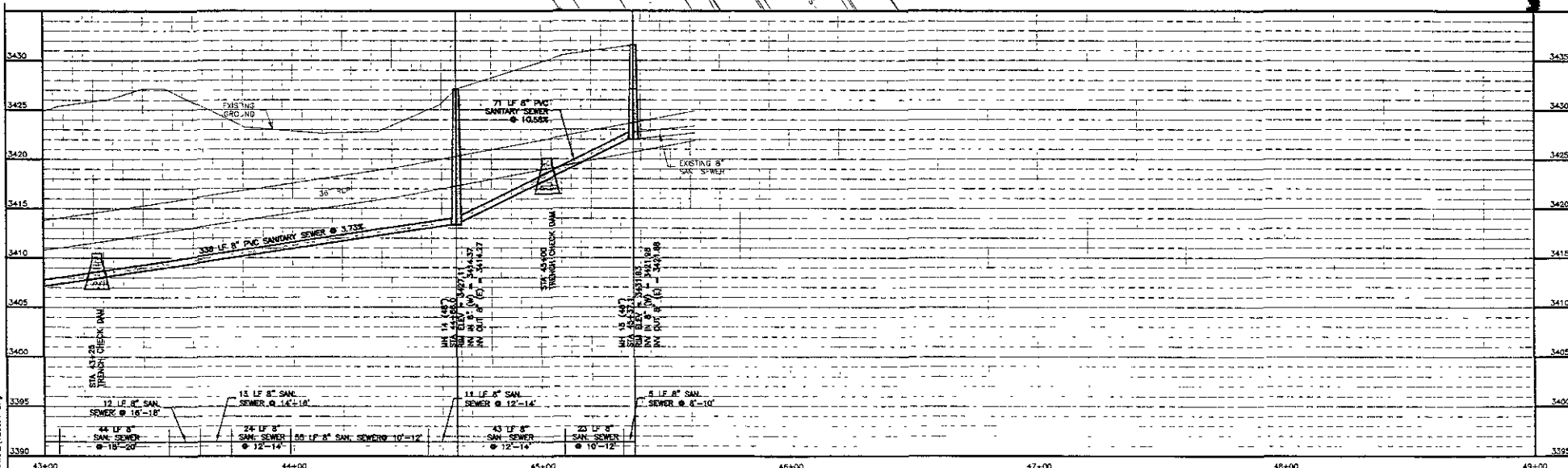
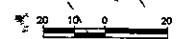
STA 44+86.0 - 0.0' RT
 STA 44+86.0 - 0.0' RT TO
 STA 45+37.1 - 0.0' RT
 STA 45+37.1 - 0.0' RT

INSTALL MH 14 (48")
 INSTALL 72 LF 8" PVC SANITARY SEWER MAIN
 INSTALL MH 15 (48")
 VERIFY ELEVATION OF EXISTING 8" MAIN

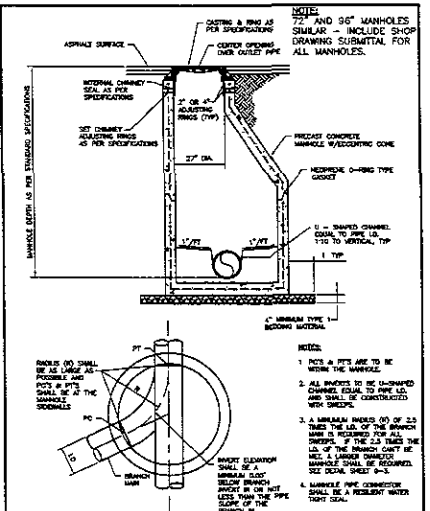
REMOVAL NOTES

STA 44+02.5 - 3.5' RT TO
 STA 44+09.4 - 32.3' RT
 STA 44+28.0 - 18.0' RT TO
 STA 45+13.9 - 31.1' RT
 STA 45+52.3 - 9.1' RT TO
 STA 44+94.8 - 8.6' LT

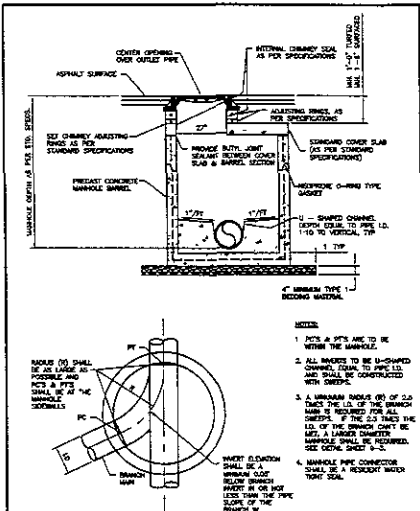
REMOVE AND RESET FENCE 120 LF
 REMOVE SILT FENCE 50 LF
 REMOVE AND RESET ROW FENCE 60 LF



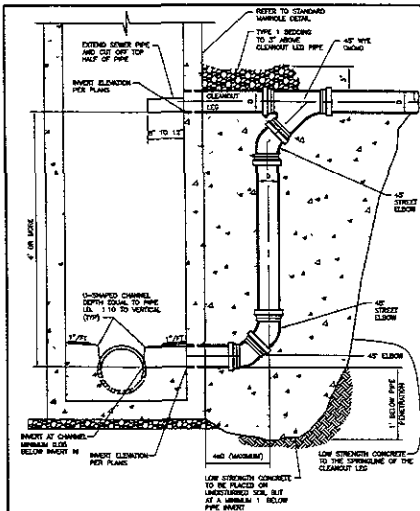
	CITY of RAPID CITY	SCALE: AS SHOWN		NORTH DEADWOOD AVENUE PLAN & PROFILE		SHEET 14 OF 17
	PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION	DATE: 12-08-06		STA 43+00 TO STA 49+00		
		DESIGNED: MRC/DFP	NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION			
		DRAWN: DRS	CITY OF RAPID CITY PROJECT NO SSW02-1258			
		REVISIONS:	Civil Engineering • Water Resources • Transportation • Land Surveying 729 East Waterbury St, Rapid City, SD 57702 • Phone (605) 343-1311			
		DATE:				



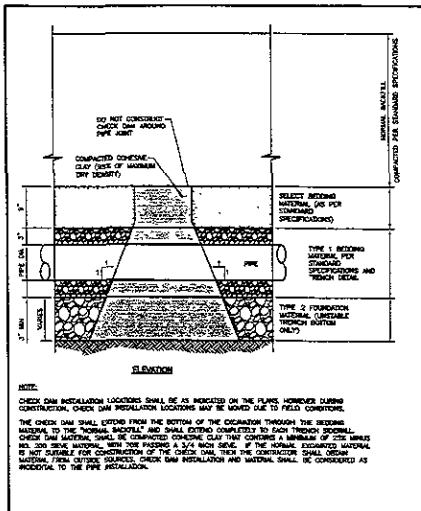
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-20-03
 STANDARD MANHOLE DETAIL WITH MONOLITHIC BASE (48" x 60")
 SEC. SHT 9-1



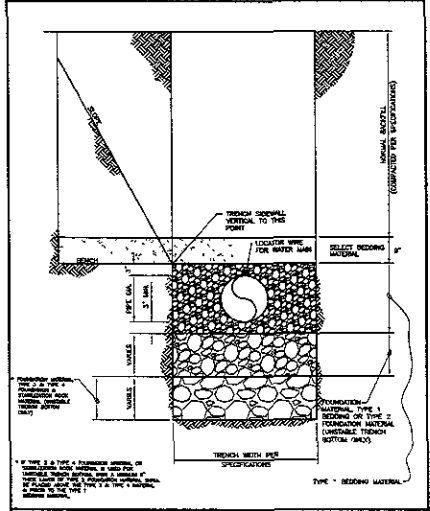
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-20-03
 STANDARD SHALLOW MANHOLE DETAIL WITH MONOLITHIC BASE (48" x 60" x 72")
 SEC. SHT 9-2



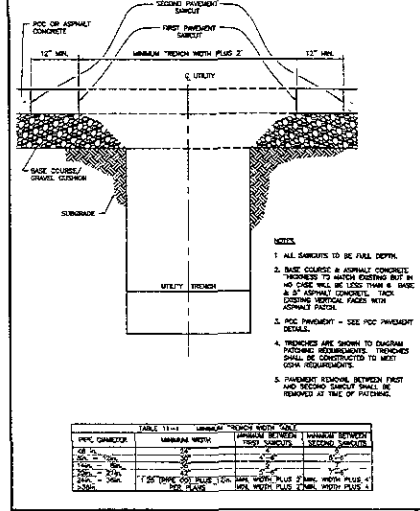
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-20-03
 STANDARD DROP MANHOLE DETAIL FOR INVERT CHANGES MORE THAN 4'
 SEC. SHT 9-5



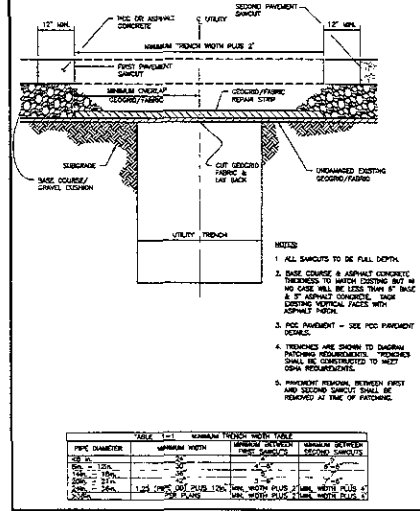
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-15-02
 TYPICAL TRENCH CHECK DAM DETAIL FOR WATER & SEWER MAINS
 SEC. SHT 11-2



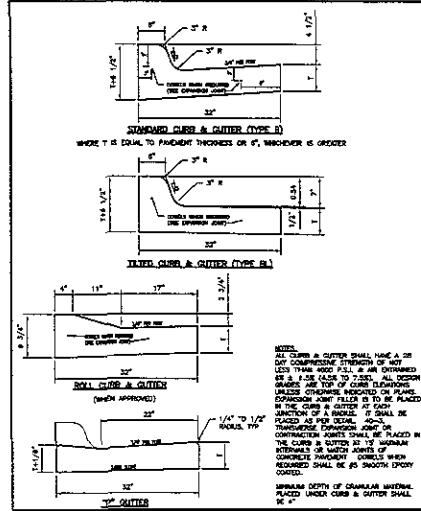
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-20-03
 TRENCH DETAIL FOR WATER & SEWER MAIN
 SEC. SHT 11-3



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 3-2-08
 UTILITY TRENCH PATCH DETAIL
 SEC. SHT 41-1



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 3-2-05
 GEOGRID/FABRIC UTILITY TRENCH PATCH DETAIL
 SEC. SHT 41-2



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE: 11-20-03
 CURB & GUTTER
 SEC. SHT 60-2



CITY of RAPID CITY
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION

SCALE: AS SHOWN
 DATE:
 DESIGNED:
 DRAWN:
 REVISIONS:
 DATE:

Ferber Engineering Company, Inc.
 Civil Engineering • Water Resources • Transportation and Surveying
 723 East Waukegan St., Rapid City, SD 57701 • Phone (605) 343-3311

DETAILS
 NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO. SSW02-1258

SHEET 15 OF 17



CITY of RAPID CITY
 PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

SCALE	AS SHOWN
DATE	12-08-06
DESIGNED	SMK/DPF
DRAWN	DMS
REVISIONS	
DATE	

Ferber Engineering Company, Inc.
 Civil Engineering • Water Resources • Transportation • Land Surveying
 729 East Waterdown St., Rapid City, SD 57701 • Phone (605) 343-3711

CROSS SECTIONS
 NORTH DEADWOOD AVENUE SANITARY SEWER EXPANSION
 CITY OF RAPID CITY PROJECT NO SSW02-1258

SHEET 17 OF 17