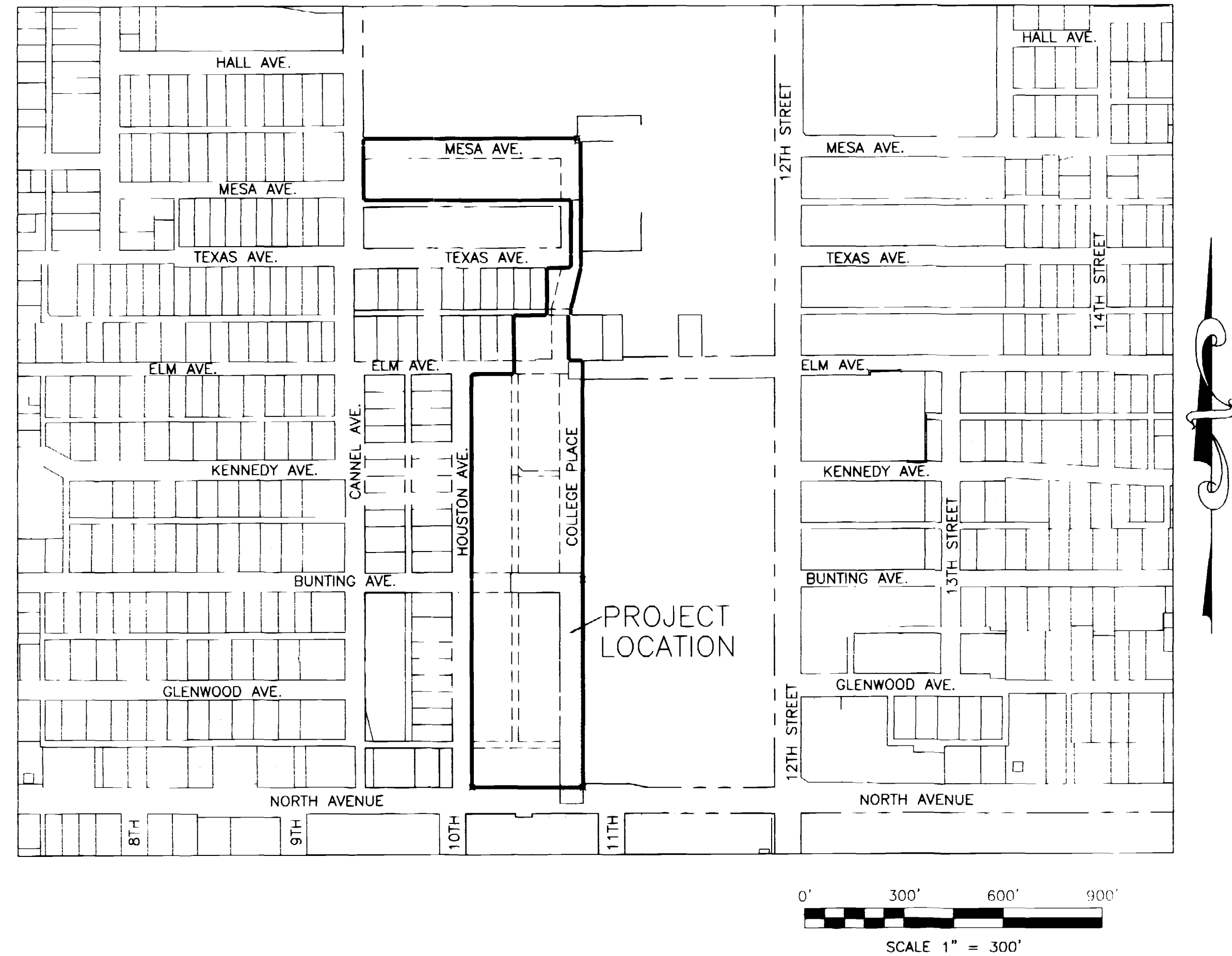


COLLEGE PLACE / BUNTING AVE. SANITARY / STORM SEWER PROJECT



VICINITY MAP

PROJECT BENCHMARK
MCSM
C-N1/16 CORNER
SECTION 35
T1N, R1W, U.M.
ELEV=4728.00 (NAVD 88)

PREPARED BY:
ROLLAND ENGINEERING
405 RIDGES BLVD.
GRAND JUNCTION, CO. 81503
(970) 243-8300

PREPARED FOR:
MESA STATE COLLEGE
667 24-1/2 Road
GRAND JUNCTION, CO. 81505

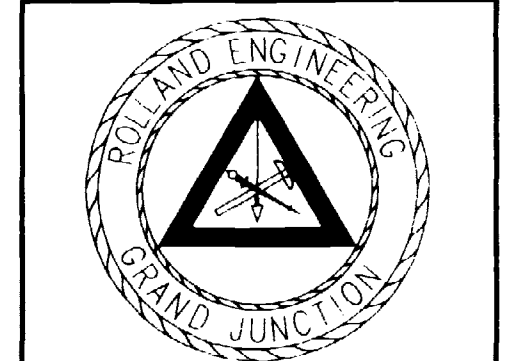
SHEET INDEX

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STORM SEWER PLAN AND PROFILE	5-6

AS-BUILT
1/13/06

ACCEPTED FOR CONSTRUCTION
CITY DEVELOPMENT ENGINEER
DATE

ACCEPTED AS CONSTRUCTED
[Signature]
CITY DEVELOPMENT ENGINEER
UTILITY 01/13/06
DATE



ROLLAND ENGINEERING
405 Ridges Blvd
Grand Jct, CO 81503
(970) 243-8300

GENERAL NOTES

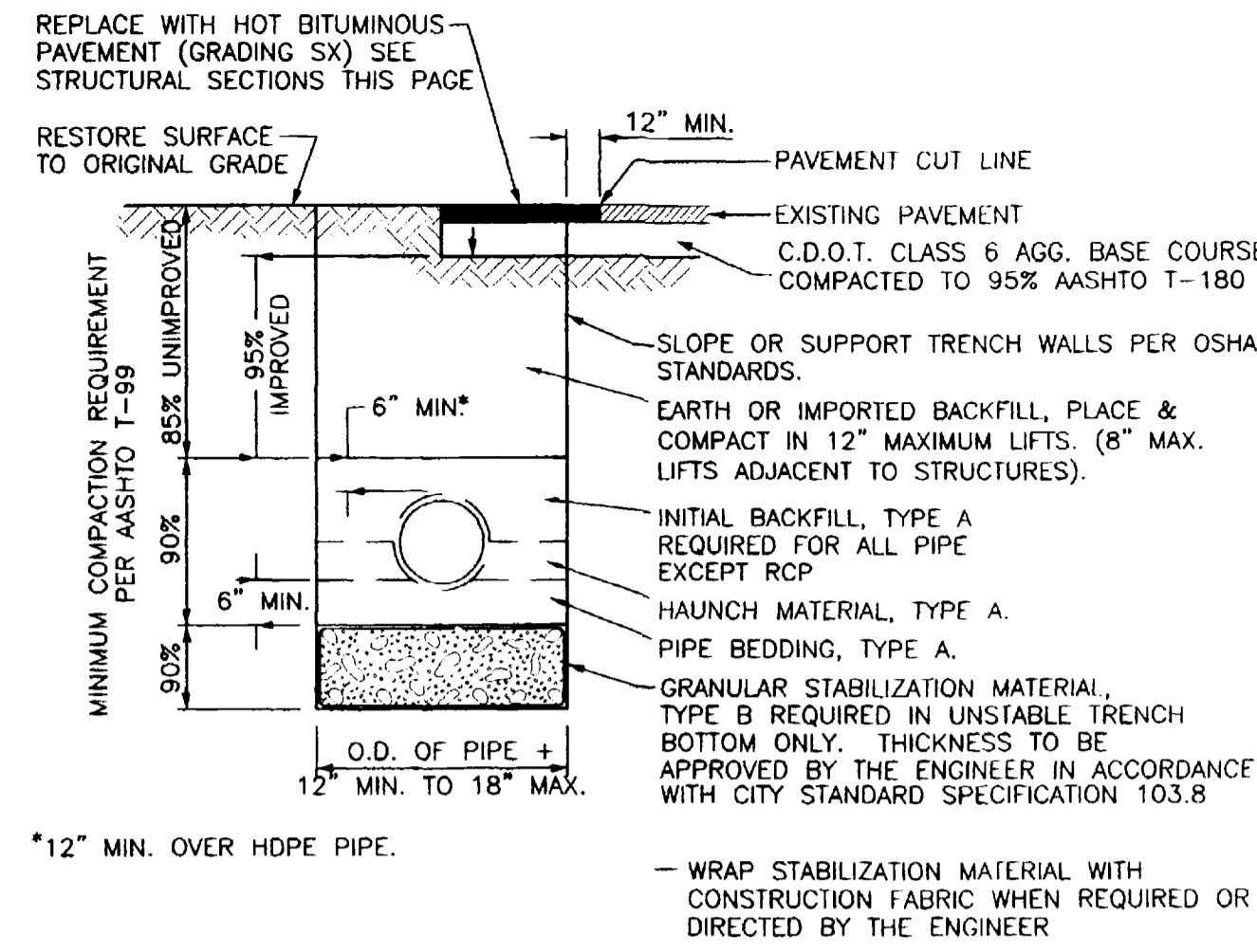
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF GRAND JUNCTION STANDARDS, EXHIBITS, AND SPECIFICATIONS (EXCLUDING MEASUREMENT AND PAYMENT) UNLESS OTHERWISE NOTED.
- SUBGRADE SHALL BE INSPECTED BY THE CIVIL OR GEOTECHNICAL ENGINEER 1) PRIOR TO PLACEMENT OF BASE COURSE AND 2) PRIOR TO PLACEMENT OF ASPHALT. CONTRACTOR SHALL PROOF ROLL AS NECESSARY IF REQUESTED TO VISUALLY INSPECT STABILITY.
- THE CONTRACTOR SHALL HAVE ONE COPY OF THE PLANS AND A COPY OF THE CITY OF GRAND JUNCTION'S STANDARD EXHIBITS AND SPECIFICATIONS ON SITE AT ALL TIMES.
- THE CONTRACTOR WILL PROVIDE COMPACTION AND MATERIAL TESTING. THIS TESTING WILL BE PER THE CITY OF GRAND JUNCTION SPECIFICATION. PAGE RB-3. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL TESTING. ALL RE-TESTING WILL BE AT THE CONTRACTOR'S EXPENSE.
- THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. SIGNIFICANT EFFORT HAS BEEN MADE TO IDENTIFY THE EXISTING UTILITIES; HOWEVER, UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE DRAWINGS. ADDITIONALLY, THE DEPTH OF EXISTING UTILITIES IS NOT KNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, PUBLIC AND PRIVATE, IN THE FIELD BEFORE PERFORMING ANY WORK ON OR AROUND THEM.
- THE CONTRACTOR SHALL COORDINATE WITH ALL AFFECTED UTILITIES REGARDING RELOCATIONS AND ADJUSTMENTS DURING CONSTRUCTION TO ACCOMPLISH THE WORK IN A TIMELY MANNER WITH MINIMUM DISRUPTION IN SERVICE.
- THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS WHERE PROPOSED CONSTRUCTION TIES TO EXISTING FACILITIES PRIOR TO ANY WORK.
- ALL PAVEMENT REMOVAL SHALL BE DONE BY WHEEL CUT OR JACKHAMMER. PAVEMENT PATCHING SHALL BE IN ACCORDANCE WITH CITY OF GRAND JUNCTION OR CDOT PERMIT, WHICH EVER MAY APPLY.
- DUST CONTROL MEASURES MUST BE TAKEN DURING CONSTRUCTION IN ACCORDANCE WITH MUNICIPAL CODE 16-126, AND CONSTRUCTION PARKING AREAS MAINTAINED AS REQUIRED AT ZD 6.6.A.9.b.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY UNDERGROUND UTILITY OR "WORK WITHIN THE RIGHT-OF-WAY" PERMITS FROM THE CITY OF GRAND JUNCTION, OR CDOT, WHICH EVER MAY APPLY, FOR THE WORK WITHIN THE NORTH AVE, RIGHT-OF-WAY.

STORM SEWER NOTES

- BACKFILL AROUND MANHOLES, INLET BOXES, AND OTHER STRUCTURES SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% AASHTO T-180.
- ALL PORTLAND CEMENT CONCRETE SHALL BE COLORADO DEPARTMENT OF TRANSPORTATION CLASS "B". (SECTION 601.02).
- ANY EXISTING PAVEMENT NOT DESIGNATED FOR REMOVAL WHICH IS DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN-KIND BY CONTRACTOR.
- ALL CONCRETE WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED BY A LICENSED CITY CONTRACTOR.
- SEE APPROVED CONSTRUCTION DRAWINGS FOR ALL LOCATIONS, GRADES AND ELEVATIONS OF ALL DRAINAGE IMPROVEMENTS.
- MANHOLE RING AND COVER SHALL BE ADJUSTED TO FINISHED GRADE USING NON-SHRINK GROUT AND PRE-CAST CONCRETE GRADE RINGS OR WITH THE "WHIRLY GIG" METHOD. GROUT THICKNESS SHALL NOT EXCEED 2 INCHES. GROUT SHALL BE PLACED UNDER THE CAST IRON RING. NO GROUT SHALL BE PLACED BETWEEN THE CONCRETE GRADE RINGS.
- ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS, STANDARD STORM DRAIN DETAILS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UNDERGROUND UTILITIES.

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	IR or IRR.	IRRIGATION
ABC	AGGREGATE BASE COURSE	IRMH	IRRIGATION MANHOLE
ADA	AMERICANS WITH DISABILITIES ACT	IRWV	IRRIGATION WATER VALVE
AH	AHEAD	L.F.	LINEAL FEET
ANG	ANGLE	LF	LINEAL FEET
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	L.S.	LUMP SUM
AVE.	AVENUE	LT, L	LEFT
B.O.W., B/W	BACK-OF-WALK	MAINT.	MAINTENANCE
BK	BACK	MAX.	MAXIMUM
BLDG	BUILDING	MCSM	MESA COUNTY SURVEY MONUMENT
BSMT.	BASEMENT	MIN	MINIMUM
C	CUT	N	NORTH
C.D.O.T.	COLORADO DEPARTMENT OF TRANSPORTATION	NO.	NUMBER
C.G.	CURB AND GUTTER	NRCP	NONREINFORCED CONCRETE PIPE
CL	CENTERLINE	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	O.C.	ON CENTER
C.O.	CLEANOUT	O.D.	OUTSIDE DIAMETER
CON	CONCRETE	OFF	OFFSET
CONC.	CONCRETE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CONST.	CONSTRUCTION	PBX	PULL BOX
CP	CONCRETE PIPE	PC	POINT OF CURVATURE
C.Y.	CUBIC YARD	PNT	POINT
CU. YD.	CUBIC YARD	PSCO	PUBLIC SERVICE OF COLORADO
DEG.	DEGREE	PT	POINT OF TANGENCY
DIA	DIAMETER	PVC	POINT VERTICAL CURVE
DWY	DRIVEWAY	PVI	POLYVINYL CHLORIDE PIPE
E	EAST	PVT	POINT VERTICAL INTERSECT PAVEMENT
EA.	EACH	R	POINT VERTICAL TANGENCY RADIUS
EC	EDGE OF CONCRETE	R	RIGHT-OF-WAY
E.G.	EDGE OF GRAVEL	RCF	REINFORCED CONCRETE PIPE
EL	ELEVATION	RT, R	RIGHT
EP	EDGE OF PAVEMENT	S	SOUTH
EQ	EQUATION	S.Y.	SQUARE YARD
EX GDWY	EXISTING GRAVEL DRIVEWAY	SD	SIGHT DISTANCE
EX. or EXIST.	EXISTING	SER.	SERVICE
F	FILL	STA.	STATION
F.F.	FINISH FLOOR	S.S. LAT.	SANITARY SEWER LATERAL
FH	FIRE HYDRANT	STD	STANDARD
FL or F.L.	FLOWLINE	STR.	STRUCTURE
FT.	FOOT	SW	SIDEWALK
GB	GRADE BREAK	TEMP	TEMPORARY
HBP	HOT BITUMINOUS PAVEMENT	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE PIPE	U.S.	UNITED STATES
I.D.	INSIDE DIAMETER	USPS	UNITED STATES POSTAL SERVICE
INV.	INVERT	UTIL	UTILITY
		VC	VERTICAL CURVE
		W	WEST
		WM	WATER METER



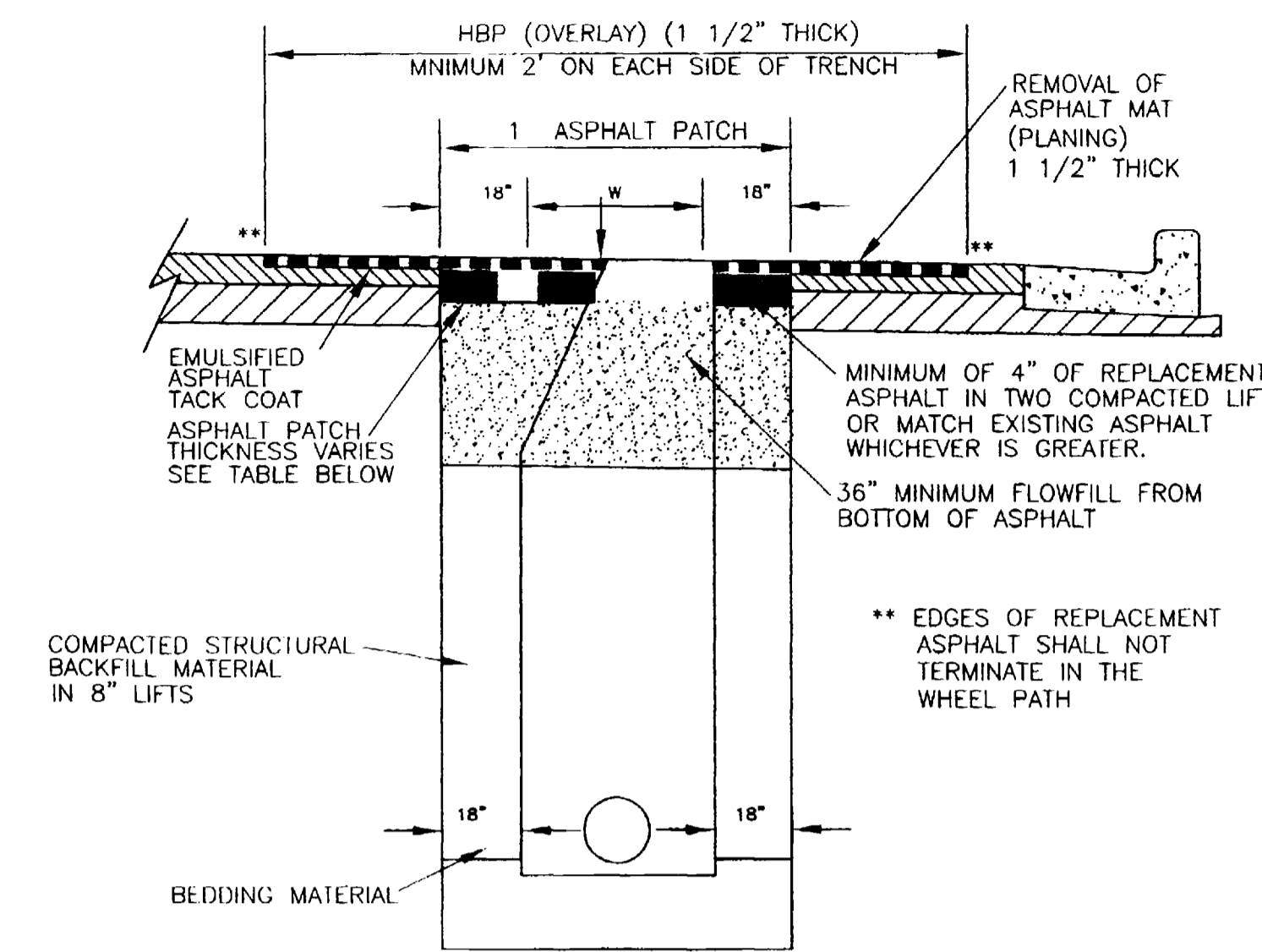
SIEVE SIZE	PIPE BEDDING, HAUNCH & BACKFILL MATERIAL (TYPE A)	GRANULAR STABILIZATION MATERIAL (SCREENED OR CRUSHED ROCK TYPE B)	IMPORTED MATERIAL (TO BE USED WHERE SPECIFIED OR DIRECTED BY THE ENGINEER)
1/2 INCH	---	---	100
2 INCH	---	100	---
1 INCH	100	---	---
NO 4	---	15 MAX	---
NO 200	20 MAX	---	3% - 20%

IMPORTED MATERIAL SHALL ALSO MEET HAZEN UNIFORMITY COEFF. (C_u) > 6 AND COEFFICIENT OF CURVATURE (C_c) 1 TO 8 AND PLASTICITY INDEX (PI) MAXIMUM OF 7.

ALL BACKFILL MATERIAL SHALL BE PLACED FULL WIDTH IN 12" MAX. LIFTS (8" MAX. LIFTS WITHIN 2' OF STRUCTURES) AND COMPACTED TO THE MIN. RELATIVE DENSITIES SHOWN.

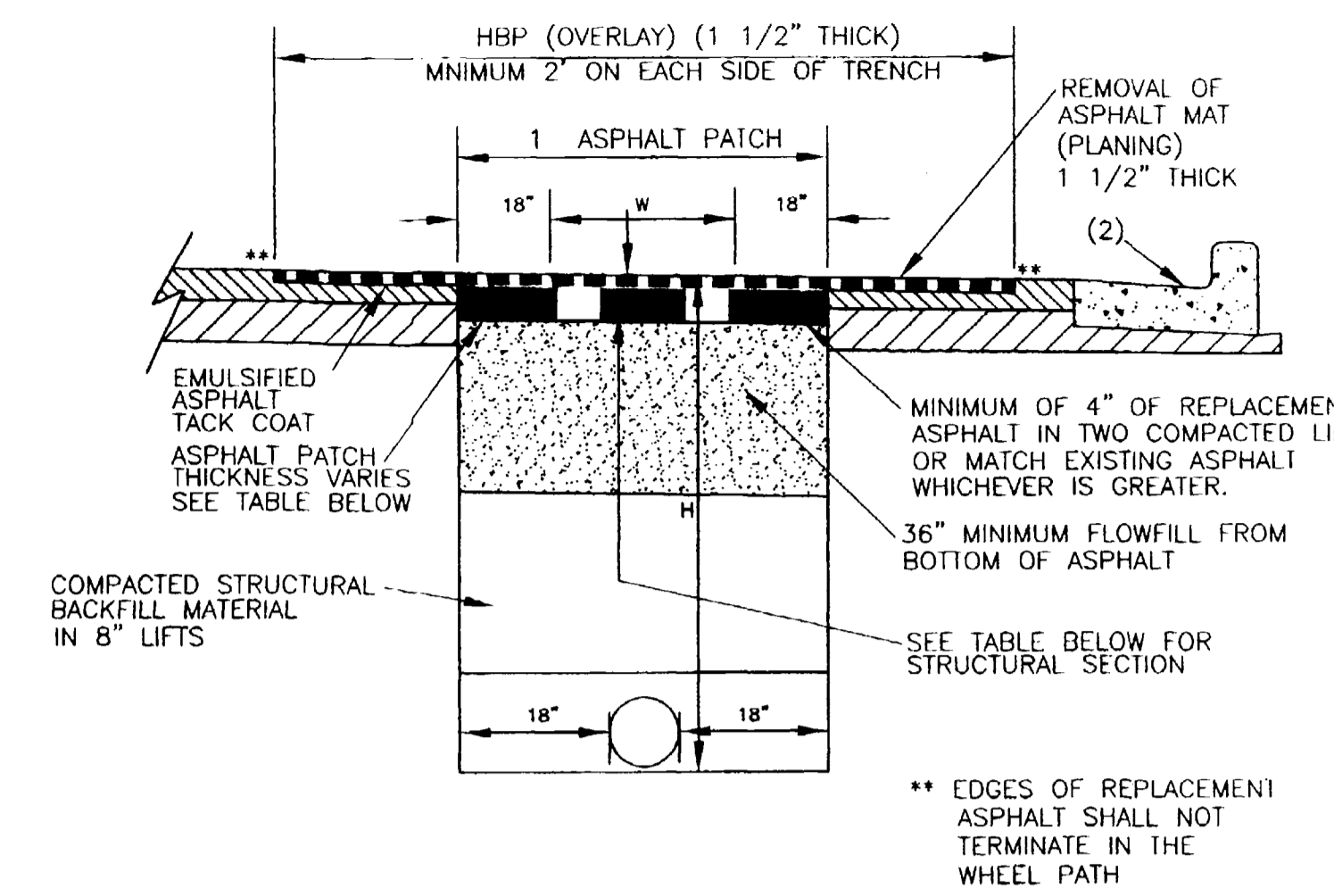
NOTE: NATIVE MATERIAL MAY BE USED IN LIEU OF GRANULAR BEDDING & HAUNCHING MATERIAL WHEN APPROVED BY THE ENGINEER AND THE NATIVE MATERIAL IS IN COMPLIANCE WITH SIZE REQUIREMENTS FOR "TYPE A".

BUNTING AND COLLEGE PLACE
TYPICAL TRENCH DETAIL
N.T.S.



- MAXIMUM WIDTH FOR REMOVAL OF ASPHALT PAVEMENT AND HOT BITUMINOUS PAVEMENT (PATCHING) INCLUDING ABC CLASS 6, UNLESS OTHERWISE NOTED OR DIRECTED. EXISTING PAVEMENT DAMAGED OR REMOVED BEYOND THESE LIMITS SHALL BE REPLACED BY THE CONTRACTOR AT NO COST.
- DEPENDENT ON ASPHALT THICKNESS ASPHALT MAY BE SAW CUT OR ROTO-MILLED.

NORTH AVENUE, IN R.O.W.
MANHOLE BACKFILL DETAIL WITH OVERLAY
N.T.S.

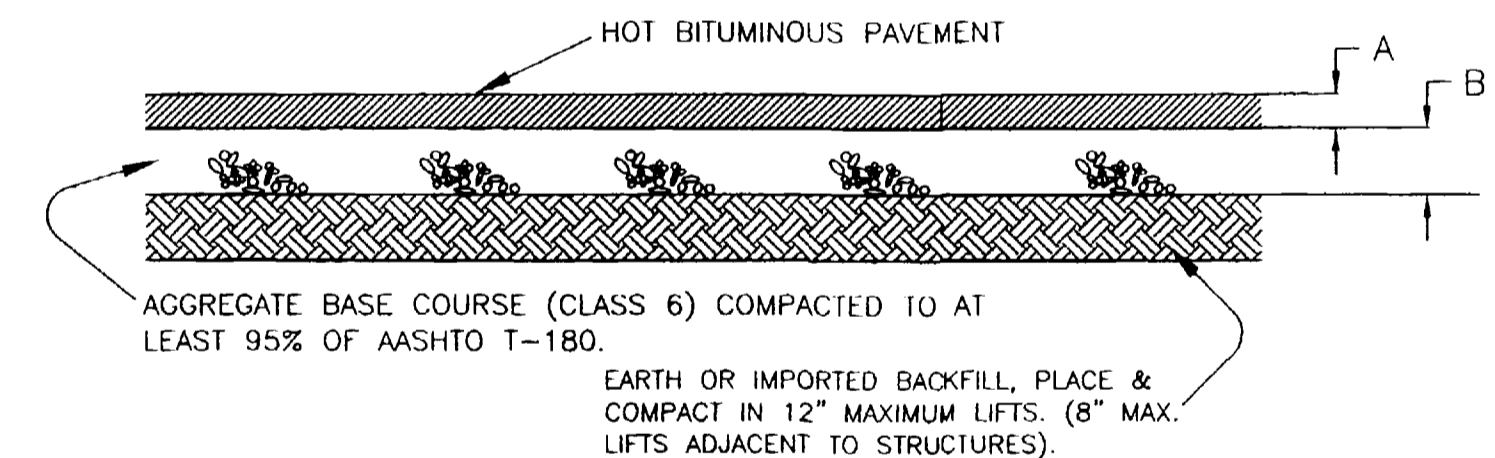


- MAXIMUM WIDTH FOR REMOVAL OF ASPHALT PAVEMENT AND HOT BITUMINOUS PAVEMENT (PATCHING) INCLUDING ABC CLASS 6, UNLESS OTHERWISE NOTED OR DIRECTED. EXISTING PAVEMENT DAMAGED OR REMOVED BEYOND THESE LIMITS SHALL BE REPLACED BY THE CONTRACTOR AT NO COST.
- THE CONTRACTOR SHALL REMOVE AND REPLACE, AT NO ADDITIONAL COST, ALL CURB, GUTTER, SIDEWALK DAMAGED BY HIS OPERATIONS THAT IS NOT DESIGNATED TO BE REMOVED AND REPLACED.
- DEPENDENT ON ASPHALT THICKNESS ASPHALT MAY BE SAW CUT OR ROTO-MILLED.

NORTH AVENUE, IN R.O.W.
TRENCH & PAVEMENT REPAIR DETAIL WITH OVERLAY
N.T.S.

SANITARY SEWER NOTES

- All sewerline construction shall conform to City of Grand Junction Standards and Specifications.
- All materials and workmanship shall be subject to inspection by the City. The City reserves the right to accept or reject any materials and workmanship that does not conform to its Standards and Specifications.
- The Contractor shall have one signed copy of the Plans and a copy of the City of Grand Junction Standards and Specifications at the job site at all times.
- All sanitary sewer pipe shall be PVC SDR-35 unless otherwise specified. All pipe joints shall be 13 foot joints unless otherwise approved by the Engineer.
- All sewer mains shall be laid to grade utilizing a pipe laser.
- All service line connections (4" Lateral) to the new main shall be accomplished with full body wyes or tees. Tapping saddles will not be allowed.
- All trenches shall be compacted to 95% as determined by AASHTO T-99. Contractor shall be required to perform all necessary compaction tests through a certified soils lab. A copy of the compaction test results shall be provided to the District during the course of the project.
- A minimum 10-foot separation shall be maintained at all times between waterlines and sewer lines (except at specified crossings).
- All sanitary sewer services to be PVC SDR 35 unless otherwise specified.
- Sewer service stub-outs shall be capped and plugged. Stub out shall be marked with a 4x4 inch post painted green buried 3 feet above grade. As-built surveying for vertical grade of stub out required prior to backfill.
- The Contractor shall notify the City at least 48 hours prior to commencement of construction.
- Manholes shall be constructed as shown on the City of Grand Junction Standard Sanitary Sewer Detail sheets.
- 4 inch shall not be connected directly into manholes. All 6 inch services shall be connected to the main at the manhole.
- The Contractor is responsible for all required sewerline testing to be completed in the presence of the City Engineer or their representative. Final testing is to be accomplished only after all other infrastructure has been installed. This includes waterlines, gas lines, electric lines, etc. Testing will be performed after all compaction of street subgrade and prior to street paving. Final lamping will also be accomplished after paving is completed to insure that the line is clean. These tests will be the basis for issuing Initial Acceptance of the sewerline extension.
- When connecting to existing manholes, it is necessary to core drill the existing manhole wall and base and provide a "PSX" positive seal gasket to accommodate the new invert-in. The manhole base and wall is to be grouted to provide a water tight seal and the invert grouted as necessary to provide for a smooth invert channel. All grout used on the invert channel should be suitable for feathering applications and installed per the manufacturer's recommendation.



	A	B
COLLEGE PLACE & ELM AVENUE	2"	10"
NORTH AVENUE SEE NOTE BELOW	5"	.

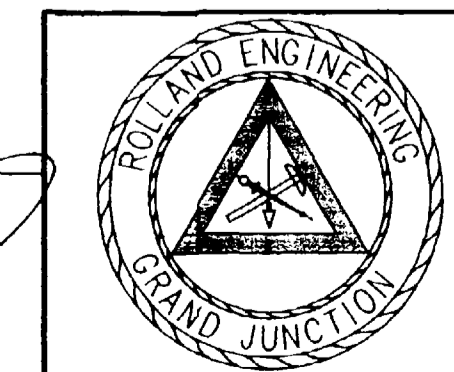
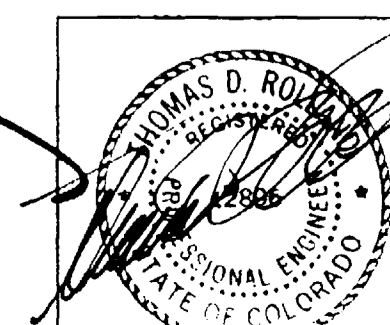
* PAVEMENT REPLACEMENT FOR NORTH AVE. SHALL BE THE ABOVE SECTION OR MATCHING THE EXISTING SECTION WHICHEVER IS HEAVIER.

PAVEMENT SECTION
N.T.S.

AS-BUILT
1/13/06

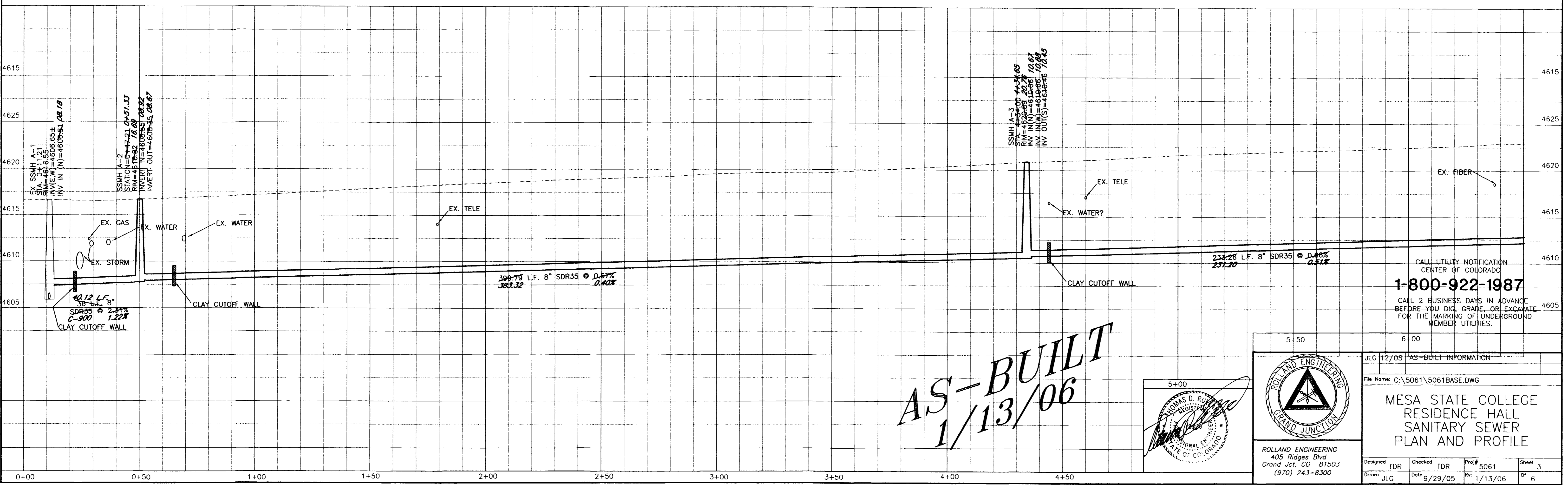
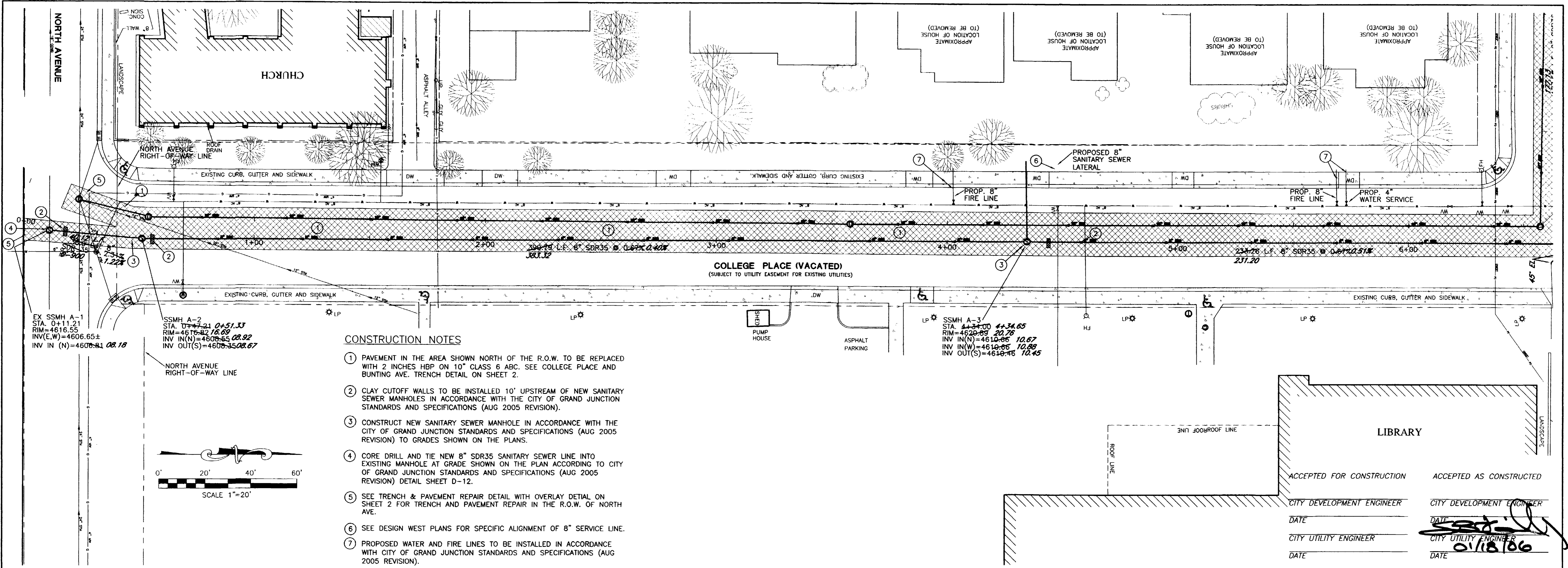
ACCEPTED FOR CONSTRUCTION
CITY UTILITY ENGINEER
DATE

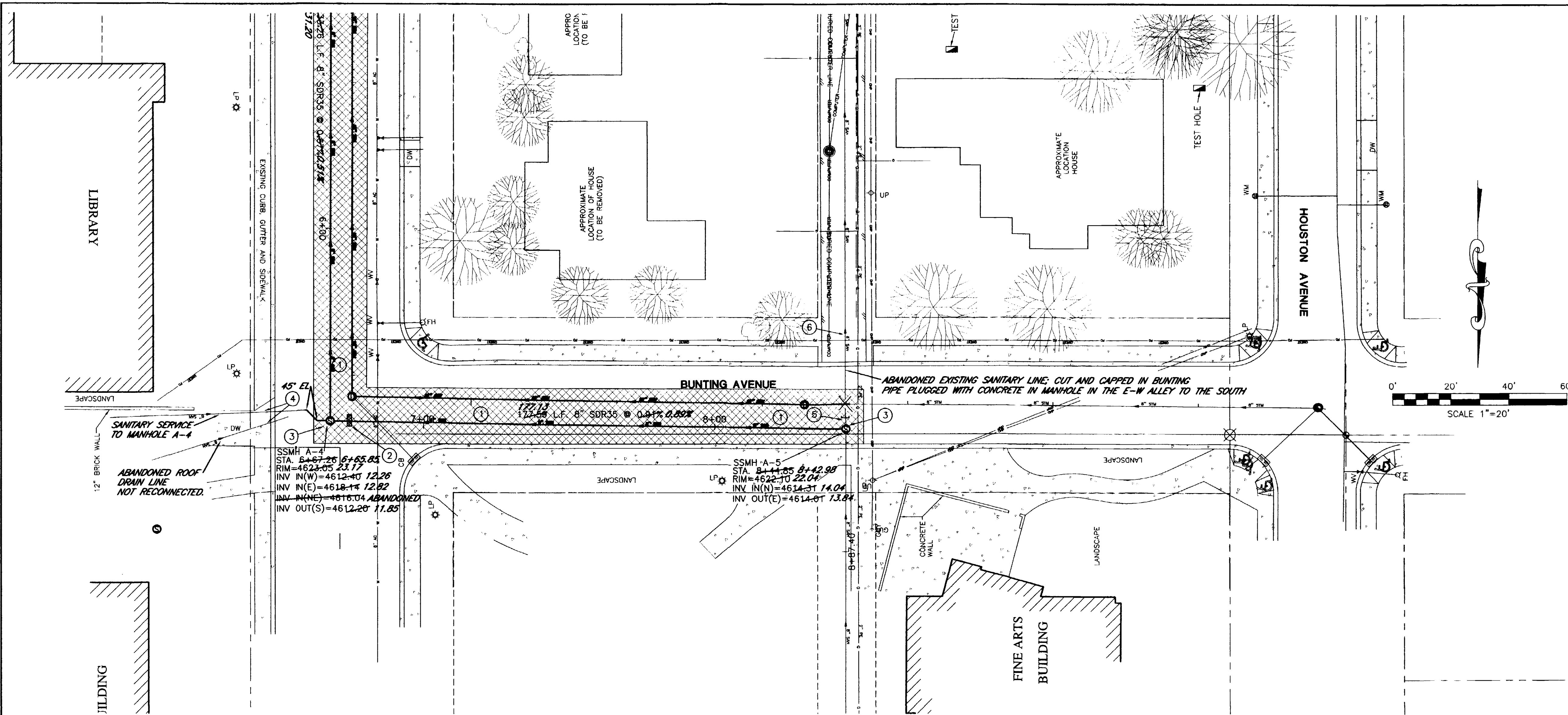
ACCEPTED AS CONSTRUCTED
CITY UTILITY ENGINEER
DATE 01/18/06



ROLLAND ENGINEERING
405 Ridges Blvd
Grand Jct, CO 81503
(970) 243-8300

File Name: C:\2086\2086note.dwg	GENERAL NOTES, DETAILS & CROSS SECTIONS		
Designed TDR	Checked TDR	Proj# 5061	Sheet 2
Drawn JLG	Date 9/29/05	Rc	Of 6





- CONSTRUCTION NOTES**
- PAVEMENT IN THE AREA SHOWN NORTH OF THE R.O.W. TO BE REPLACED WITH 2 INCHES HBP ON 10" CLASS 6 ABC. SEE COLLEGE PLACE AND BUNTING AVE. TRENCH DETAIL ON SHEET 2.
 - CLAY CUTOFF WALLS TO BE INSTALLED 10' UPSTREAM OF NEW SANITARY SEWER MANHOLES IN ACCORDANCE WITH THE CITY OF GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
 - CONSTRUCT NEW SANITARY SEWER MANHOLE IN ACCORDANCE WITH THE CITY OF GRAND JUNCTION STANDARDS AND SPECIFICATIONS TO GRADES SHOWN ON THE PLANS.
 - ALIGNMENT OF SEWER SERVICE LINES IS UNKNOWN, THE CONTRACTOR WILL NEED TO EXPOSE THESE LINES TO DETERMINE THE PROPER FITTINGS NECESSARY TO REDIRECT THE SERVICE LINES TO THE NEW SANITARY SEWER MANHOLE.
 - CONNECT EXISTING SANITARY SEWER LINE TO NEW SANITARY SEWER MANHOLE. REMOVE AND DISPOSE OF EXISTING PIPE SOUTH TO EXISTING MANHOLE. SEE STORM SEWER PLANS FOR MANHOLE TO SOUTH.
 - IF ALL SERVICES NORTH OF THE EAST WEST ALLEY HAVE BEEN TAKEN OUT OF SERVICE THE CONTRACTOR SHALL ABANDON THE EXISTING LINE TO THE NORTH AND REMOVE IT FROM THE MANHOLE IN THE ALLEY AND PLUG THE HOLE IN THE EXISTING MANHOLE IN ACCORDANCE WITH THE CITY OF GRAND JUNCTION STANDARDS AND SPECIFICATIONS (GUC 2005 REVISION) IF THE EXISTING SANITARY SEWER LINE CANNOT BE TAKEN OUT OF SERVICE NORTH OF THE EAST WEST ALLEY TO THE SOUTH, THE CONTRACTOR SHALL CUT THE LINE AT THIS LOCATION AND INSTALL A TEMPORARY CLEANOUT CONSISTING OF A 8" LONG SWEEP 90 DEGREE ELBOW AND 8" RISER PIPE. IF IT IS NECESSARY TO INSTALL THIS TEMPORARY CLEANOUT THE CONTRACTOR SHALL SUBMIT DRAWINGS OF A PROPOSED RING AND COVER FOR THE TEMPORARY CLEANOUT FOR APPROVAL BY THE CITY UTILITY ENGINEER.

ACCEPTED FOR CONSTRUCTION _____

CITY DEVELOPMENT ENGINEER _____

DATE _____

CITY UTILITY ENGINEER _____

DATE _____

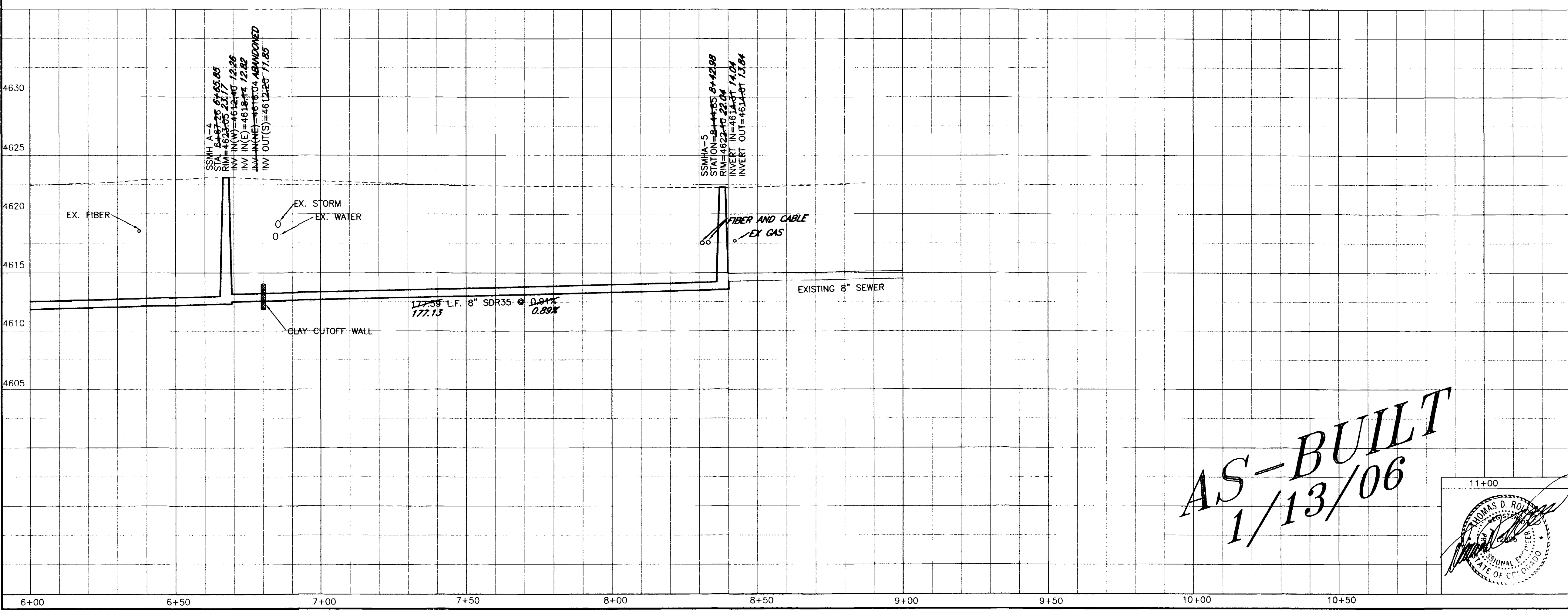
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CITY DEVELOPMENT ENGINEER _____

DATE *1/13/06*

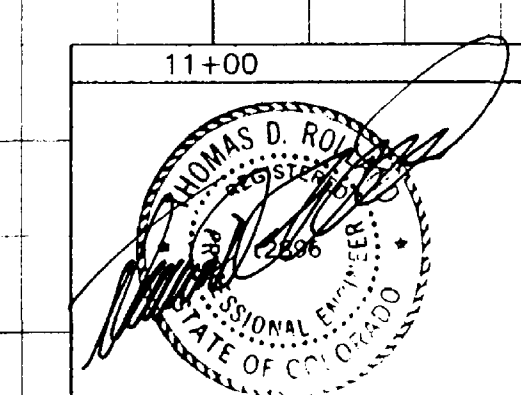
CITY UTILITY ENGINEER *[Signature]*

DATE *01/13/06*



CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
 CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

AS-BUILT
1/13/06



11+50 12+00

ROLLAND ENGINEERING GRAND JUNCTION

ROLLAND ENGINEERING
 405 Ridges Blvd
 Grand Jct, CO 81503
 (970) 243-8300

JLG 12/05 AS-BUILT INFORMATION

File Name: C:\5061\5061BASE.DWG

MESA STATE COLLEGE
 RESIDENCE HALL
 SANITARY SEWER
 PLAN AND PROFILE

Designed TDR Checked JLG Proj# 5061 Sheet 4
 Drawn JLG Date 9/29/05 Rv. 1/13/06 Of 6