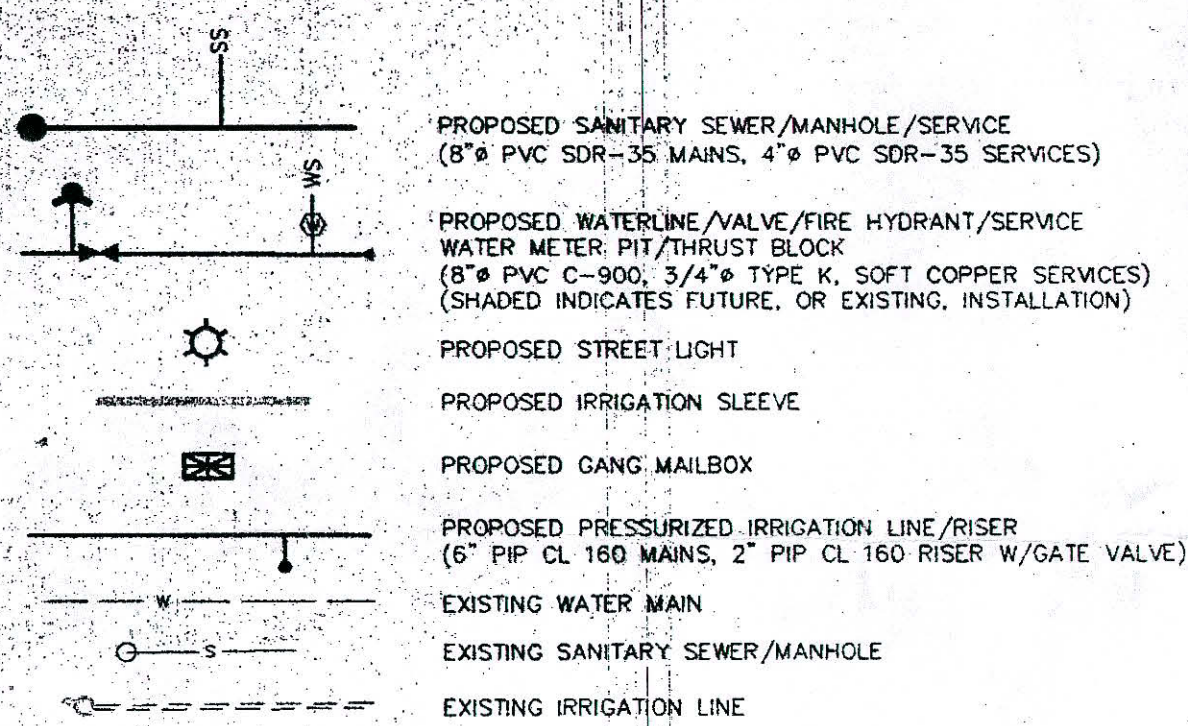


**LEGEND**

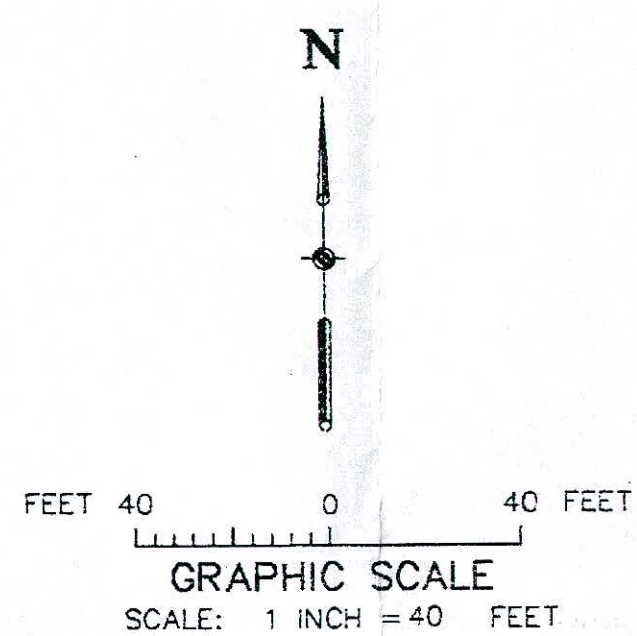


**UTILITY VENDORS**

- SANITARY SEWER: City of Grand Junction
- DOMESTIC WATER: Ute Water Conservancy District
- NATURAL GAS: Public Service Co. of Colorado
- ELECTRIC: Public Service Co. of Colorado
- TELEPHONE: US West Communications
- TELEVISION: TCI Cablevision
- IRRIGATION: Grand Valley Water Users Assoc.
- DRAINAGE: Grand Valley Water Users Assoc.



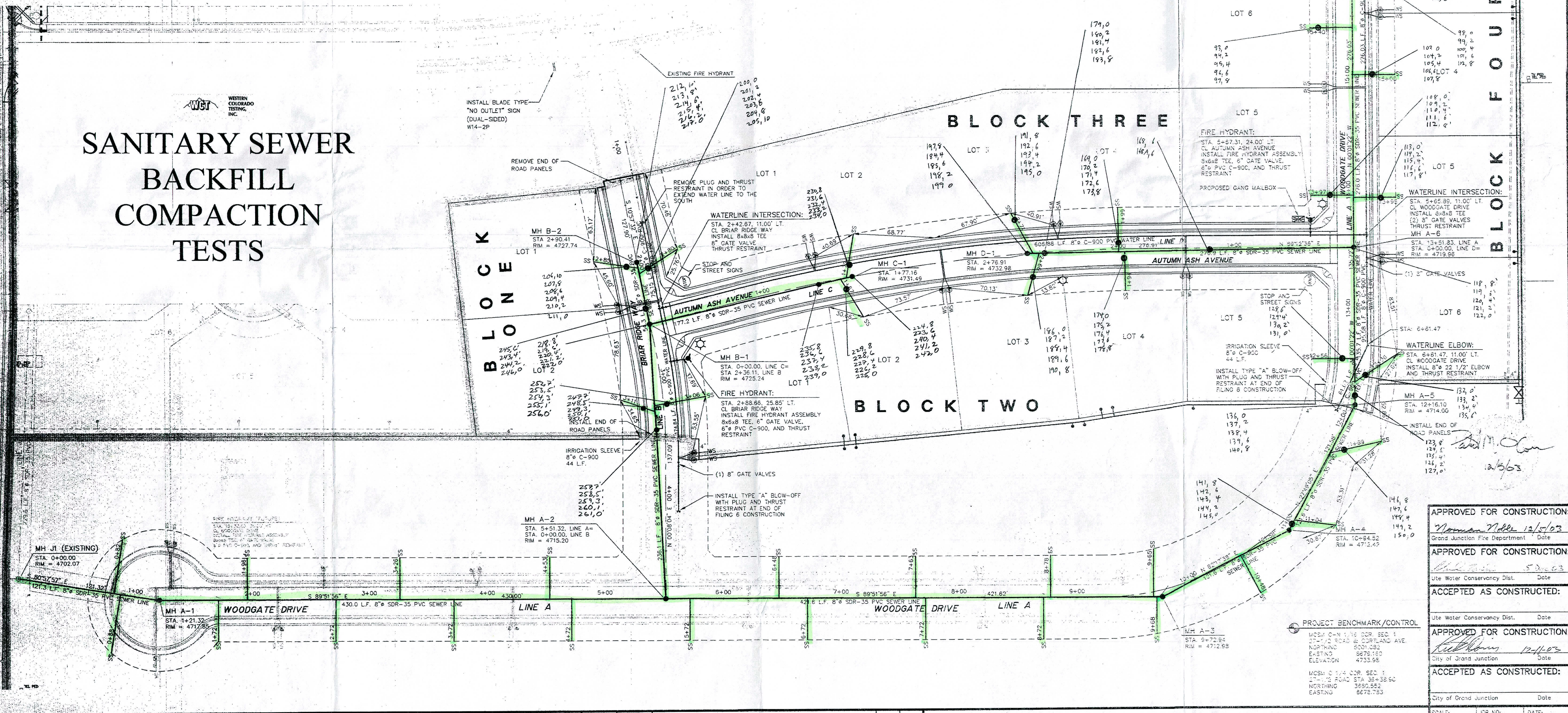
CALL  
1-800-922-1987  
UTILITY NOTIFICATION  
CENTER OF COLORADO



- NOTE:**
- ALL EXTERIOR LIGHTING MUST BE DOWNWARD DIRECTIONAL AND LIGHTING ELEMENTS MUST BE CHOSEN TO REDUCE OR ELIMINATE ANY POSSIBLE GLARE THAT MIGHT AFFECT AIRCRAFT OPERATIONS.
  - CITY TRAFFIC OPERATIONS SUPERVISOR TO BE CONTACTED (970) 244-1573 PRIOR TO ANY SIGNING MATERIAL ORDER OR INSTALLATION.

**NOTE:**  
CITY TRAFFIC OPERATIONS SUPERVISOR TO BE CONTACTED (970/244-1573) PRIOR TO ANY SIGNING MATERIAL ORDER OR INSTALLATION.

**SANITARY SEWER  
BACKFILL  
COMPACTION  
TESTS**



APPROVED FOR CONSTRUCTION:	<i>Norman Miller</i> 12/5/03
Grand Junction Fire Department	Date
APPROVED FOR CONSTRUCTION:	<i>[Signature]</i> 5/20/03
Ute Water Conservancy Dist.	Date
ACCEPTED AS CONSTRUCTED:	<i>[Signature]</i> 12/1/03
Ute Water Conservancy Dist.	Date
APPROVED FOR CONSTRUCTION:	<i>[Signature]</i> 12/1/03
City of Grand Junction	Date
ACCEPTED AS CONSTRUCTED:	<i>[Signature]</i> 12/1/03
City of Grand Junction	Date

DRAWN BY:	S.G.S.
REVIEWED:	FOR
DESIGNED BY:	P.M.O.
CHECKED BY:	P.M.O.

**VISTA ENGINEERING CORP.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81506 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CHKD
1	7-14-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	SGS	PMO
2	9-26-03	REVISED AS PER 2ND ROUND REVIEW COMMENTS	FJB	PMO
3	12-5-03	REVISED SEWER SERVICES AND 3RD ROUND REVIEW COMMENTS	SGS	PMO

O.P. DEVELOPMENT CO., LLC  
GRAND JUNCTION, COLORADO

UTILITY COMPOSITE  
THE KNOLLS, FILING SIX

SCALE: 1" = 40'  
JOB NO: 4003.06-02  
DATE: 4-09-03  
SHEET NO: 5 of 20



# SIDEWALK BASECOURSE TEST LOCATIONS

**WCT**  
WESTERN  
COLORADO  
TESTING,  
INC.

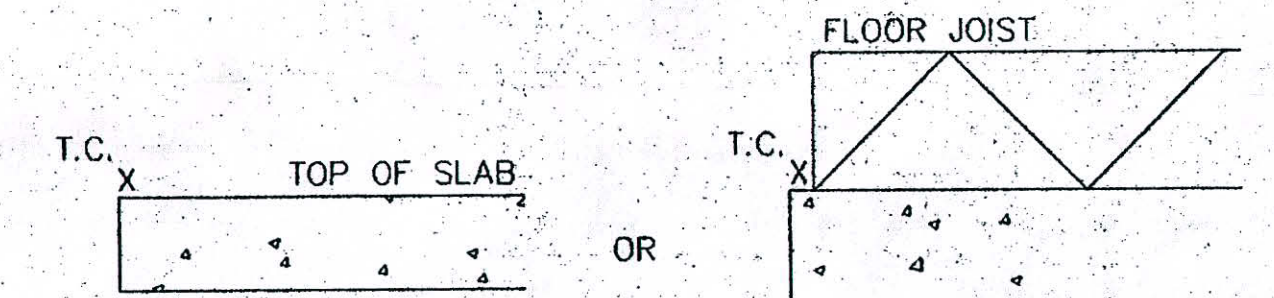
**GENERAL NOTES:**

- CONSTRUCTION STAGING AREAS WILL BE THE UNDEVELOPED LOTS THAT MAKE UP THE LOTS. NO STAGING AREAS WILL BE PERMITTED ON ANY ADJACENT PROPERTIES.
- SITE TOPSOIL IS NOT SUITABLE FOR SUPPORT OF PROPOSED CONSTRUCTION. TOPSOIL SHALL BE STRIPPED FROM ALL FILL AREAS AND STRUCTURAL PAD AREAS AND STOCKPILED FOR USE ON FINAL OVERLOT GRADING.

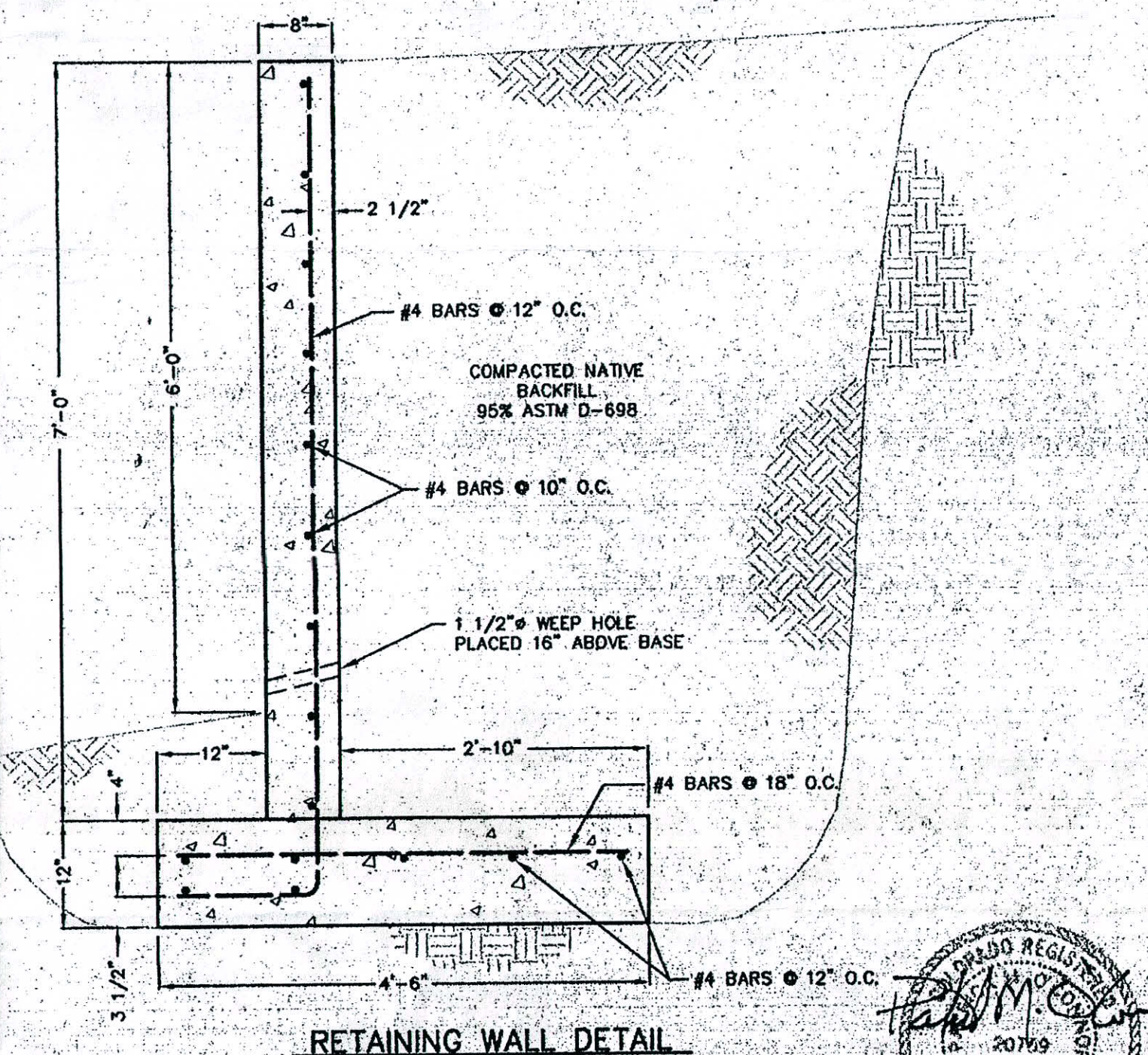
**KNOLLS SUBDIVISION  
TOP OF CONCRETE ELEVATION TABULATION  
9/26/03**

LOT	BLOCK	ADDRESS	(MINIMUM) T.C. ELEV.	(MAXIMUM) T.C. ELEV.
1	1	BRIAR RIDGE WAY	4728.0	4731.0
2	1	BRIAR RIDGE WAY	4722.0	4727.0
1	2	AUTUMN ASH AVENUE	4721.0	4732.5
2	2	AUTUMN ASH AVENUE	4731.5	4735.5
3	2	AUTUMN ASH AVENUE	4733.5	4736.0
4	2	AUTUMN ASH AVENUE	4726.5	4734.0
5	2	AUTUMN ASH AVENUE	4715.0	4727.5
6	2	WOODGATE DRIVE	4715.0	4727.5
1	3	AUTUMN ASH AVENUE	4728.0	4732.0
1	3	BRIAR RIDGE WAY	4728.0	4732.0
2	3	AUTUMN ASH AVENUE	4732.0	4735.0
3	3	AUTUMN ASH AVENUE	4733.5	4736.0
3	3	AUTUMN ASH AVENUE	4727.0	4734.0
5	3	AUTUMN ASH AVENUE	4722.0	4729.0
5	3	WOODGATE DRIVE	4722.0	4729.0
6	3	WOODGATE DRIVE	4729.0	4736.0
6	3	FAIRWOOD PLACE	4729.0	4736.0
1	4	FAIRWOOD PLACE	4734.0	4736.0
2	4	FAIRWOOD PLACE	4733.5	4735.5
3	4	WOODGATE DRIVE	4731.5	4734.5
4	4	WOODGATE DRIVE	4726.5	4732.5
5	4	WOODGATE DRIVE	4720.5	4727.5
6	4	WOODGATE DRIVE	4716.0	4720.5

**NOTE:**  
MINIMUM T.C. ELEVATIONS MUST BE 12" (MINIMUM) ABOVE THE BACK-OF-WALK ELEVATION PERPENDICULAR TO THE FOUNDATION (TO CREATE POSITIVE DRAINAGE TO THE STREET AND AWAY FROM FOUNDATION). MAXIMUM T.C. ELEVATIONS MUST NOT CREATE DRIVEWAY SLOPES IN EXCESS OF ALLOWABLE MAXIMUMS OR SIDE-SLOPES AWAY FROM FOUNDATIONS IN EXCESS OF 3:1 (HORIZ. VERT). THE WIDE RANGE OF ELEVATIONS IS NECESSARY, AT THIS TIME, DUE TO UNCERTAINTY IN FINAL BUILDING LOCATIONS.



T.C. = TOP OF CONCRETE  
NOT TO SCALE



**PROJECT BENCHMARK/CONTROL:**  
MCSM C-N 1/16 COR. SEC. 1  
27-1/2 ROAD & CORTLAND AVE.  
NORTHING 5001.082  
EASTING 8579.160  
ELEVATION 4733.98  
MCSM C 1/4 COR. SEC. 1  
27-1/2 ROAD STA. 36+38.90  
NORTHING 3680.552  
EASTING 8678.783

**APPROVED FOR CONSTRUCTION:**  
*Todd M. Cook*  
CITY DEVELOPMENT ENGINEER DATE 12/11/03  
**ACCEPTED AS CONSTRUCTED:**  
CITY DEVELOPMENT ENGINEER DATE

**LEGEND**

- 4710 — CONTOUR (EXISTING)
- 4710 — CONTOUR (PROPOSED)
- — FILING BOUNDARY
- ← DRAINAGE DIRECTION

**NOTE:** SITE RUNOFF TO BE ROUTED TO DETENTION POND IN SOUTHEAST CORNER OF SITE (TRACT A FUTURE FILING 7) FOR TEMPORARY FUMING TO 27-1/2 ROAD PER CITY OF GRAND JUNCTION RETENTION REQUIREMENTS.

EXISTING DRAIN "D" PIPED

REVISION	DATE	DESCRIPTION	BY	CHK'D
1	7-14-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	SGS	PMO
2	9-26-03	REVISED T.C. ELEVATIONS AS PER 2ND ROUND REVIEW COMMENTS	FJB	PMO
3	12-5-03	ADDED FILING 7 CONTOURS AND 3RD ROUND REVIEW COMMENTS	SGS	PMO

**VISTA ENGINEERING CORP.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO. 81506 • (970) 249-2242

GRADING PLAN  
THE KNOLLS SUBDIVISION, FILING 6



**LEGEND**

- PROPOSED SANITARY SEWER/MANHOLE/SERVICE (8" PVC SDR-35 MAINS, 4" PVC SDR-35 SERVICES)
- PROPOSED WATERLINE/VALVE/FIRE HYDRANT/SERVICE WATER METER PIT/THRUST BLOCK (8" PVC C-900, 3/4" TYPE K, SOFT COPPER SERVICES) (SHADED INDICATES FUTURE, OR EXISTING, INSTALLATION)
- PROPOSED STREET LIGHT
- PROPOSED IRRIGATION SLEEVE
- PROPOSED GANG MAILBOX
- PROPOSED PRESSURIZED IRRIGATION LINE/RISER (6" PIP CL 160 MAINS, 2" PIP CL 160 RISER W/GATE VALVE)
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER/MANHOLE
- EXISTING IRRIGATION LINE

**UTILITY VENDORS**

- SANITARY SEWER: City of Grand Junction
- DOMESTIC WATER: Ute Water Conservancy District
- NATURAL GAS: Public Service Co. of Colorado
- ELECTRIC: Public Service Co. of Colorado
- TELEPHONE: US West Communications
- TELEVISION: TCI Cablevision
- IRRIGATION: Grand Valley Water Users Assoc.
- DRAINAGE: Grand Valley Water Users Assoc.



CALL 1-800-922-1987  
UTILITY NOTIFICATION  
CENTER OF COLORADO

FEET 40 0 40 FEET

GRAPHIC SCALE  
SCALE: 1 INCH = 40 FEET

**NOTE:**

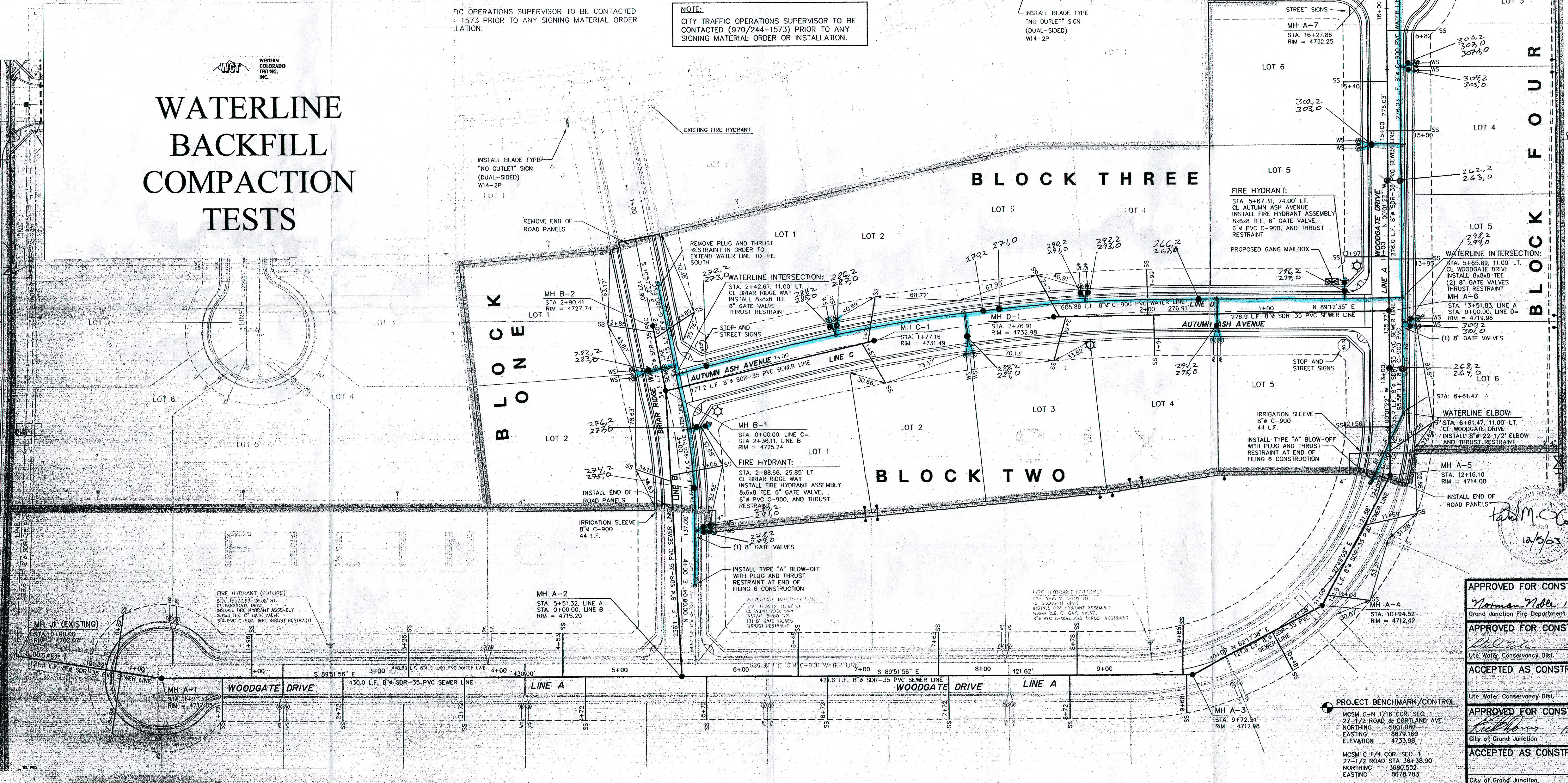
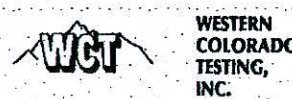
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FLIC OPERATIONS SUPERVISOR TO BE CONTACTED 1-1573 PRIOR TO ANY SIGNING MATERIAL ORDER LATION.

**NOTE:**

CITY TRAFFIC OPERATIONS SUPERVISOR TO BE CONTACTED (970/244-1573) PRIOR TO ANY SIGNING MATERIAL ORDER OR INSTALLATION.

**WATERLINE  
BACKFILL  
COMPACTION  
TESTS**



APPROVED FOR CONSTRUCTION:

*Norman Noble* 12/5/03  
Grand Junction Fire Department Date

APPROVED FOR CONSTRUCTION:

*Phil Miller* 5 Dec 03  
Ute Water Conservancy Dist. Date

ACCEPTED AS CONSTRUCTED:

Ute Water Conservancy Dist. Date

APPROVED FOR CONSTRUCTION:

*Richard* 12/5/03  
City of Grand Junction Date

ACCEPTED AS CONSTRUCTED:

City of Grand Junction Date

**PROJECT BENCHMARK/CONTROL**

- MCSM C-N 1/16 COR. SEC. 1  
27-1/2 ROAD & CORTLAND AVE  
NORTHING 5001.082  
EASTING 8678.160  
ELEVATION 4733.98
- MCSM C 1/4 COR. SEC. 1  
27-1/2 ROAD STA 364+38.90  
NORTHING 3680.552  
EASTING 8678.783

DRAWN BY: S.G.S.	REVIEWED DATE:	FOR
DESIGNED BY: P.M.O.	REVIEWED DATE:	FOR
CHECKED BY: P.M.O.	REVIEWED DATE:	FOR VISTA ENGINEERING CORP.

**VISTA ENGINEERING CORP.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81606 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CH'D
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O.P. DEVELOPMENT CO., LLC

GRAND JUNCTION, COLORADO

UTILITY COMPOSITE  
THE KNOLLS, FILING SIX

SCALE: 1" = 40'  
JOB NO: 4003.06-02  
DATE: 4-09-03

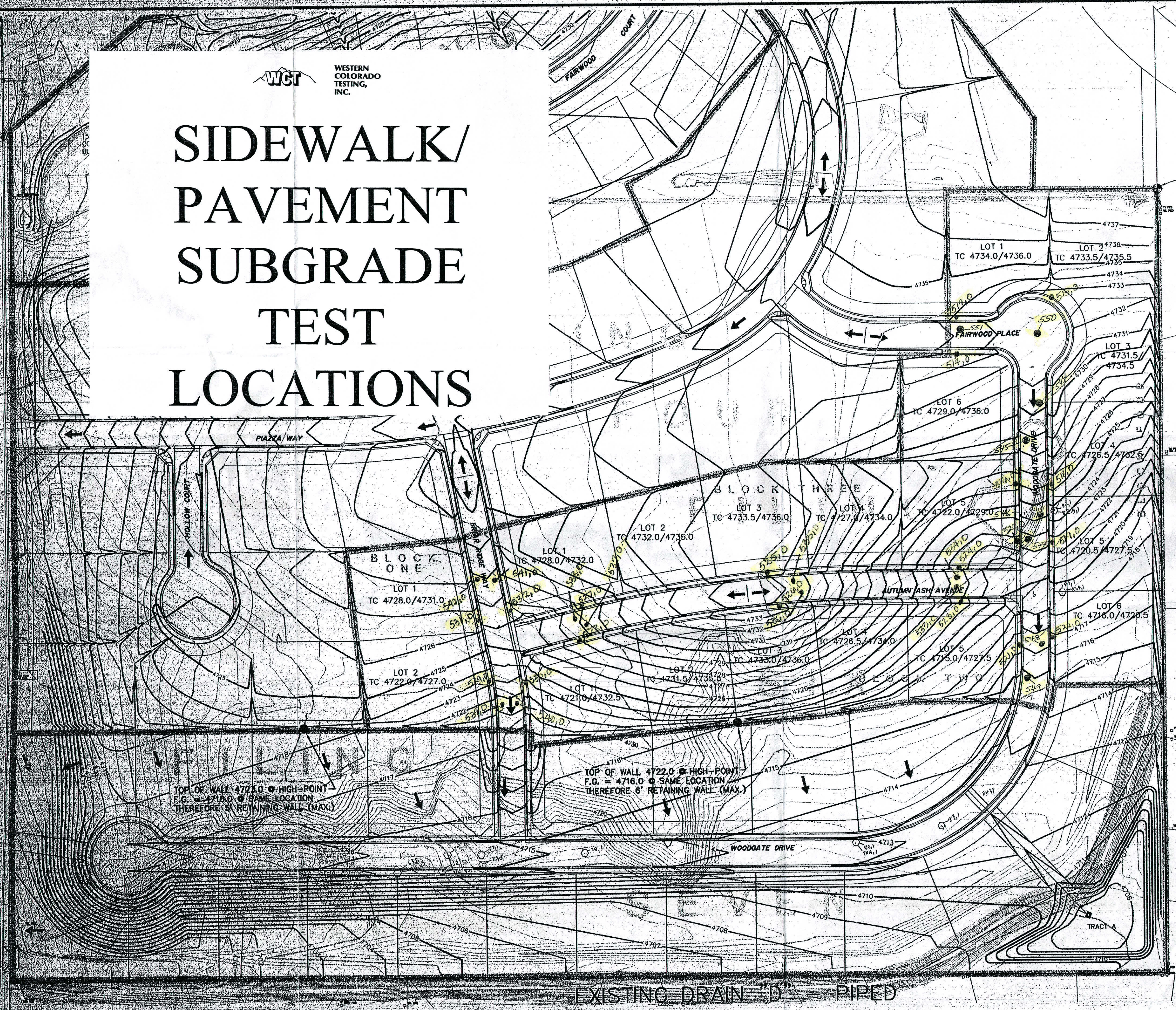
SHEET NO: 5 of 20



# SIDEWALK/ PAVEMENT SUBGRADE TEST LOCATIONS

WCF WESTERN COLORADO TESTING, INC.

SEE SHEET 7 OF 17 FOR STORM DRAIN DETAILS.

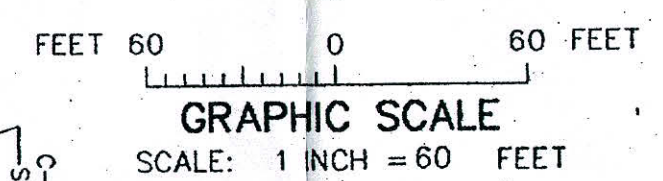


TOP OF WALL 4725.0 @ HIGH-POINT  
F.G. = 4716.0 @ SAME LOCATION  
THEREFORE 9' RETAINING WALL (MAX.)

TOP OF WALL 4722.0 @ HIGH-POINT  
F.G. = 4716.0 @ SAME LOCATION  
THEREFORE 6' RETAINING WALL (MAX.)

EXISTING DRAIN "D" PIPED

NOTE: SITE RUNOFF TO BE ROUTED TO DETENTION POND IN SOUTHEAST CORNER OF SITE (TRACT A FUTURE FILING 7) FOR TEMPORARY BUMPING TO 27-1/2 ROAD. PER CITY OF GRAND JUNCTION RETENTION REQUIREMENTS.

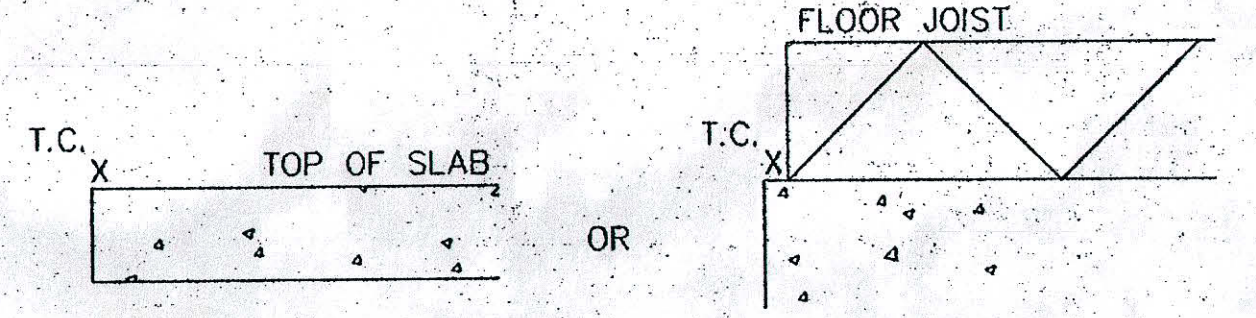


- GENERAL NOTES:**
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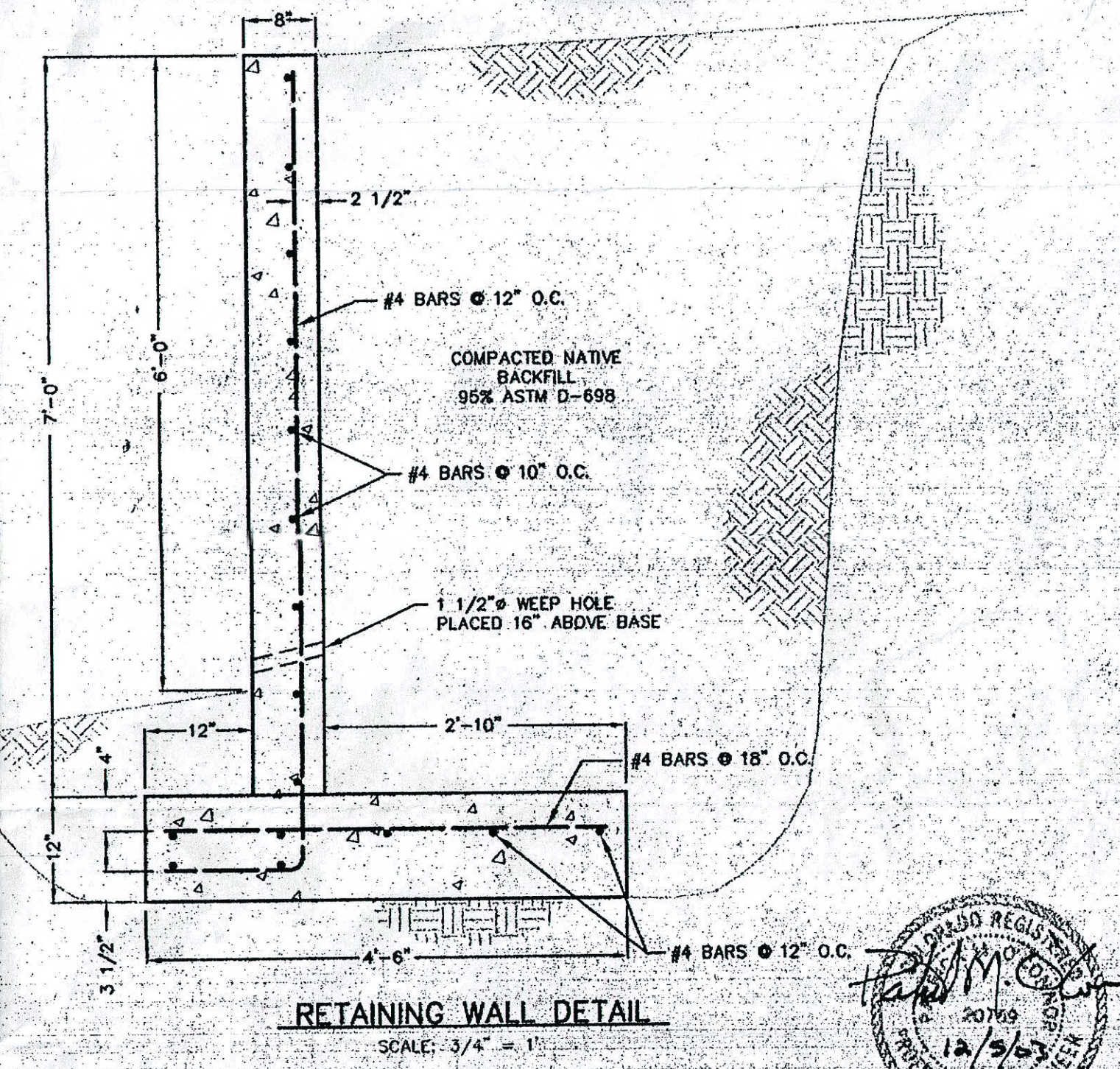
KNOLLS SUBDIVISION  
TOP OF CONCRETE ELEVATION TABULATION  
9/26/03

LOT	BLOCK	ADDRESS	(MINIMUM) T.C. ELEV.	(MAXIMUM) T.C. ELEV.
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NOTE: MINIMUM T.C. ELEVATIONS MUST BE 12" (MINIMUM) ABOVE THE BACK-OF-WALK ELEVATION PERPENDICULAR TO THE FOUNDATION (TO CREATE POSITIVE DRAINAGE TO THE STREET AND AWAY FROM FOUNDATION). MAXIMUM T.C. ELEVATIONS MUST NOT CREATE DRIVEWAY SLOPES IN EXCESS OF ALLOWABLE MAXIMUMS OR SIDE-SLOPES AWAY FROM FOUNDATIONS IN EXCESS OF 3:1 (HORIZ:VERT). THE WIDE RANGE OF ELEVATIONS IS NECESSARY, AT THIS TIME, DUE TO UNCERTAINTY IN FINAL BUILDING LOCATIONS.



T.C. = TOP OF CONCRETE  
NOT TO SCALE



RETAINING WALL DETAIL  
SCALE: 3/4" = 1'

**LEGEND**

- CONTOUR (EXISTING)
- CONTOUR (PROPOSED)
- FILING BOUNDARY
- DRAINAGE DIRECTION

**PROJECT BENCHMARK/CONTROL**

- MCSM C-N 1/16 COR. SEC. 1 27-1/2 ROAD & CORTLAND AVE. NORTHING 5001.082 EASTING 8679.160 ELEVATION 4733.98
- MCSM C 1/4 COR. SEC. 1 27-1/2 ROAD STA 36+38.90 NORTHING 3680.522 EASTING 8678.783

**APPROVED FOR CONSTRUCTION:**

*[Signature]* 12/11/03  
CITY DEVELOPMENT ENGINEER DATE

**ACCEPTED AS CONSTRUCTED:**

CITY DEVELOPMENT ENGINEER DATE

**VISTA ENGINEERING CORP.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81506 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CHKD
1	7-14-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	SGS	PMO
2	9-26-03	REVISED T.C. ELEVATIONS AS PER 2ND ROUND REVIEW COMMENTS	FJB	PMO
3	12-5-03	ADDED FILING 7 CONTOURS AND 3RD ROUND REVIEW COMMENTS	SGS	PMO

O.P. DEVELOPMENT CO., LLC

GRAND JUNCTION, COLORADO SCALE: 1" = 60' JOB NO: 4003.06-02 DATE: 4-09-03

GRADING PLAN  
THE KNOLLS SUBDIVISION, FILING 6



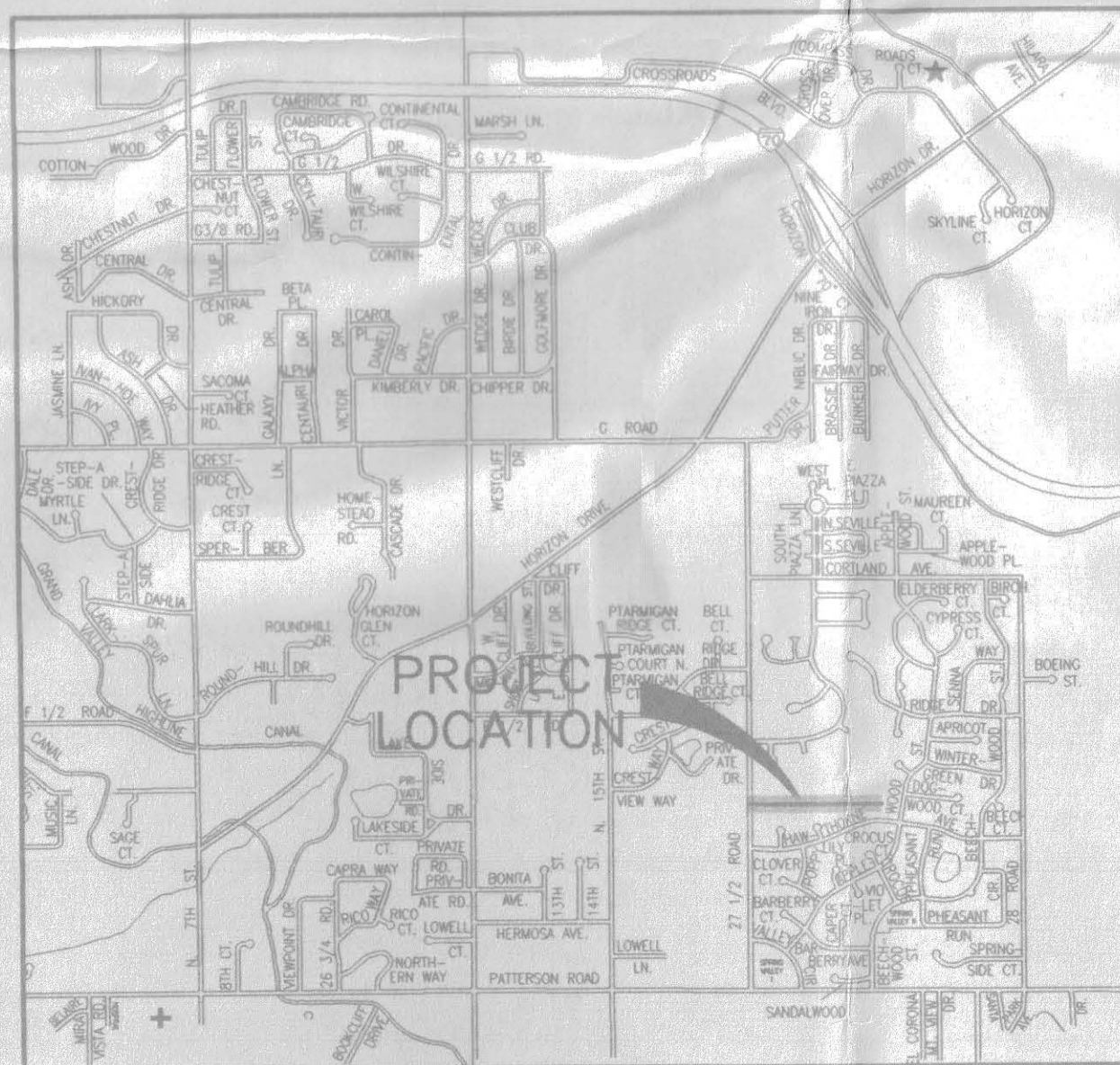
# GRAND VALLEY WATER USERS ASSOCIATION GRAND JUNCTION, COLORADO

PLANS FOR  
CONSTRUCTION  
OF

## DRAIN D IMPROVEMENTS EAST OF 27 1/2 ROAD

APRIL 29, 2003

1ST REVISION JUNE 04, 2003



VICINITY MAP

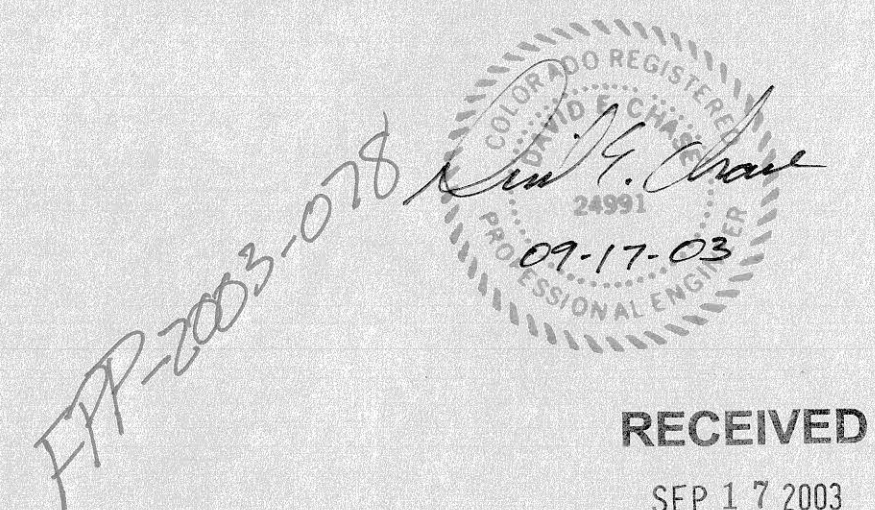
NO.	TITLE
1.	COVER SHEET
2.	PLAN AND PROFILE - STA. 0+00.00 TO STA. 4+60.00
3.	PLAN AND PROFILE - STA. 4+20.00 TO STA. 9+60.00
4.	PLAN AND PROFILE - STA. 9+20.00 TO STA. 14+28.76
5.	STANDARD DRAIN DETAILS

### VISTA ENGINEERING CORP.

CONSULTING ENGINEERS AND LAND SURVEYORS

2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81606 • (970) 243-2242

JOB NO. 4003.00-06



RECEIVED

SEP 17 2003

COMMUNITY DEVELOPMENT  
DEPT.

APPROVED FOR CONSTRUCTION:

ACCEPTED AS CONSTRUCTED:

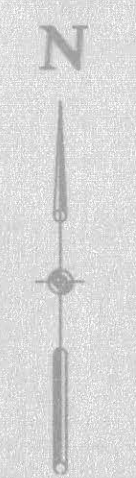
G.V.W.U.A.

DATE

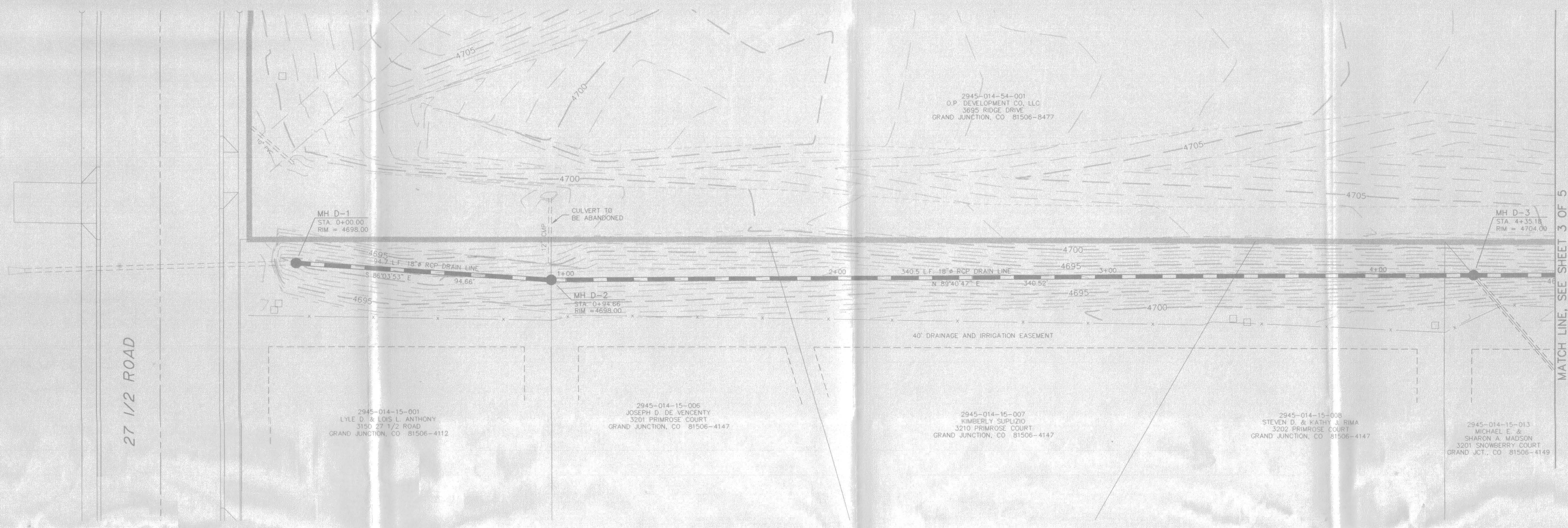
G.V.W.U.A.

DATE

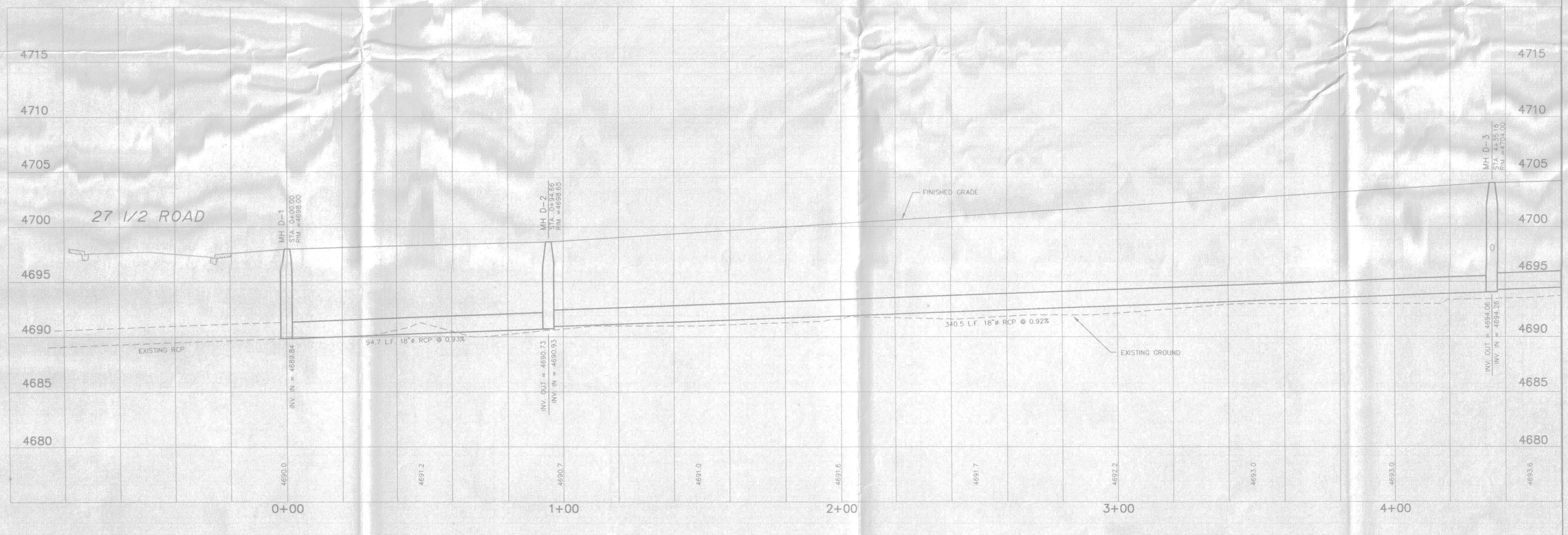




FEET 20 0 20 FEET  
 GRAPHIC SCALE  
 SCALE: 1 INCH = 20 FEET



MATCH LINE, SEE SHEET 3 OF 5



MATCH LINE, SEE SHEET 3 OF 5



08 078

DRAWN BY: F.J.B.  
 CHECKED BY: D.E.C.

REVIEWED: \_\_\_\_\_ FOR \_\_\_\_\_  
 DATE: \_\_\_\_\_

REVIEWED: \_\_\_\_\_ FOR VISTA ENGINEERING CORP.  
 DATE: \_\_\_\_\_

**VISTA ENGINEERING CORP.**  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81506 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CH'D
1	6-05-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	FJB	DEC

GRAND VALLEY WATER USERS ASSOC. GRAND JUNCTION, CO

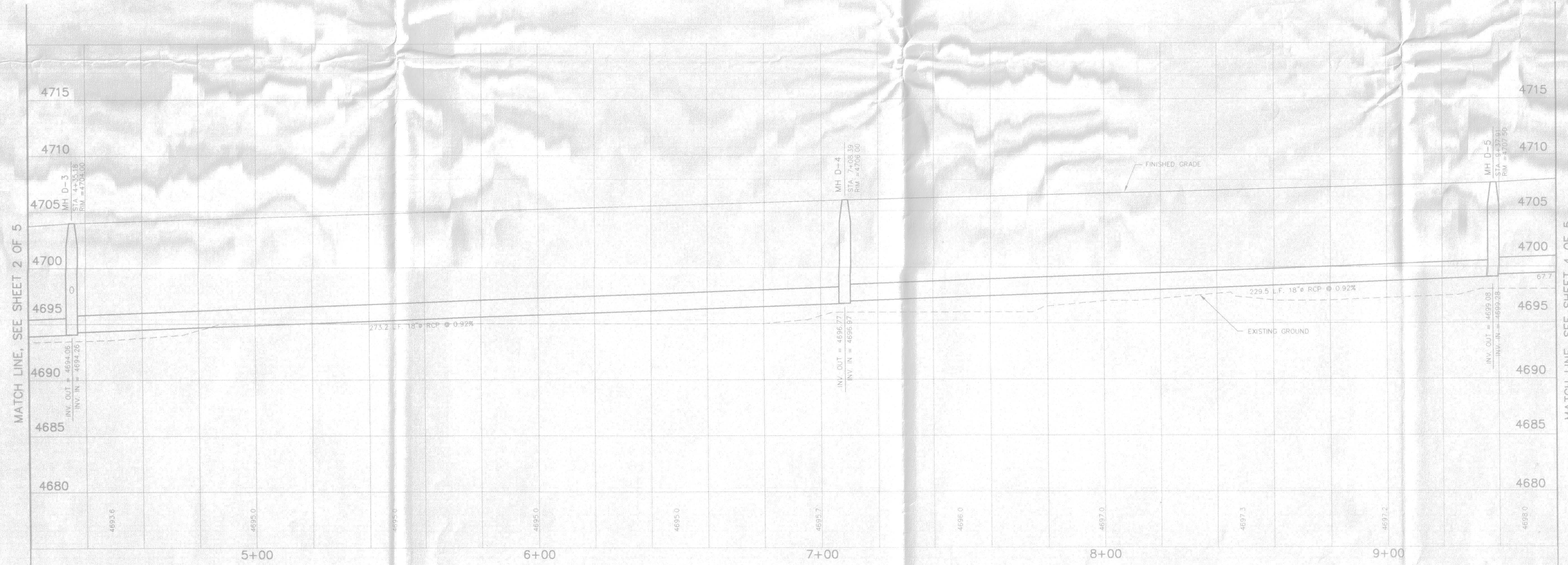
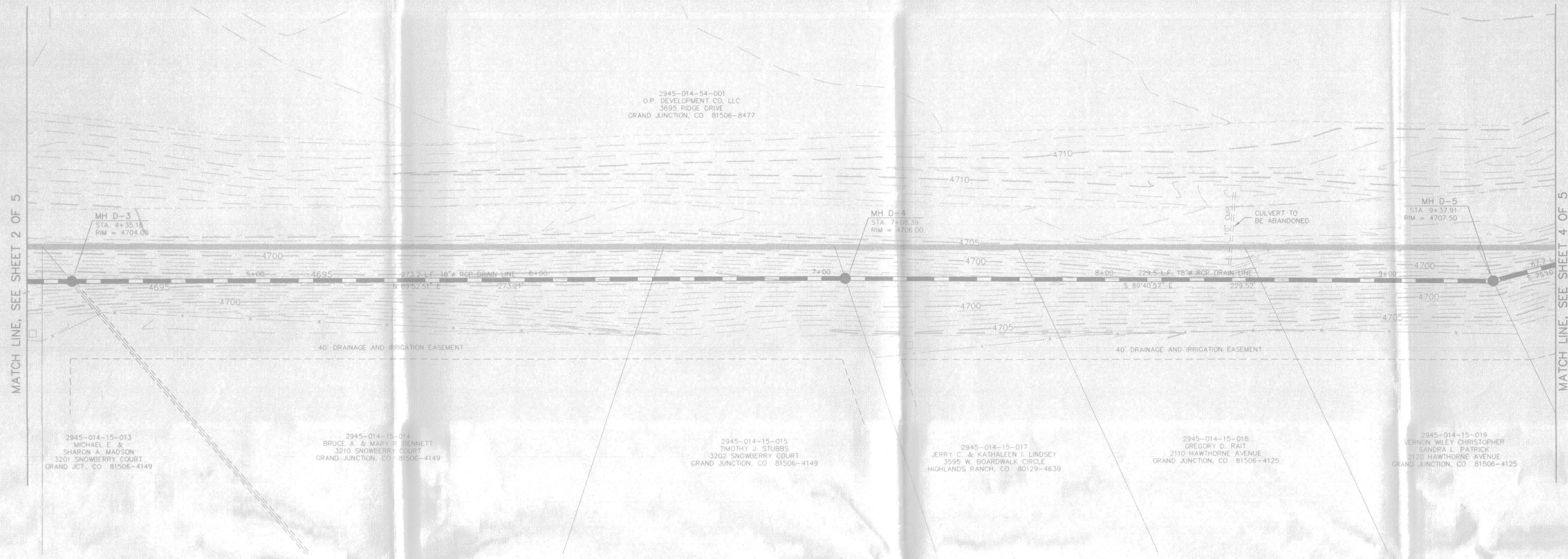
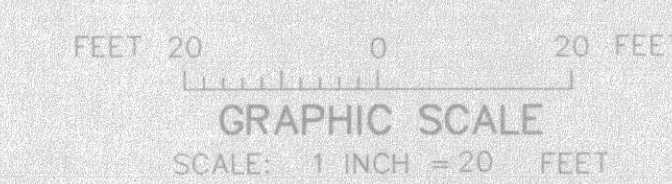
**DRAIN D IMPROVEMENTS**  
 PLAN AND PROFILE - STA. 0+00.00 TO STA. 4+60.00

SCALE: Horiz: 1" = 20'  
 Vert: 1" = 5'

DATE: 04-29-03

Project No: 4003.00-06  
 SHEET NO: 2 of 5



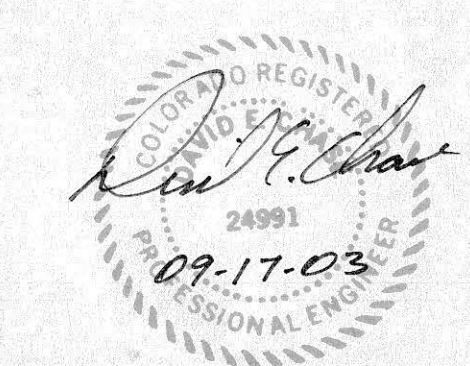


MATCH LINE, SEE SHEET 2 OF 5

MATCH LINE, SEE SHEET 4 OF 5

MATCH LINE, SEE SHEET 2 OF 5

MATCH LINE, SEE SHEET 4 OF 5



03-018

DRAWN BY: F.J.B.  
 REVIEWED: \_\_\_\_\_ FOR \_\_\_\_\_  
 DATE: \_\_\_\_\_

CHECKED BY: D.E.C.  
 REVIEWED: \_\_\_\_\_ FOR VISTA ENGINEERING CORP.  
 DATE: \_\_\_\_\_

**VISTA ENGINEERING CORP.**  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81506 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CHKD
1	6-05-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	F.J.B.	DEC

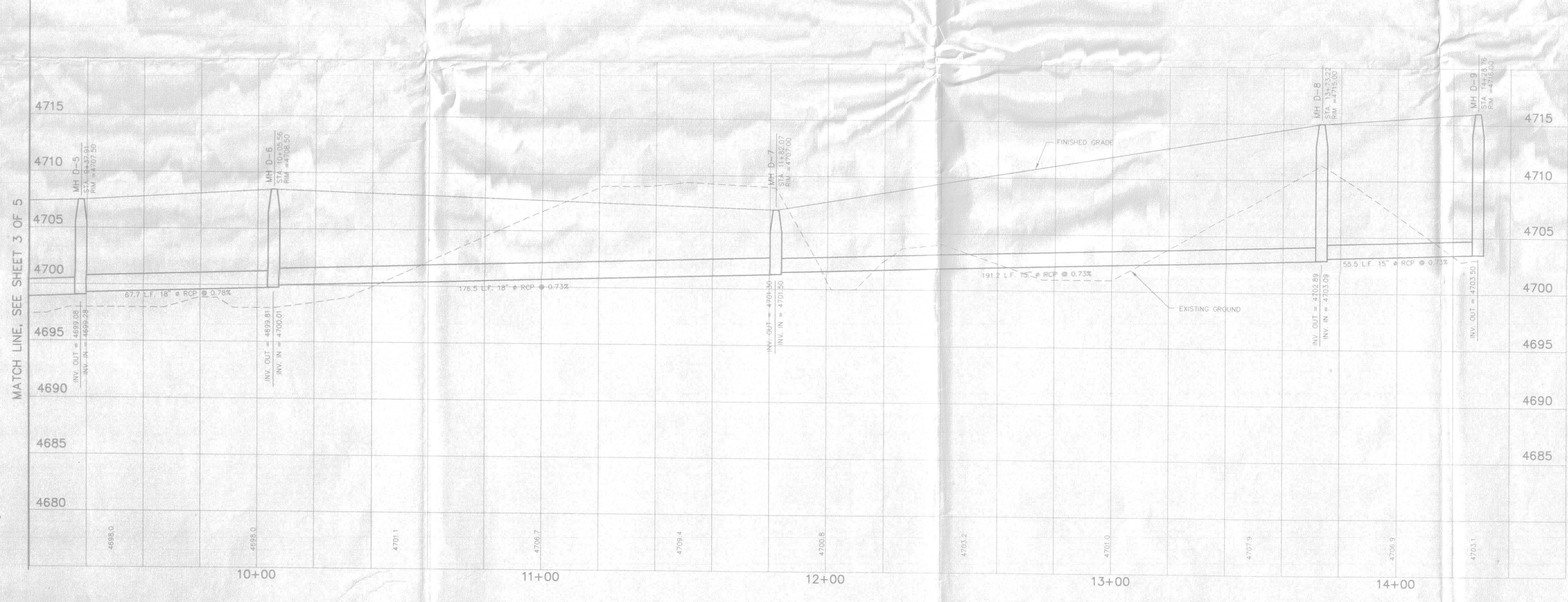
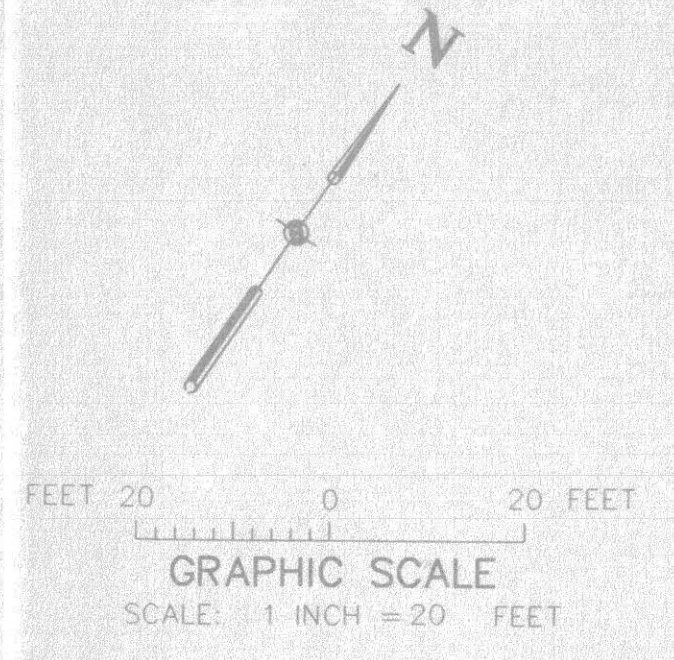
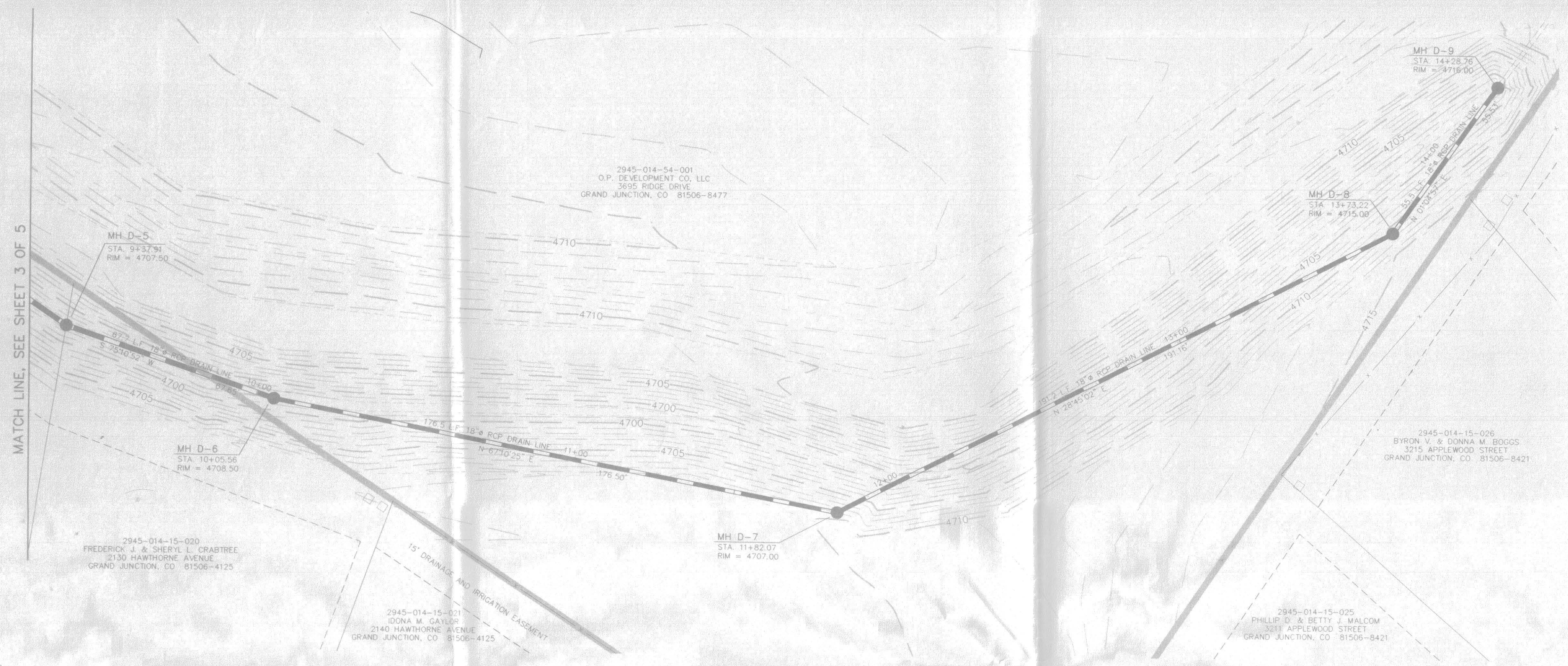
GRAND VALLEY WATER USERS ASSOC. GRAND JUNCTION, CO

**DRAIN D IMPROVEMENTS**  
 PLAN AND PROFILE - STA. 4+20.00 TO STA. 9+60.00

SCALE: Horiz: 1" = 20'; Vert: 1" = 5'

DATE: 04-29-03 SHEET NO: 3 of 5





103-078

DRAWN BY: F.J.B.	REVIEWED DATE: _____ FOR _____
CHECKED BY: D.E.C.	REVIEWED DATE: _____ FOR VISTA ENGINEERING CORP.

**VISTA ENGINEERING CORP.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81508 • (970) 243-2242

REVISION	DATE	DESCRIPTION	BY	CHKD
1	6-05-03	REVISED AS PER 1ST ROUND REVIEW COMMENTS	FJB	DEC

GRAND VALLEY WATER USERS ASSOC.  
GRAND JUNCTION, CO

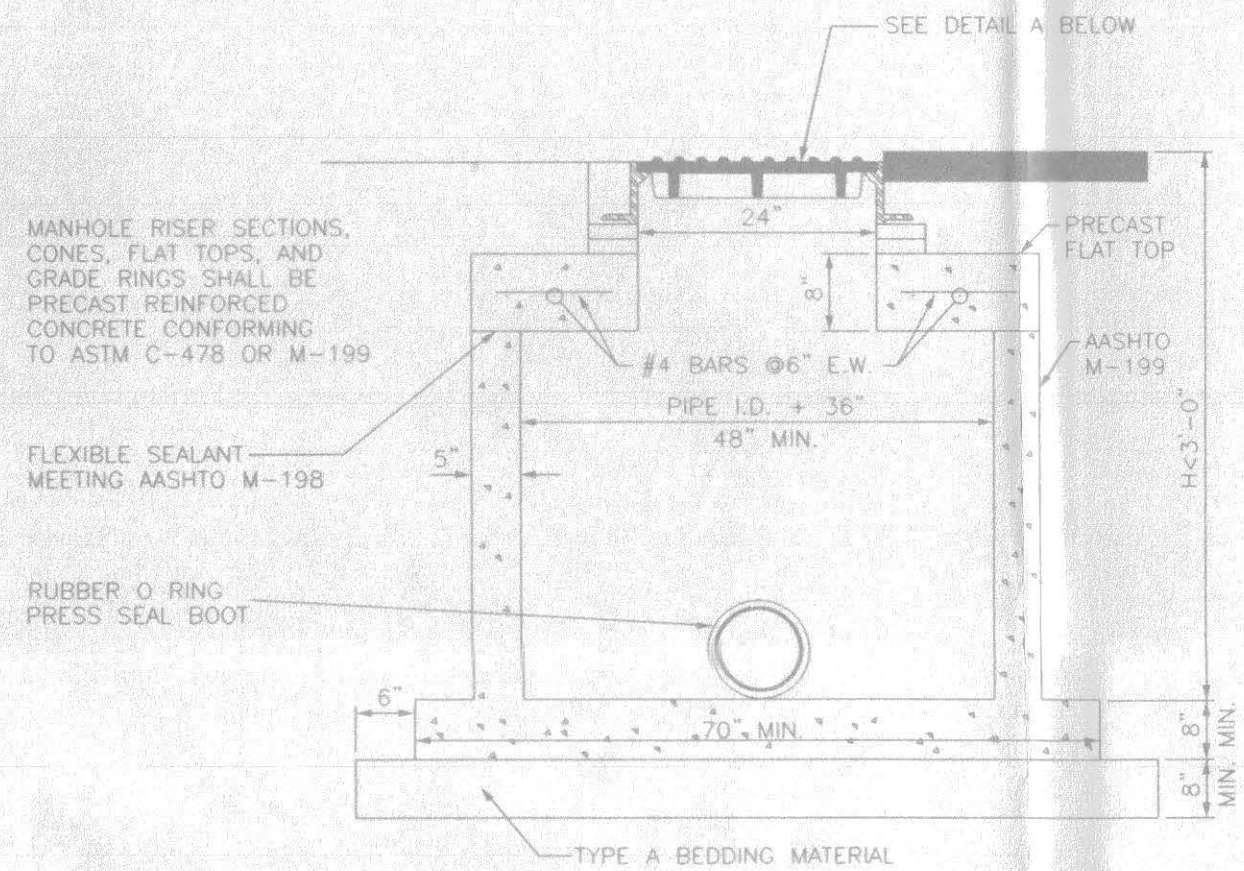
**DRAIN D IMPROVEMENTS**  
PLAN AND PROFILE - STA. 9+20.00 TO 14+28.76

SCALE: Horiz: 1" = 20' Vert: 1" = 5'	Project No: 4003.00-06
DATE: 04-29-03	SHEET NO: 4 of 5

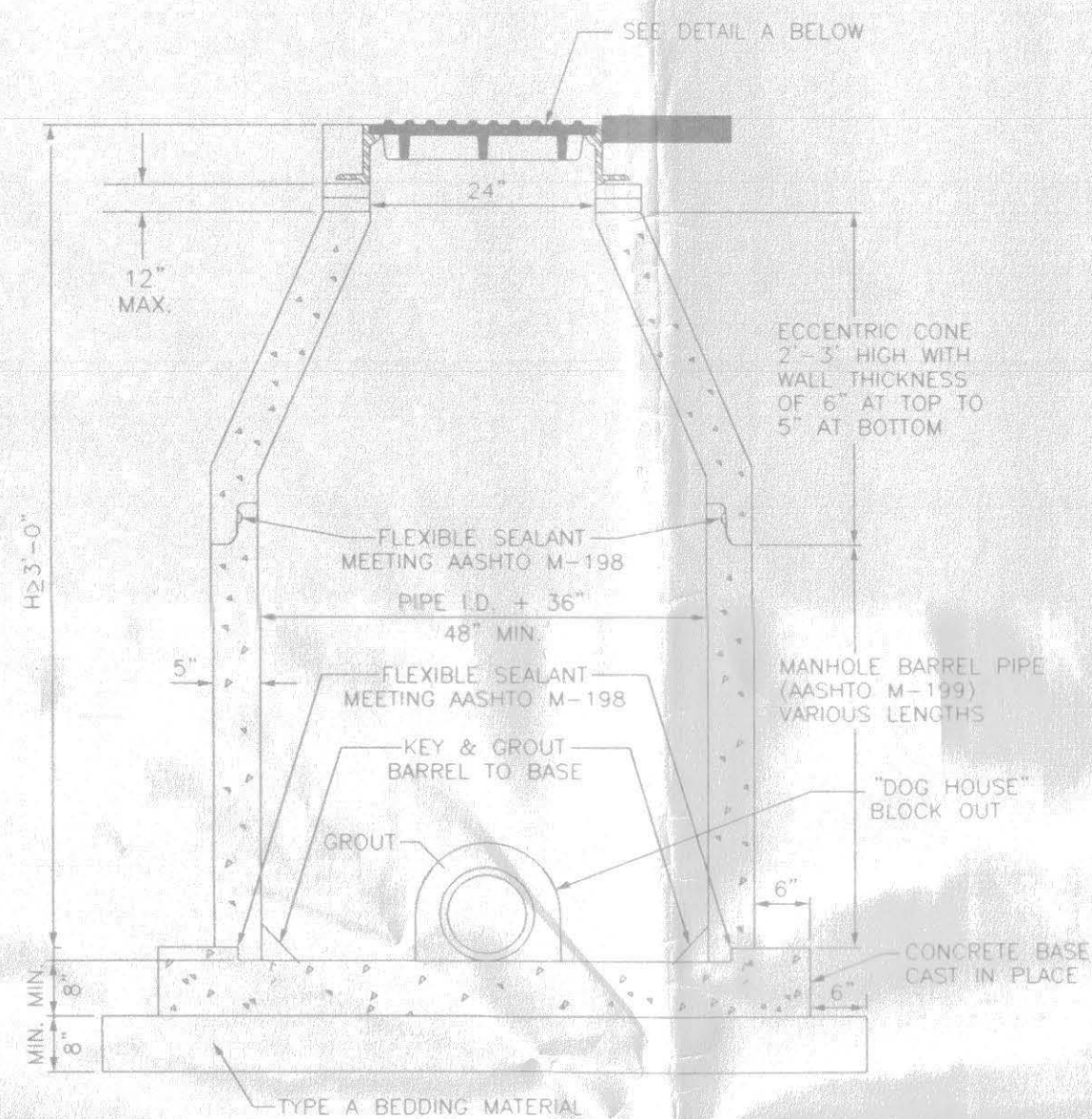


**GENERAL NOTES:**

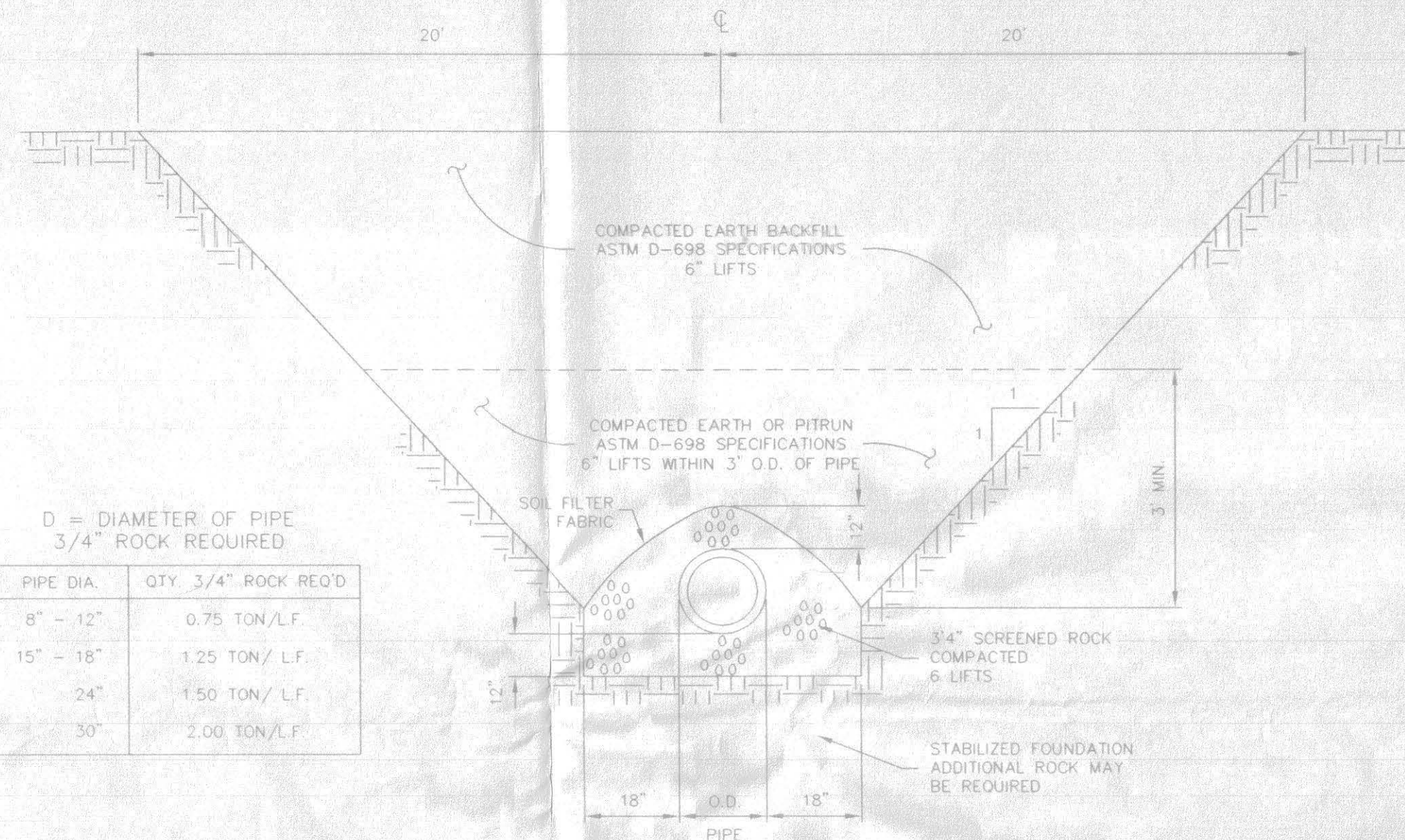
1. BACKFILL AROUND MANHOLES, INLET BOXES, AND OTHER STRUCTURES SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% AASHTO T-99.
2. ALL PORTLAND CEMENT CONCRETE SHALL BE COLORADO DIVISION OF HIGHWAYS CLASS "B" (SECTION 601.02).
3. ANY EXISTING PAVEMENT NOT DESIGNATED FOR REMOVAL WHICH IS DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN-KIND BY CONTRACTOR.
4. ALL CONCRETE WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED BY A LICENSED CURB, GUTTER AND SIDEWALK CONTRACTOR.
5. SEE PLAN SHEETS FOR ALL PIPE SIZES, GRADES AND ELEVATIONS.
6. ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS AND D.V.W.U.A. SPECIFICATIONS.
7. MANHOLE RING AND COVER CAN BE SET TO FINISH GRADE USING NON-SHRINK GROUT TO ADJUST RIM ELEVATION. GROUT SHALL NOT EXCEED 0.10 FT. THICKNESS. GROUT SHALL BE PLACED ONLY UNDER THE CAST IRON RING. NO GROUT SHALL BE PLACED BETWEEN CONCRETE GRADE RINGS. STEEL PAVING RINGS ARE NOT ALLOWED FOR GRADE ADJUSTMENT UNLESS OTHERWISE APPROVED BY THE ENGINEER.



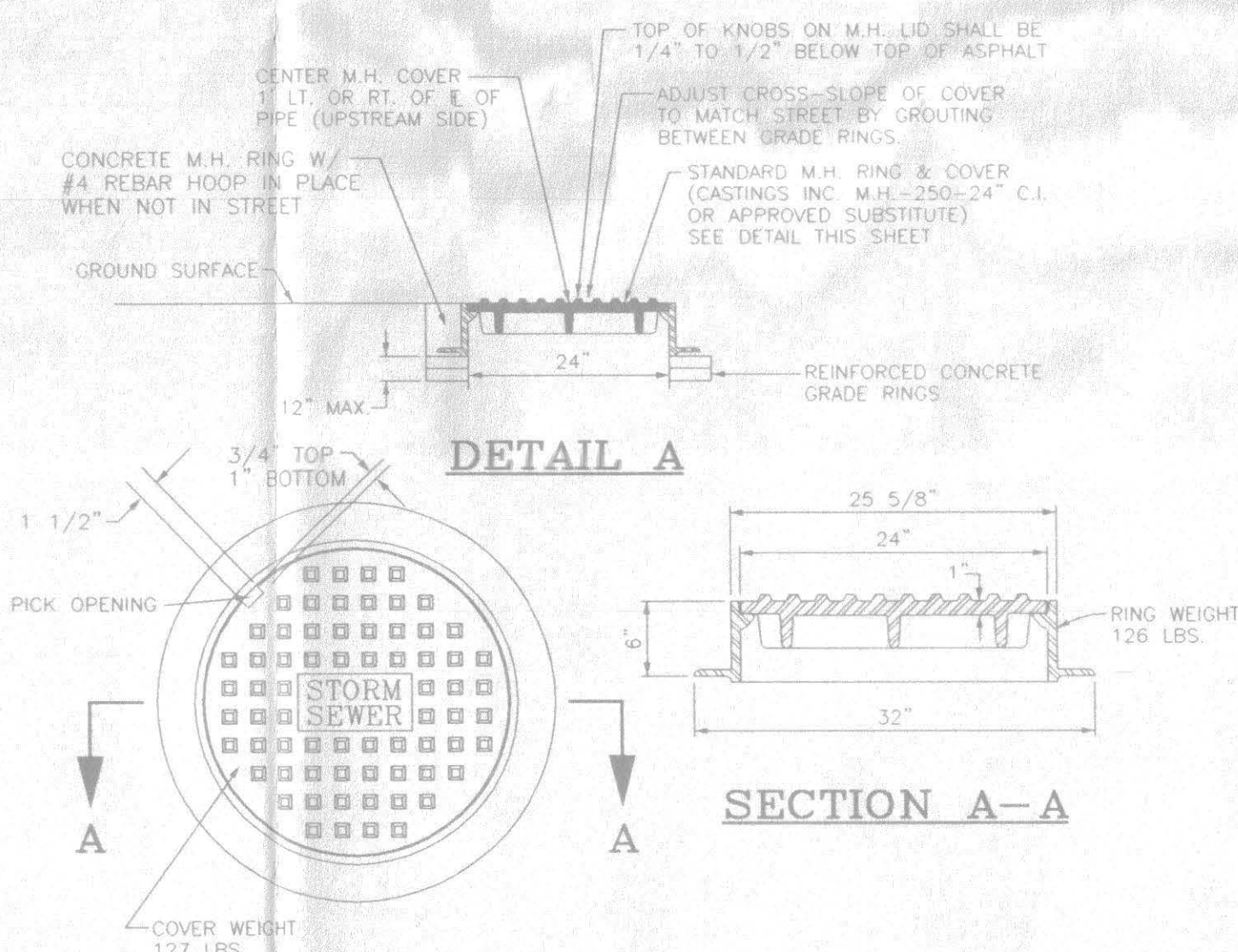
**STANDARD SHALLOW MANHOLE PRECAST BASE**



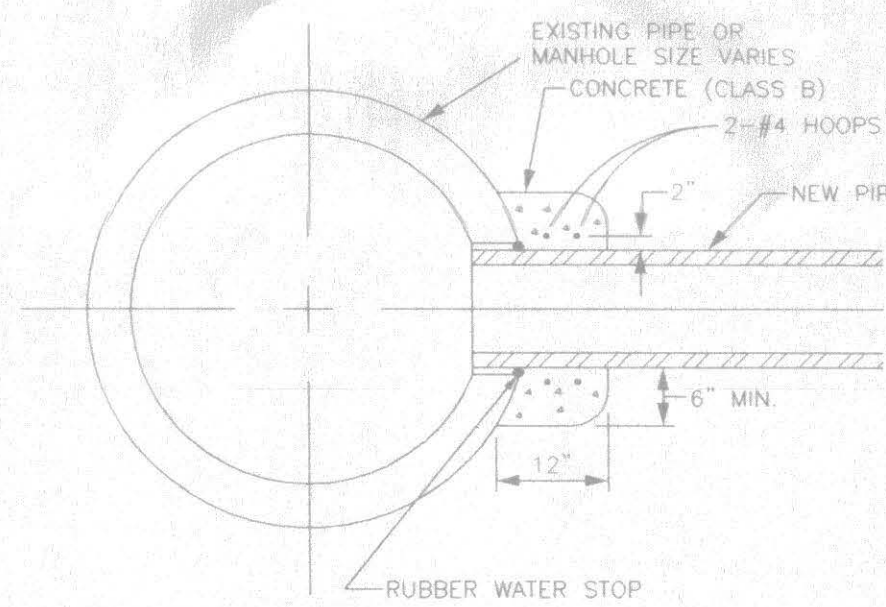
**STANDARD MANHOLE CAST-IN-PLACE BASE**



**TRENCH BACKFILL DETAIL**

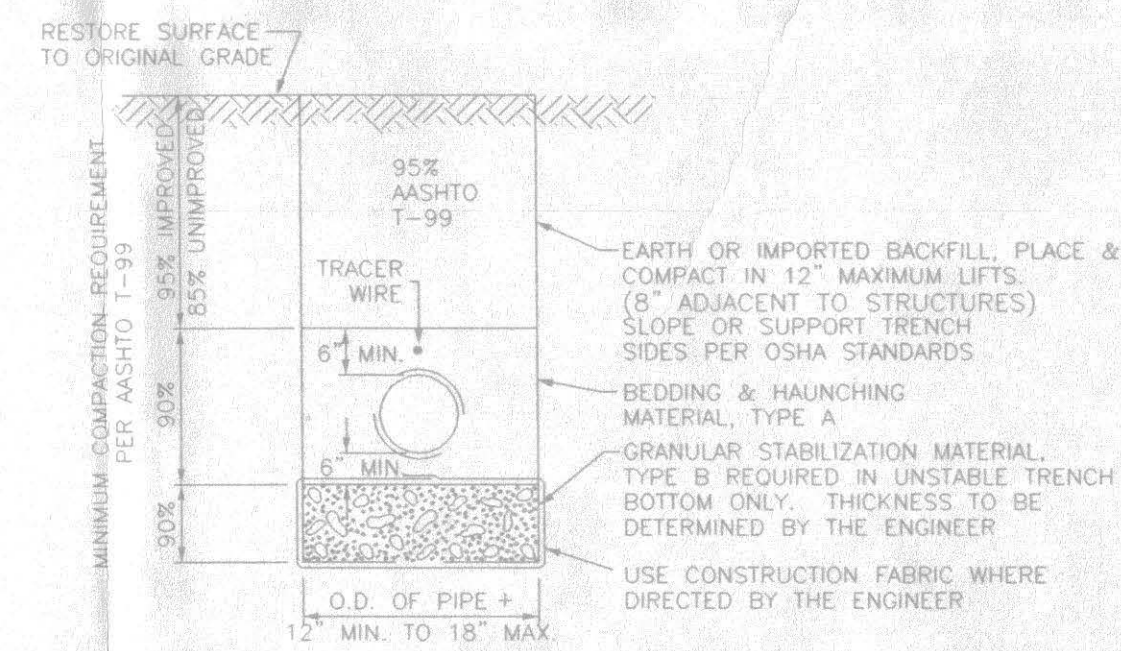


**STANDARD CAST IRON MANHOLE RING & COVER**

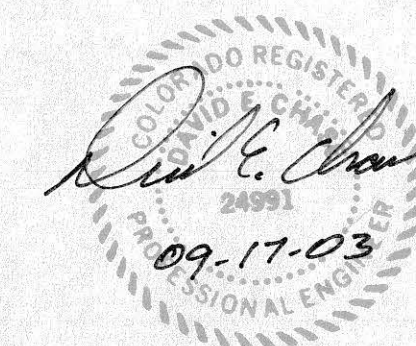


NOTE: IF THE HOLE IN THE EXISTING PIPE OR MANHOLE IS CORED, THE CONNECTION CAN BE MADE BY INSTALLING A FLEXIBLE PIPE TO MANHOLE CONNECTOR ("BOOT") AND THE CONCRETE ENCASUREMENT ELIMINATED.

**CONNECTION TO EXISTING PIPE, MANHOLE OR INLET BOX**



**TYPICAL TRENCH DETAIL**



05-078

DRAWN BY: F.J.B.	REVIEWED:
DESIGNED BY: D.E.C.	DATE: _____ FOR _____
CHECKED BY: D.E.C.	REVIEWED:
	DATE: _____ FOR VISTA ENGINEERING CORP.

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GRAND VALLEY WATER USER ASSOC.	GRAND JUNCTION, CO	SCALE: N/A	JOB NO: 4003.00-06	DATE: 04-29-03
DRAIN D IMPROVEMENTS STANDARD DRAIN DETAILS		SHEET NO: 5 of 5		