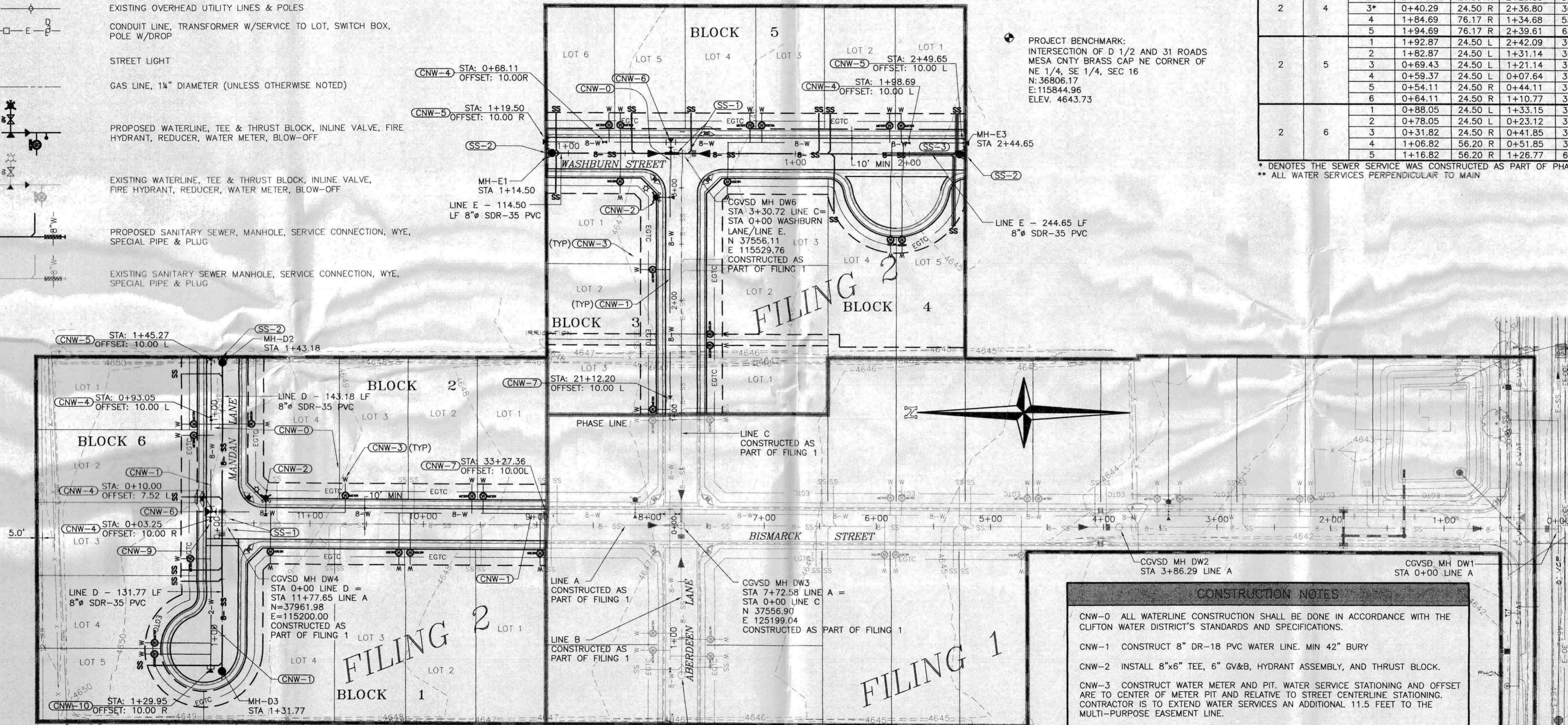


UTILITIES WILL BE PROVIDED TO THE SITE BY THE FOLLOWING VENDORS

GAS AND ELECTRIC:	XCEL ENERGY
WATER:	CLIFTON WATER DISTRICT
CABLE TELEVISION:	AT&T
SANITARY SEWER:	CENTRAL GRAND VALLEY SANITATION DISTRICT
TELEPHONE:	QWEST
IRRIGATION:	GRAND VALLEY IRRIGATION DISTRICT
DRAINAGE:	GRAND JUNCTION DRAINAGE DISTRICT

COORDINATES							
PHASE	BLOCK	LOT #	ROADWAY STATIONING	ROADWAY OFFSET	STATIONING	OFFSET	
2	1	1*	8+97.01	24.50 L	9+49.01	36.00 L	
		2*	10+11.01	24.50 L	9+59.01	36.00 L	
		3*	10+21.01	24.50 L	10+73.01	36.00 L	
		4*	11+35.14	24.50 L	10+83.01	36.00 L	
2	2	1*	9+47.59	24.50 R	08+95.65	36.00 R	
		2*	9+57.59	24.50 R	10+08.06	36.00 R	
		3*	10+68.73	24.50 R	10+18.06	36.00 R	
		4*	0+88.05	24.50 R	11+29.54	36.00 R	
2	3	1	0+54.00	24.50 L	1+10.77	36.00 L	
		2*	22+27.47	24.50 L	1+70.43	36.00 L	
		3*	21+03.05	24.50 L	1+60.43	36.00 L	
2	4	1*	21+60.36	24.50 R	1+04.07	36.00 R	
		2*	21+70.36	24.50 R	2+26.80	36.00 R	
		3*	0+40.29	24.50 R	2+36.80	36.00 R	
		4	1+84.69	76.17 R	1+34.68	53.10 R	
		5	1+94.69	76.17 R	2+39.61	63.77 R	
		6	1+92.87	24.50 L	2+42.09	36.00 L	
2	5	1	2	1+82.87	24.50 L	1+31.14	36.00 L
		3	0+69.43	24.50 L	1+21.14	36.00 L	
		4	0+59.37	24.50 L	0+07.64	36.00 L	
		5	0+54.11	24.50 R	0+44.11	36.00 R	
		6	0+64.11	24.50 R	1+10.77	36.00 R	
2	6	1	0+88.05	24.50 L	1+33.15	36.00 L	
		2	0+78.05	24.50 L	0+23.12	36.00 L	
		3	0+31.82	24.50 R	0+41.85	36.00 R	
		4	1+06.82	56.20 R	0+51.85	36.00 R	
		5	1+16.82	56.20 R	1+26.77	65.75 R	

\* DENOTES THE SEWER SERVICE WAS CONSTRUCTED AS PART OF PHASE 1  
 \*\* ALL WATER SERVICES PERPENDICULAR TO MAIN



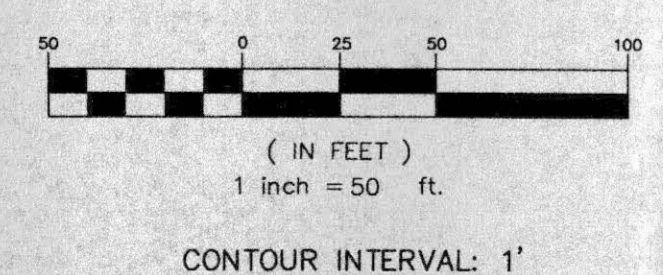
### CONSTRUCTION NOTES

- CNW-0 ALL WATERLINE CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE CLIFTON WATER DISTRICT'S STANDARDS AND SPECIFICATIONS.
- CNW-1 CONSTRUCT 8" DR-18 PVC WATER LINE. MIN 42" BURY
- CNW-2 INSTALL 8"x6" TEE, 6" GV&B, HYDRANT ASSEMBLY, AND THRUST BLOCK.
- CNW-3 CONSTRUCT WATER METER AND PIT. WATER SERVICE STATIONING AND OFFSET ARE TO CENTER OF METER PIT AND RELATIVE TO STREET CENTERLINE STATIONING. CONTRACTOR IS TO EXTEND WATER SERVICES AN ADDITIONAL 11.5 FEET TO THE MULTI-PURPOSE EASEMENT LINE.
- CNW-4 INSTALL 8" GV&B.
- CNW-5 INSTALL BLOWOFF PLUG & THRUSTBLOCK
- CNW-6 INSTALL 8"x8"x8" TEE, (1)-8" GV&B & THRUST BLOCK.
- CNW-7 REMOVE PLUG & BLOWOFF AND CONNECT TO EXISTING WATER LINE.
- CNW-8 INSTALL 90° BEND AND THRUST BLOCK.
- CNW-9 REDUCE TO 2".
- CNW-10 INSTALL END CAP & THRUST BLOCK.

SS-1 EXISTING STUBOUT TO BE REMOVED AND THE NEW SEWERLINE INSTALLED INTO THE EXISTING MANHOLE. GROUT EXISTING INVERT AS NECESSARY TO PROVIDE A SMOOTH INVERT CHANNEL AND WATERTIGHT MANHOLE

SS-2 STUB-OUT FOR FUTURE SEWER LINE CONNECTION 5' MAXIMUM LENGTH. SANITARY SEWER STUB-OUTS TO BE GLUE CAPPED AND MARKED WITH A 2x4 POST PAINTED GREEN.

SS-3 PROVIDE FLOWABLE FILL BACKFILL ON BOTH THE SEWER MAIN AND SEWER SERVICE LINES BEYOND STA 1+76.84



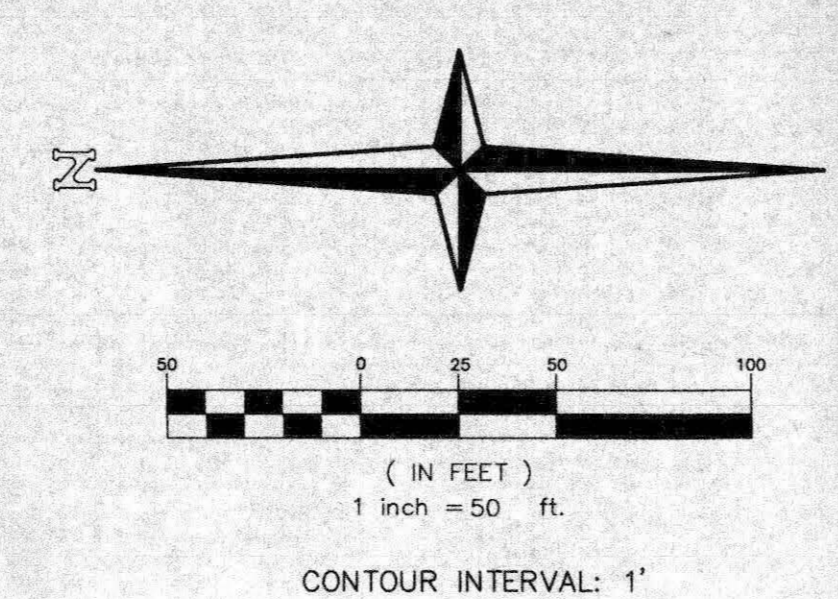
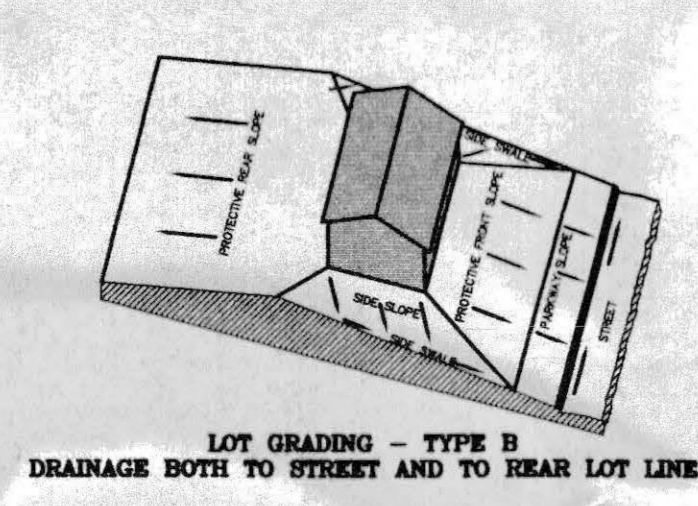
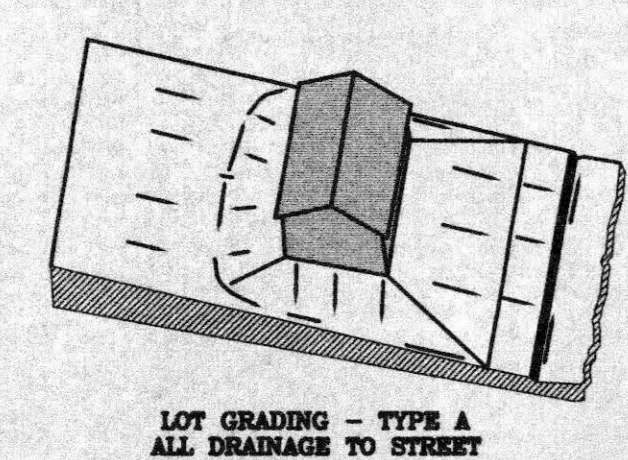
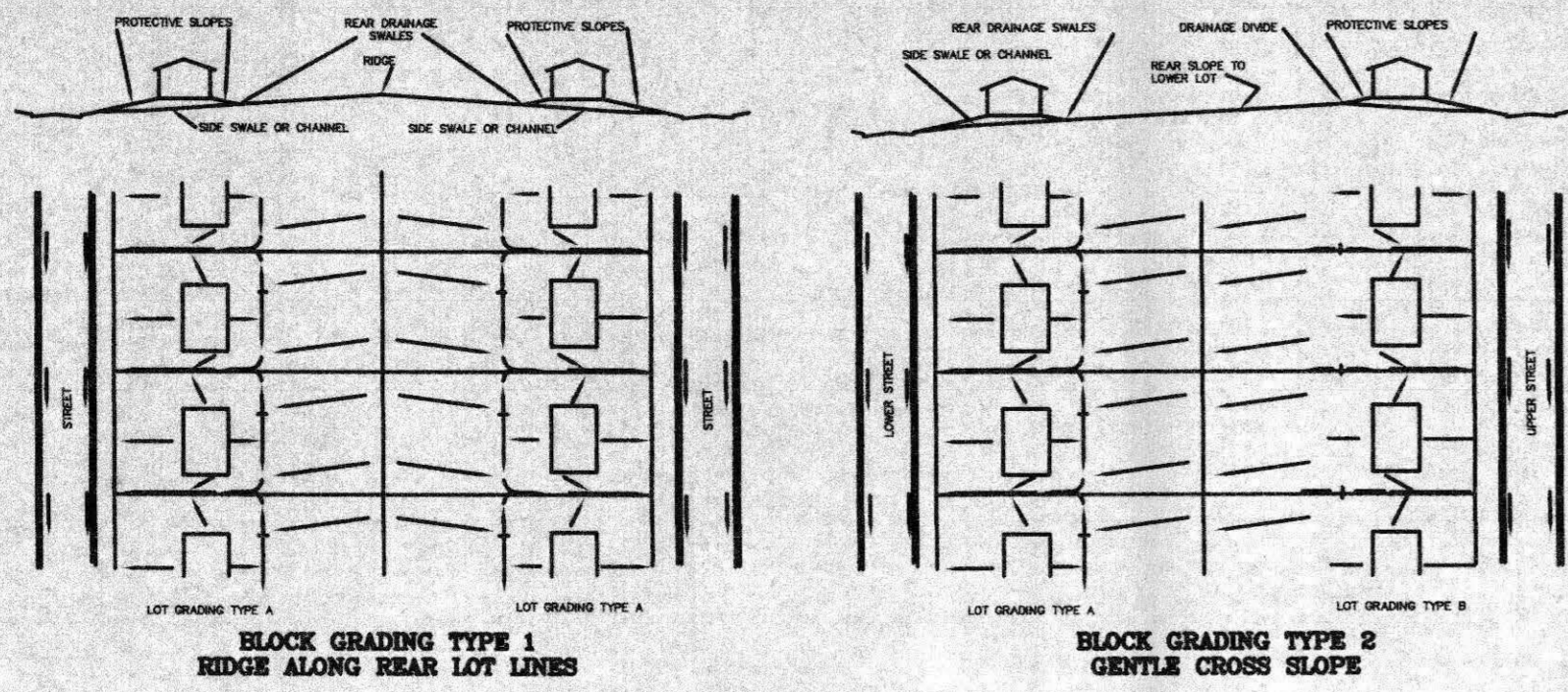
CALL UTILITY NOTIFICATION  
 CENTER OF COLORADO  
**1-800-922-1987**  
 CALL 2 BUSINESS DAYS IN ADVANCE  
 BEFORE YOU DIG, GRADE, OR EXCAVATE  
 FOR THE MARKING OF UNDERGROUND  
 MEMBER UTILITIES.

<b>ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE</b> CENTRAL GRAND VALLEY SANITATION DISTRICT <i>[Signature]</i> Date: 7-21-03	<b>ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.</b> Acceptance of these plans does not relieve the developer, contractor, or the engineer from conformance with the City of Grand Junction Standard Specifications. City of Grand Junction Engineering Division Representative Date:	<b>APPROVED FOR CONSTRUCTION</b> CLIFTON WATER DISTRICT <i>[Signature]</i> Date: 07-11-03
<b>INITIAL ACCEPTANCE</b> CENTRAL GRAND VALLEY SANITATION DISTRICT Date:	<b>ACCEPTED AS CONSTRUCTED</b> City of Grand Junction Engineering Division Representative Date:	<b>ACCEPTED AS CONSTRUCTED</b> CLIFTON WATER DISTRICT <i>[Signature]</i> Date:

CITY OF GRAND JUNCTION  
 G & R WEST, LLC  
 THOMPSON-LANGFORD CORP.  
 ENGINEERS AND LAND SURVEYORS  
 529 25 1/2 RD., SUITE B210  
 GRAND JUNCTION, COLORADO  
 PH. (970) 243-6067  
 FAX (970) 241-2845  
 tl@tcwest.com

UTILITY/COMPOSITE PLAN FOR  
 DAKOTA WEST SUBDIVISION

DATE: July 7, 2003  
 SCALE: Horiz: 1" = 50'  
 Project No: 0543-001  
 SHEET NO: 3 OF 12

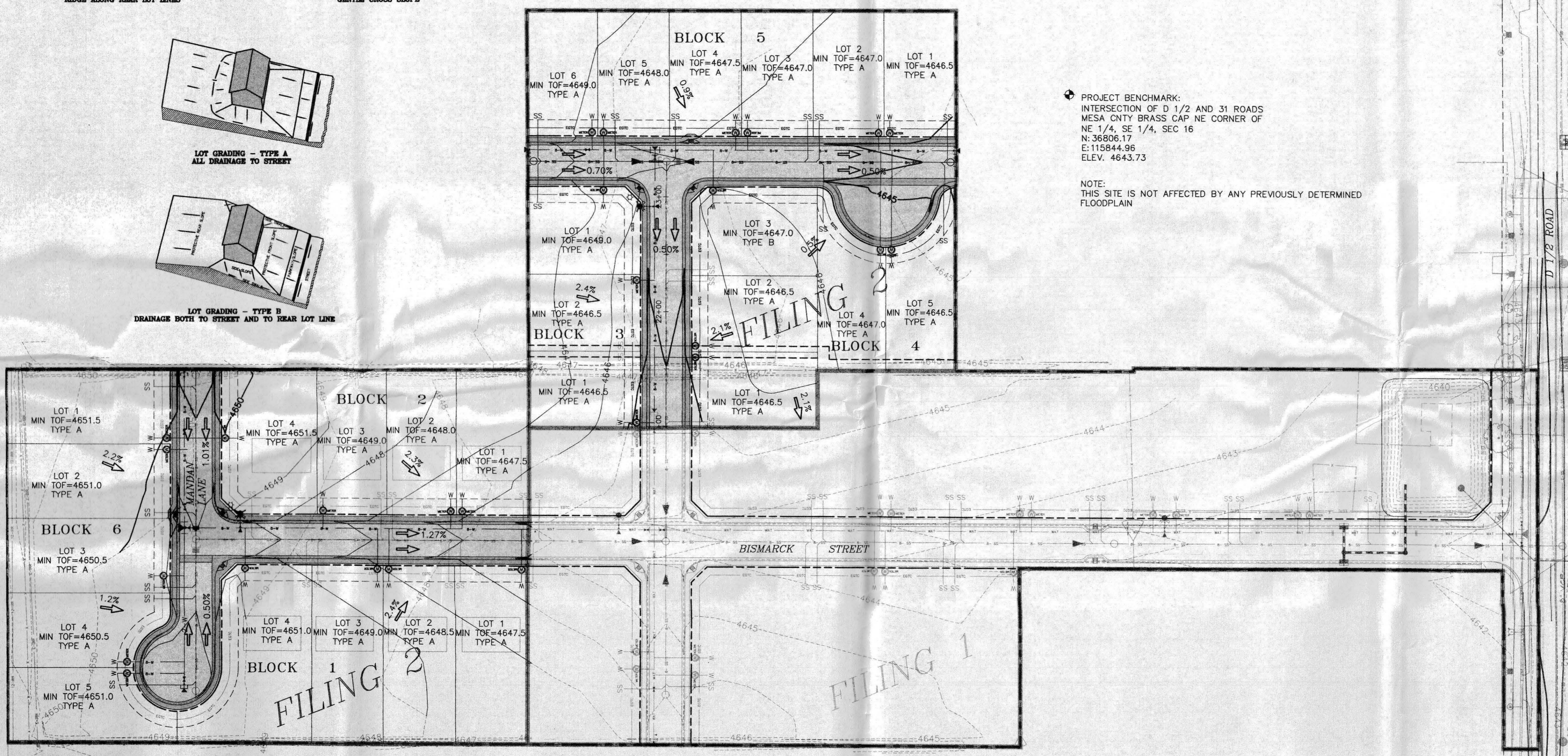


**LEGEND**

- DRAINAGE FLOW DIRECTION
- 4645 — PROPOSED CONTOUR (5' INTERVAL)
- 4647 — PROPOSED CONTOUR (1' INTERVAL)
- - - 4650 - - - EXISTING CONTOUR (5' INTERVAL)
- - - 4647 - - - EXISTING CONTOUR (1' INTERVAL)

PROJECT BENCHMARK:  
INTERSECTION OF D 1/2 AND 31 ROADS  
MESA CNTY BRASS CAP NE CORNER OF  
NE 1/4, SE 1/4, SEC 16  
N: 36806.17  
E: 115844.98  
ELEV. 4643.73

NOTE:  
THIS SITE IS NOT AFFECTED BY ANY PREVIOUSLY DETERMINED FLOODPLAIN



REVISION	DATE	DESCRIPTION	BY	CHKD

CITY OF GRAND JUNCTION

**GRADING & DRAINAGE PLAN FOR**  
**DAKOTA WEST SUBDIVISION**

THOMPSON-LANGFORD CORP.  
ENGINEERS AND LAND SURVEYORS  
529 25 1/2 RD., SUITE B210  
GRAND JUNCTION, COLORADO  
PH. (970) 243-6087  
FAX (970) 241-2845  
tlc@tlwest.com

DRAWN BY: MH  
CHECKED BY: JWM

**ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.**  
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DATE: July 7, 2003  
SCALE: Horiz: 1" = 50'

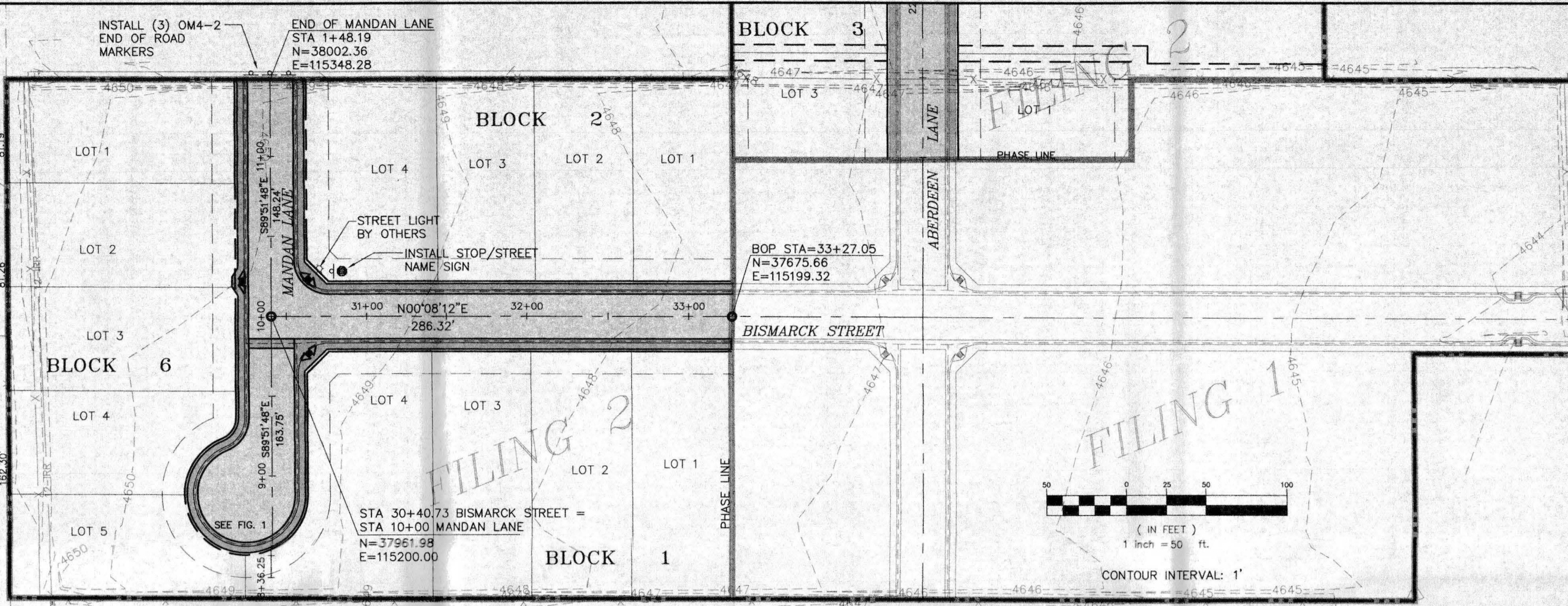
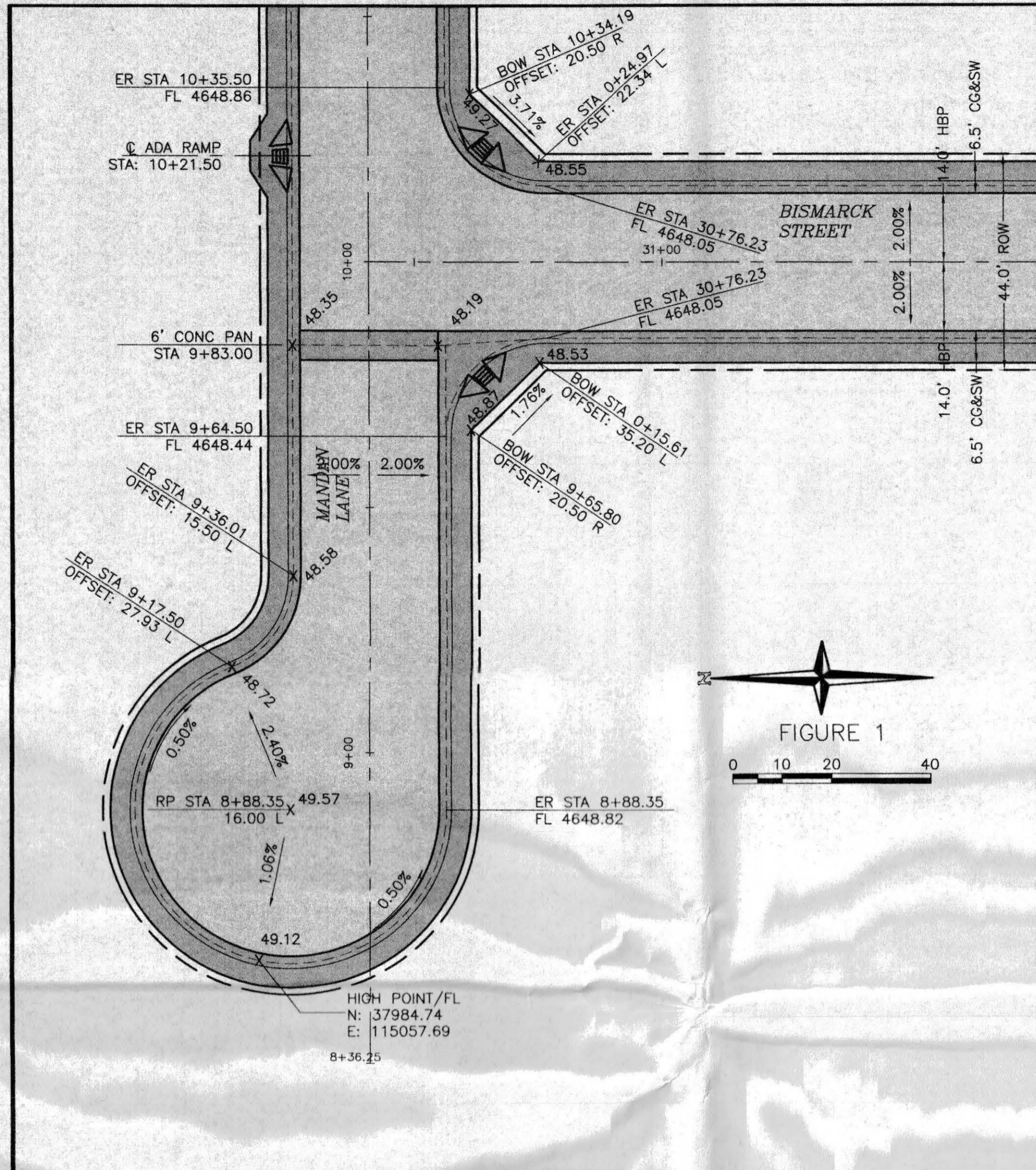
**ACCEPTED AS CONSTRUCTED**

Project No: 0543-001  
SHEET NO: 4 OF 12

CALL UTILITY NOTIFICATION  
CENTER OF COLORADO  
**1-800-922-1987**  
CALL 2 BUSINESS DAYS IN ADVANCE  
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FOR THE MARKING OF UNDERGROUND  
MEMBER UTILITIES.

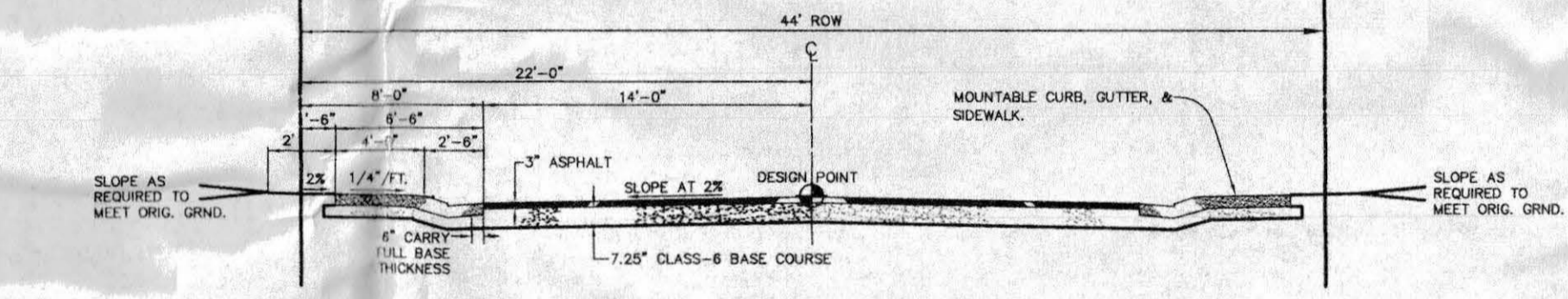
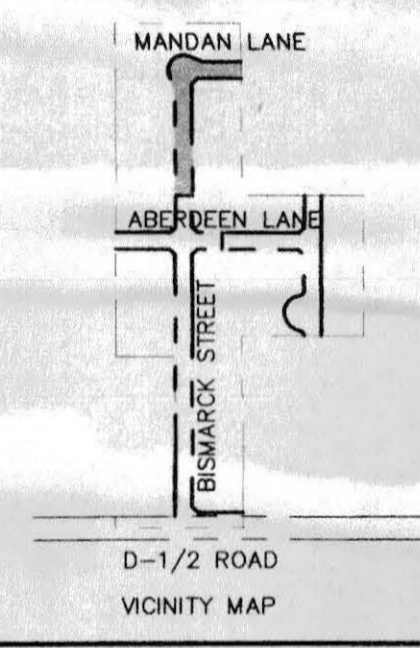
City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_

City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_



NOTE: CONTACT CITY TRAFFIC OPERATIONS SUPERVISOR, 970/244-1573, PRIOR TO ANY SIGN MATERIAL ORDER OR INSTALLATION

SIGN TYPE	MATERIAL FACING	QUANTITY
(R1-1) STOP SIGN	HIGH INTENSITY	1
(D3) STREET NAME	HIGH INTENSITY	1
(OM4-2) END OF ROAD MARKERS	HIGH INTENSITY	3



MANDAN/BISMARCK RESIDENTIAL STREET TYPICAL SECTION

PROJECT BENCHMARK: INTERSECTION OF D 1/2 AND 31 ROADS MESA CNTY BRASS CAP NE CORNER OF NE 1/4, SE 1/4, SEC 16 N: 36806.17 E: 115844.96 ELEV. 4643.73

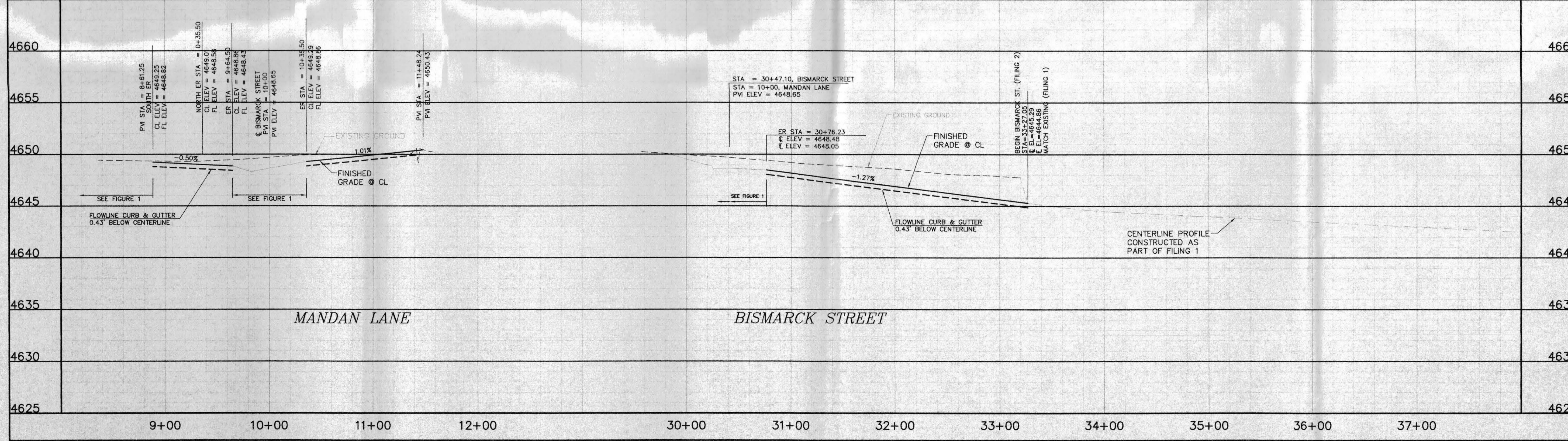
CALL UTILITY NOTIFICATION CENTER OF COLORADO  
**1-800-922-1987**  
 CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_

**ACCEPTED AS CONSTRUCTED**

City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_



NO.	DATE	DESCRIPTION	BY

CITY OF GRAND JUNCTION

G B R WEST, LLC

**DAKOTA WEST SUBDIVISION  
 BISMARCK STREET/MANDAN LANE  
 PLAN & PROFILE**

THOMPSON-LANGFORD CORP.  
 ENGINEERS AND LAND SURVEYORS  
 629 25 1/2 RD., SUITE 2010  
 GRAND JUNCTION, COLORADO  
 PH (970) 243-6067  
 FAX (970) 241-2845  
 tl@tlwest.com

**H2U**

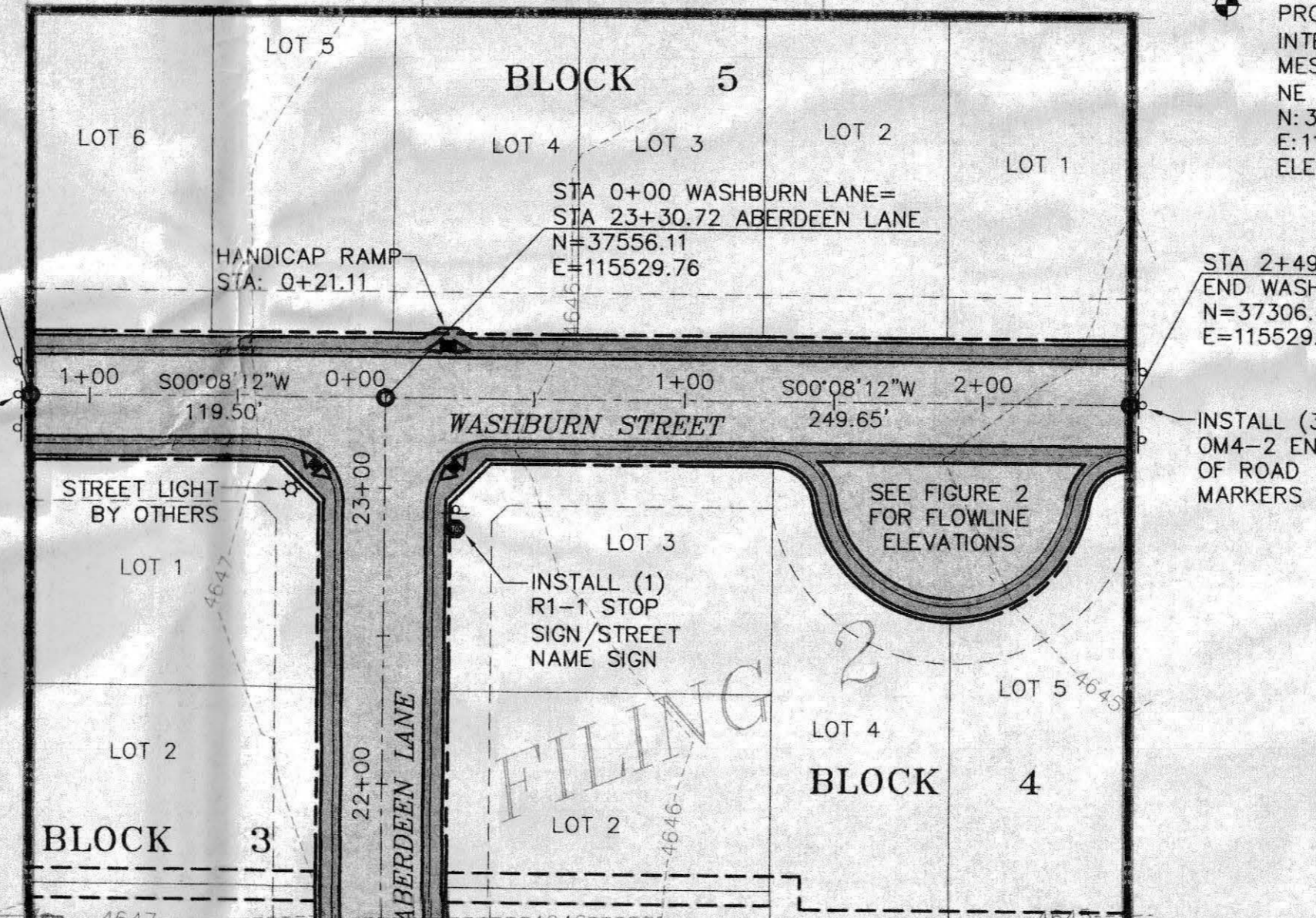
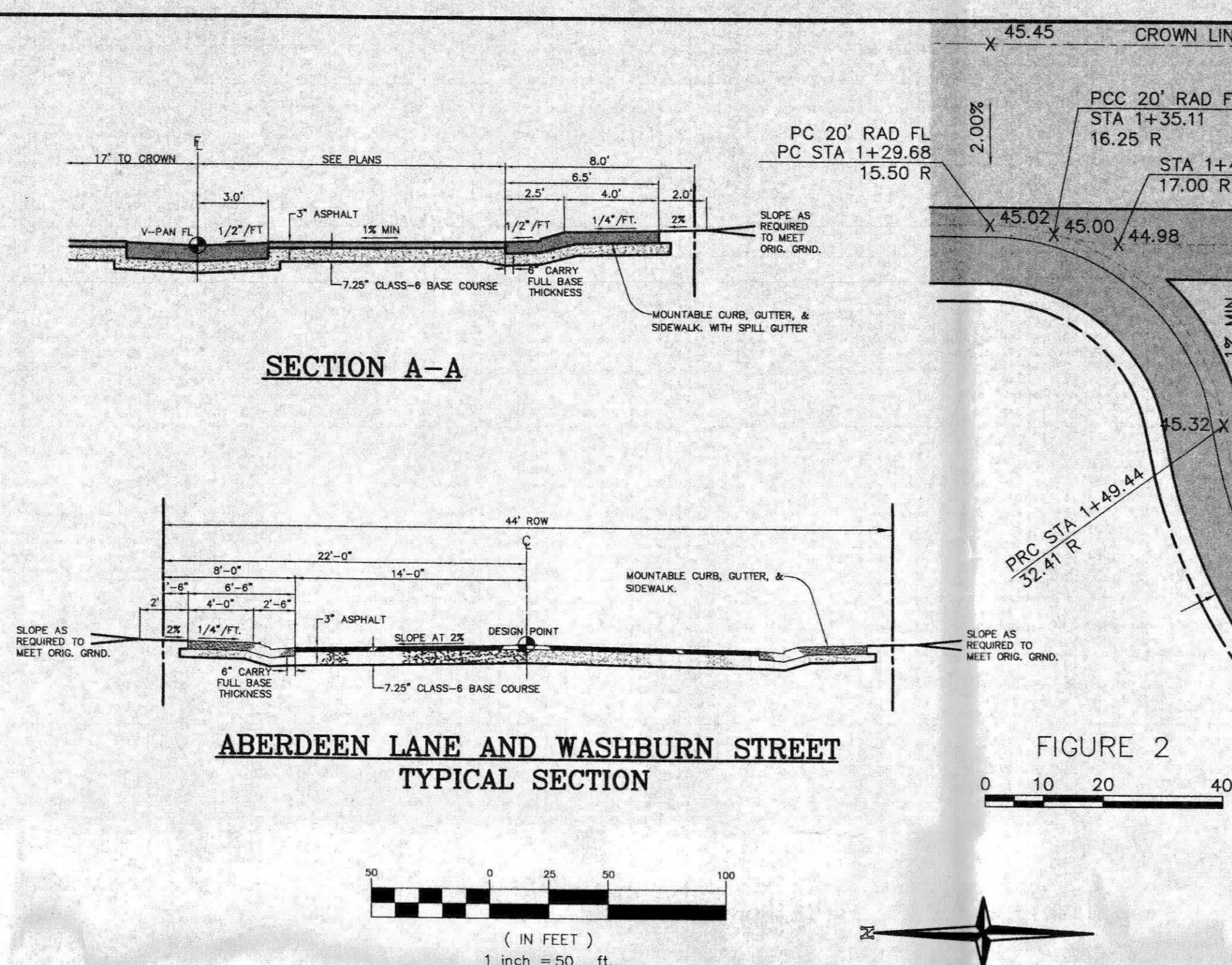
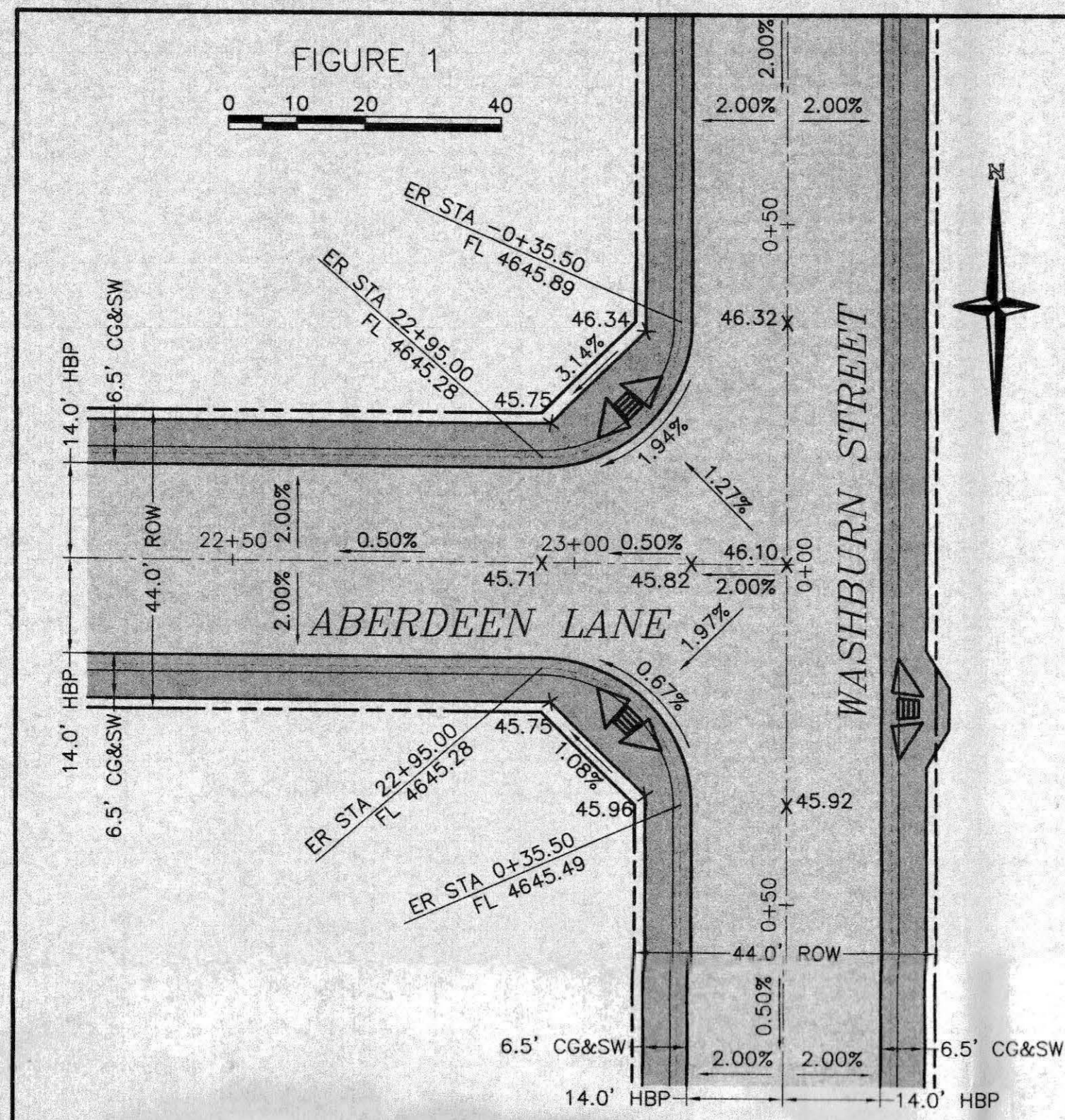
DRAWN BY: MRH  
 CHECKED BY: JWM

DATE: July 7, 2003

SCALE:  
 Horiz: 1" = 50'  
 Vert: 1" = 5'

Project No.: 0543-001

SHEET NO.: 6 OF 12



PROJECT BENCHMARK:  
INTERSECTION OF D 1/2 AND 31 ROADS  
MESA CNTY BRASS CAP NE CORNER OF  
NE 1/4, SE 1/4, SEC 16  
N=36806.17  
E=115844.96  
ELEV. 4643.73

NOTE: CONTACT CITY TRAFFIC OPERATIONS  
SUPERVISOR, 970/244-1573, PRIOR TO ANY  
SIGN MATERIAL ORDER OR INSTALLATION

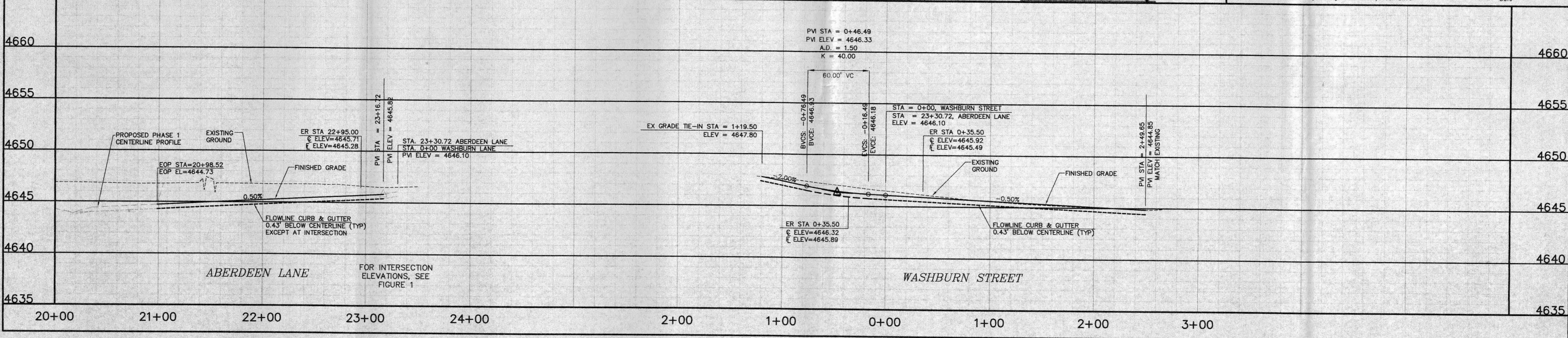
SIGN TYPE	MATERIAL FACING	QUANTITY
(OM4-2) END OF ROAD MARKERS (R1-1) STOP	HIGH INTENSITY	6
(D3) STREET NAME	HIGH INTENSITY	2

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_

ACCEPTED AS CONSTRUCTED

City of Grand Junction Engineering Division Representative \_\_\_\_\_ Date \_\_\_\_\_



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

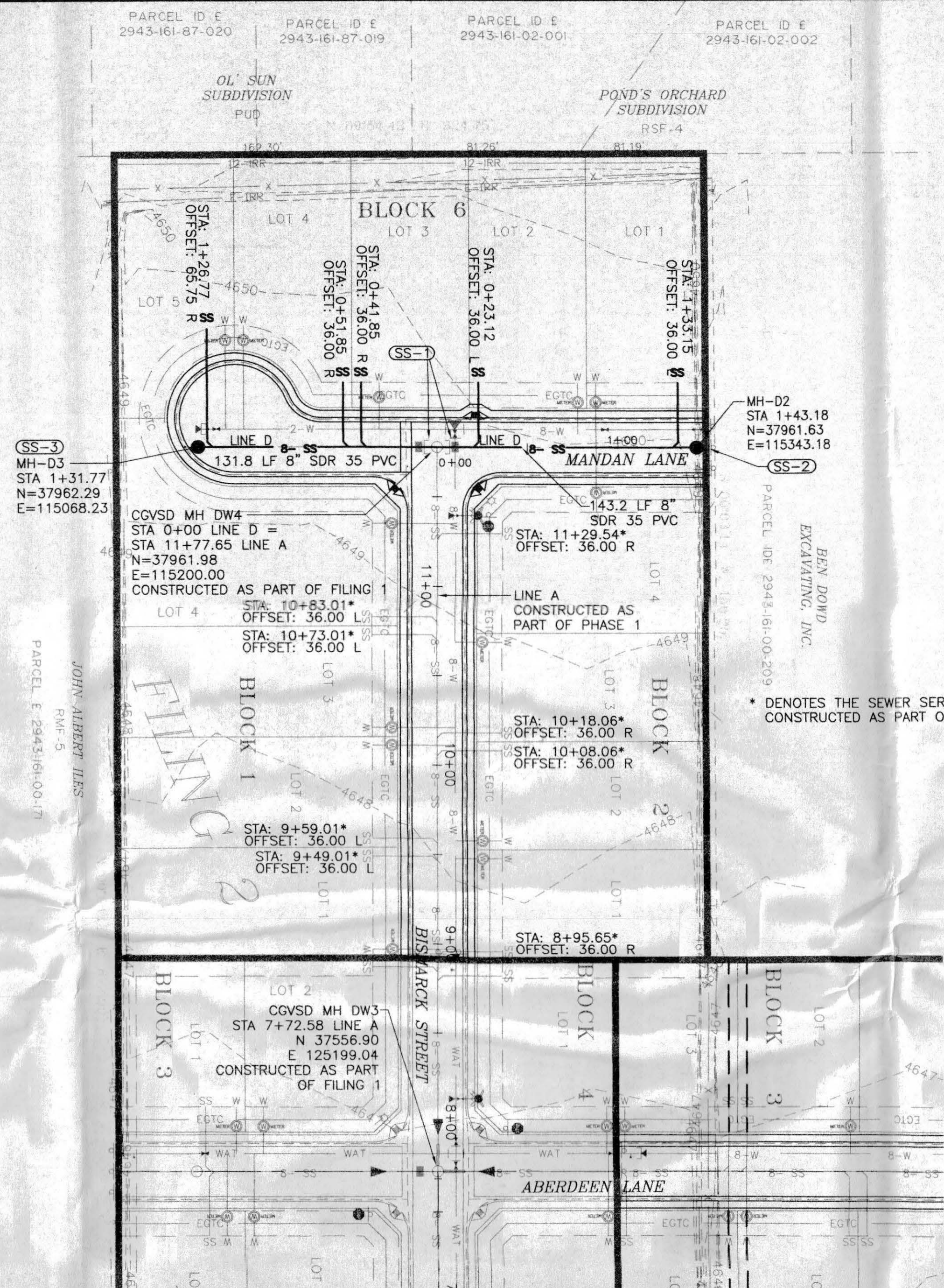
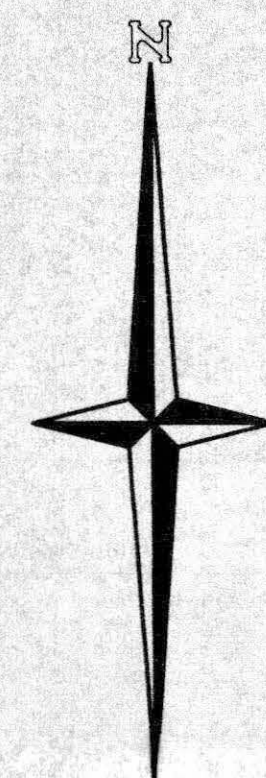
THOMPSON-LANGFORD CORP.  
ENGINEERS AND LAND SURVEYORS  
529 25 1/2 RD., SUITE B210  
GRAND JUNCTION, COLORADO  
PH. (970) 243-8067  
FAX (970) 241-2845  
tlic@tlwest.com

DRAWN BY: MPH  
CHECKED BY: JWM

DATE: July 7, 2003  
SCALE: Horiz: 1" = 50'  
Vert: 1" = 5'  
Project No: 0543-001  
SHEET NO: 7 OF 12

CITY OF GRAND JUNCTION

DAKOTA WEST SUBDIVISION  
ABERDEEN LANE/WASHBURN STREET  
PLAN & PROFILE



PROJECT BENCHMARK:  
INTERSECTION OF D 1/2 AND 31 ROADS  
MESA CNTY BRASS CAP NE CORNER OF  
NE 1/4, SE 1/4, SEC 16  
N: 36806.17  
E: 115844.96  
ELEV. 4643.73

CONTOUR INTERVAL: 1'

**CONSTRUCTION NOTES**

SS-1 EXISTING STUBOUT TO BE REMOVED AND THE NEW SEWERLINE INSTALLED INTO THE EXISTING MANHOLE. GROUT EXISTING INVERT AS NECESSARY TO PROVIDE A SMOOTH INVERT CHANNEL AND WATERTIGHT MANHOLE.

SS-2 STUB-OUT FOR FUTURE SEWER LINE CONNECTION 5' MAXIMUM LENGTH. SANITARY SEWER STUB-OUTS TO BE GLUE CAPPED AND MARKED WITH A 2x4 POST PAINTED GREEN.

SS-3 INVERT CHANNEL IS TO BE A MINIMUM OF  $\frac{3}{4}$  OF THE LENGTH THROUGH THE MANHOLE TO FACILITATE TESTING AND TO PROVIDE ACCESS FOR THE DISTRICT'S CLEANING AND MAINTENANCE EQUIPMENT.

CALL UTILITY NOTIFICATION  
CENTER OF COLORADO  
**1-800-922-1987**  
CALL 2 BUSINESS DAYS IN ADVANCE  
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MEMBER UTILITIES.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.  
ACCEPTANCE OF THESE PLANS DOES NOT RELIEVE THE DEVELOPER, CONTRACTOR, OR THE ENGINEER FROM COMPLIANCE WITH THE CITY OF GRAND JUNCTION STANDARDS SPECIFICATIONS.

City of Grand Junction Engineering Division Representative Date

---

ACCEPTED AS CONSTRUCTED

City of Grand Junction Engineering Division Representative Date

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE  
CENTRAL GRAND VALLEY SANITATION DISTRICT

*[Signature]* 7-21-03  
Date

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INITIAL ACCEPTANCE  
CENTRAL GRAND VALLEY SANITATION DISTRICT

Date

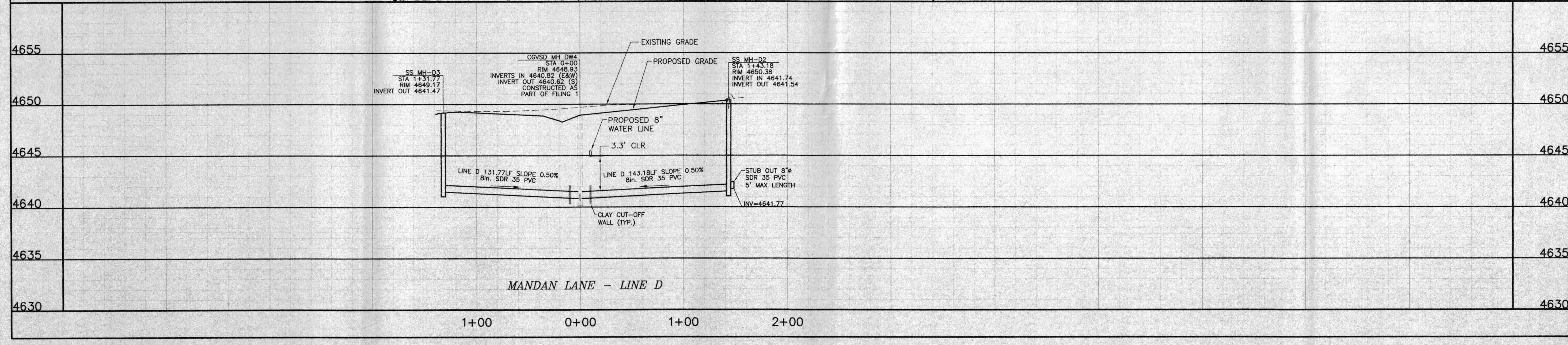
DATE	REVISION	DESCRIPTION

CITY OF GRAND JUNCTION  
G & R WEST, LLC

DAKOTA WEST SUBDIVISION  
MANDAN LANE SANITARY SEWER  
LINE "D"

---

THOMPSON-LANGFORD CORP.  
ENGINEERS AND LAND SURVEYORS  
529 25 1/2 RD., SUITE B210  
GRAND JUNCTION, COLORADO  
PH. (970) 243-8067  
FAX (970) 241-2845  
tlc@tlwest.com



4655

4650

4645

4640

4635

4630

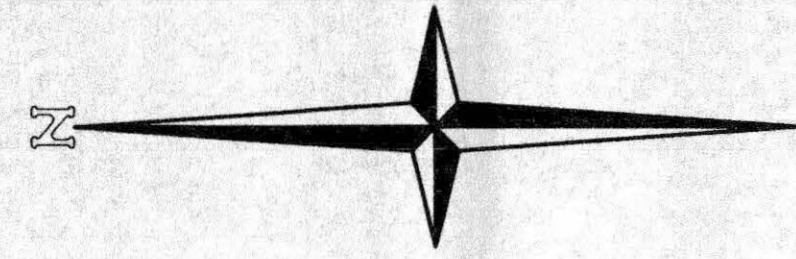
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DATE:  
July 7, 2003

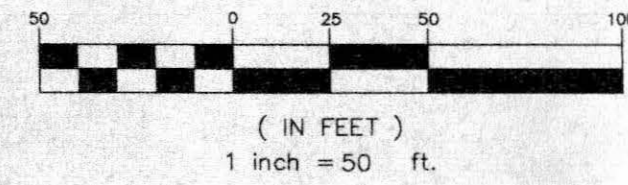
SCALE:  
Horiz: 1" = 50'  
Vert: 1" = 5'

Project No:  
0543-001

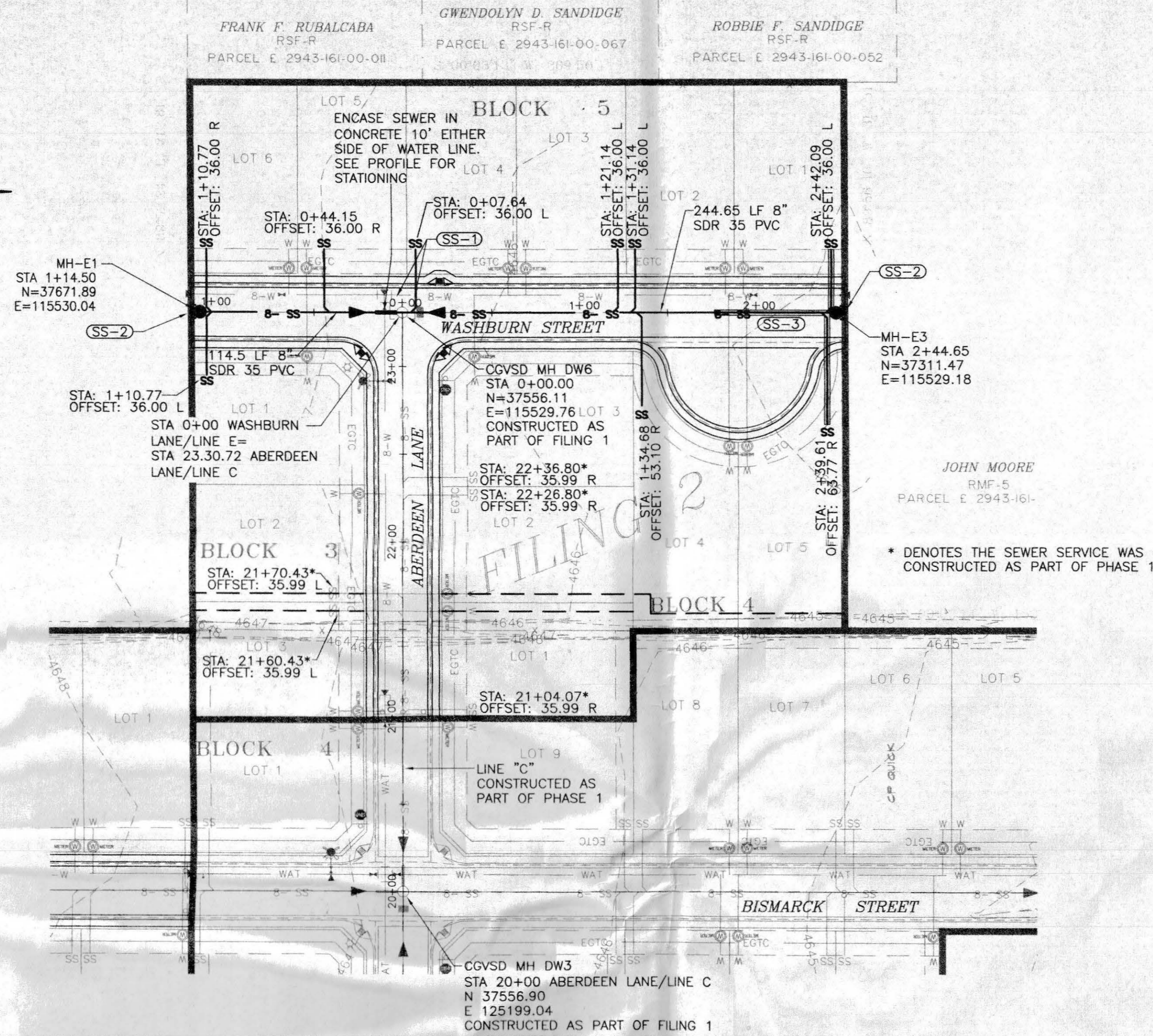
SHEET NO:  
8 OF 12



PROJECT BENCHMARK:  
INTERSECTION OF D 1/2 AND 31 ROADS  
MESA CNTY BRASS CAP NE CORNER OF  
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ELEV. 4643.73



CONTOUR INTERVAL: 1'



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SS-3 PROVIDE FLOWABLE FILL BACKFILL ON BOTH THE SEWER MAIN AND SEWER SERVICE LINES BEYOND STA 1+76.84 DENOTED BY:

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**1-800-922-1987**  
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MEMBER UTILITIES.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE  
CENTRAL GRAND VALLEY SANITATION DISTRICT  
*[Signature]* 7-22-03  
Date

INITIAL ACCEPTANCE  
CENTRAL GRAND VALLEY SANITATION DISTRICT  
Date

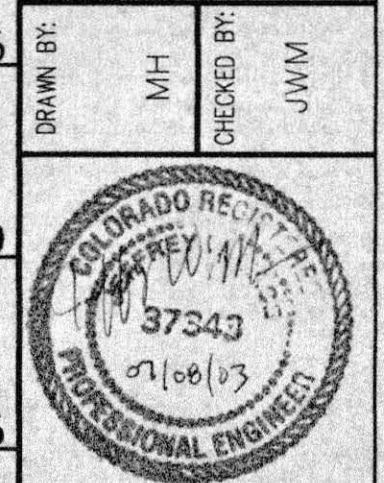
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City of Grand Junction Engineering Division Representative Date

ACCEPTED AS CONSTRUCTED  
City of Grand Junction Engineering Division Representative Date

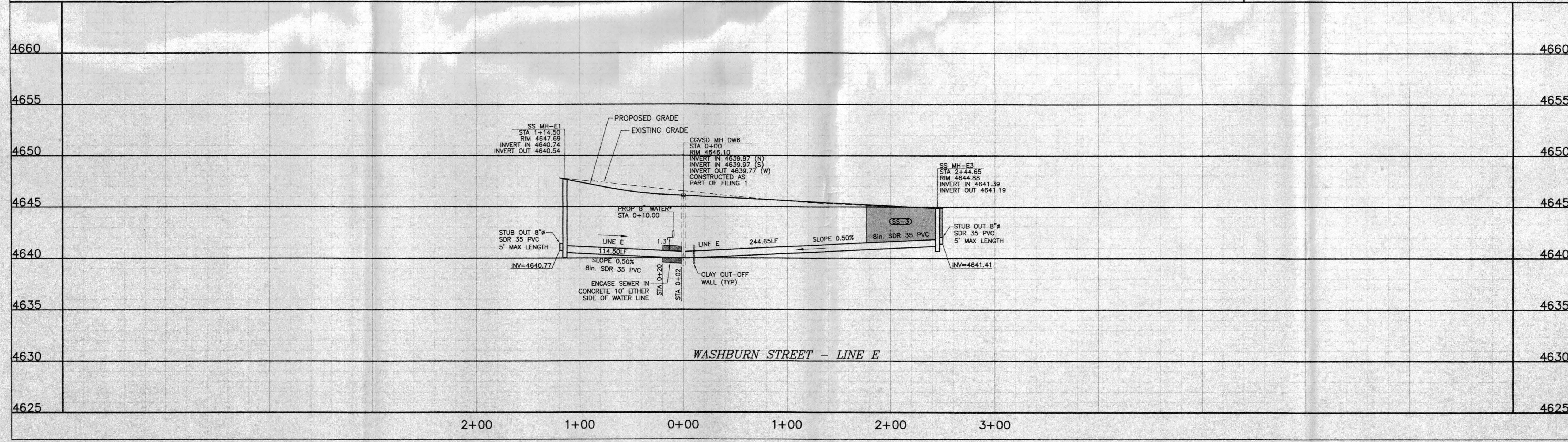
CHD	BY	DESCRIPTION	DATE	REVISION

CITY OF GRAND JUNCTION  
**DAKOTA WEST SUBDIVISION  
WASHBURN STREET SANITARY SEWER  
LINE "E"**  
G & R WEST, LLC

THOMPSON-LANGFORD CORP.  
ENGINEERS AND LAND SURVEYORS  
529 25 1/2 RD., SUITE B210  
GRAND JUNCTION, COLORADO  
PH. (970) 243-8067  
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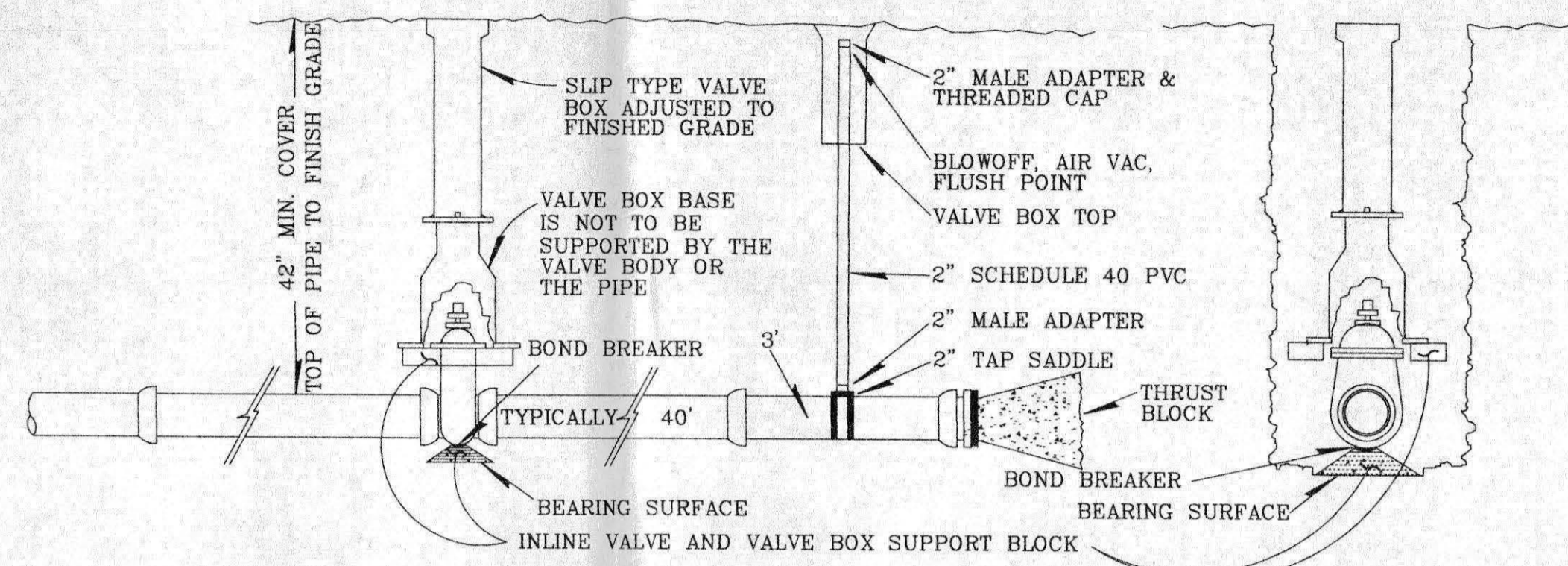
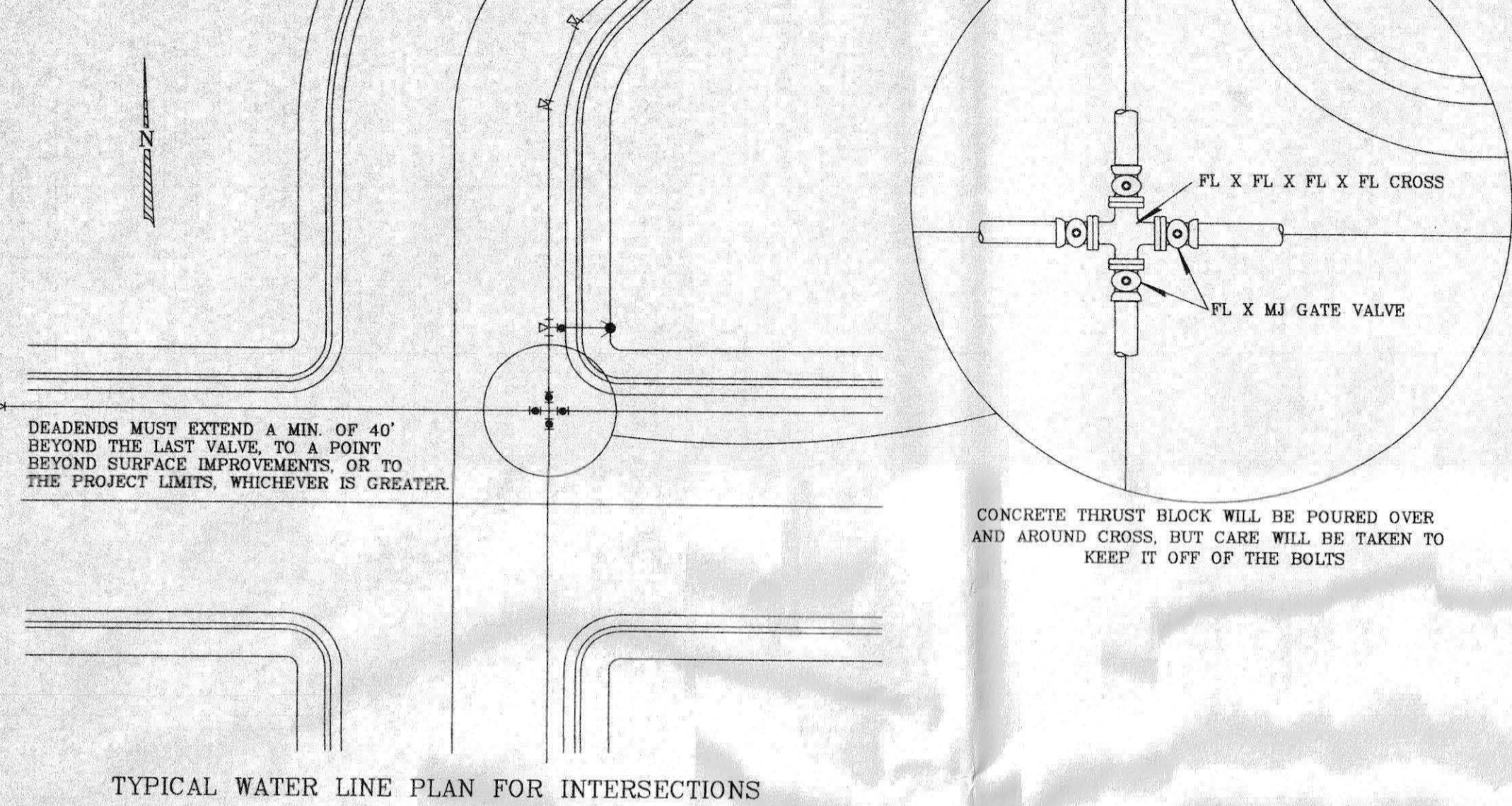
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July 7, 2003  
SCALE:  
Horiz: 1" = 50'  
Vert: 1" = 5'  
Project No:  
0543-001  
SHEET NO:  
9 OF 12



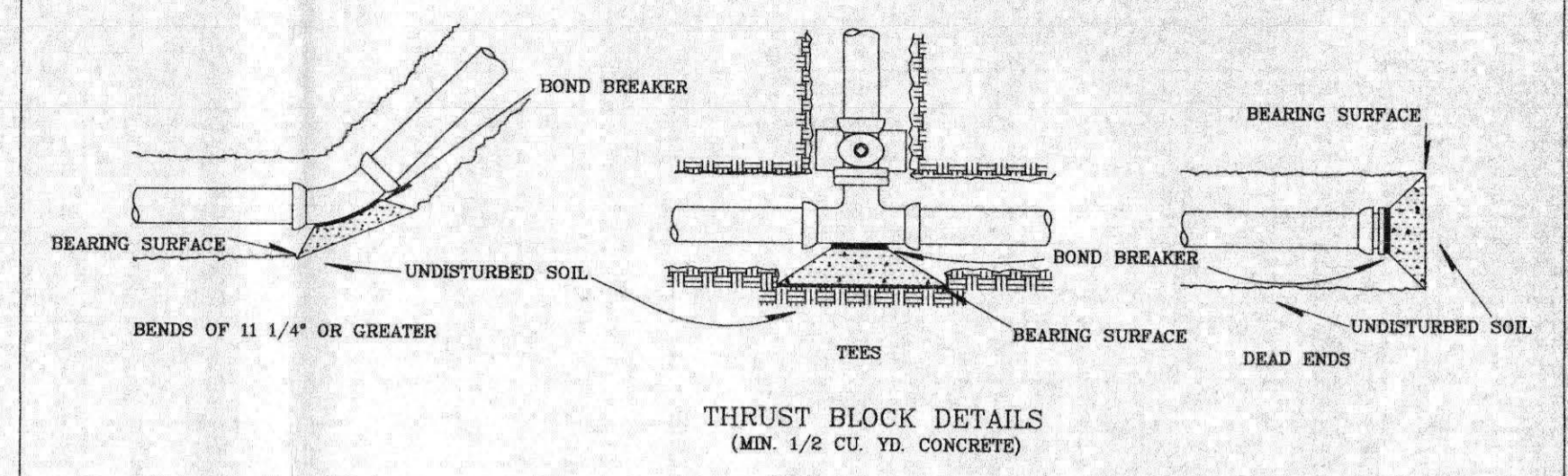
WATER LINES ARE TO BE INSTALLED ON THE NORTH OR EAST SIDE OF THE R.O.W., NO LESS THAN 2' NOR MORE THAN 3' FROM LIP OF CURB UNLESS OTHERWISE SHOWN.

ALL FERROUS METAL PIPE, VALVES, FITTINGS, AND APPURTENANCES SHALL BE WRAPPED WITH MINIMUM 4 MIL HIGH DENSITY POLYETHYLENE MATERIAL PRIOR TO BACKFILLING.

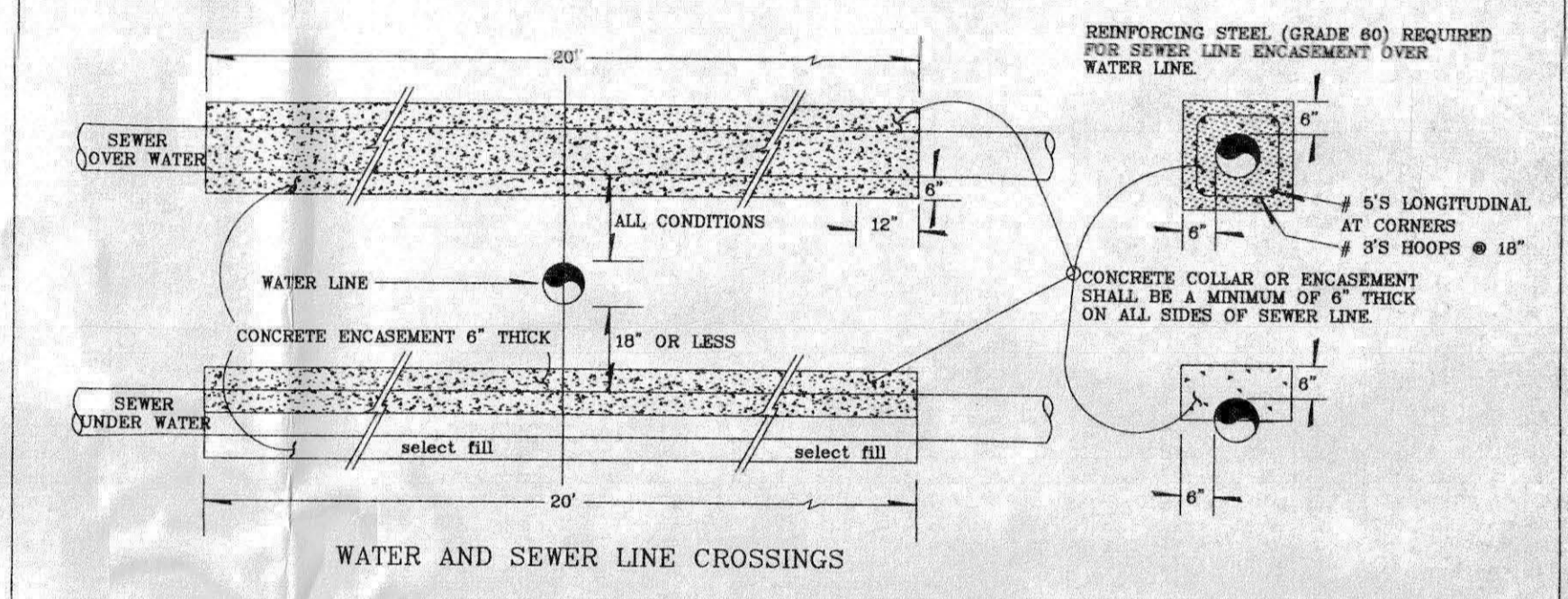
DIRECTIONAL CHANGES OF 11 1/4" OR MORE IN PIPE DIAMETERS 4" OR GREATER SHALL BE DUCTILE IRON FITTINGS WITH CONCRETE THRUST BLOCKING.



VALVE INSTALLATION & LINE TERMINATION

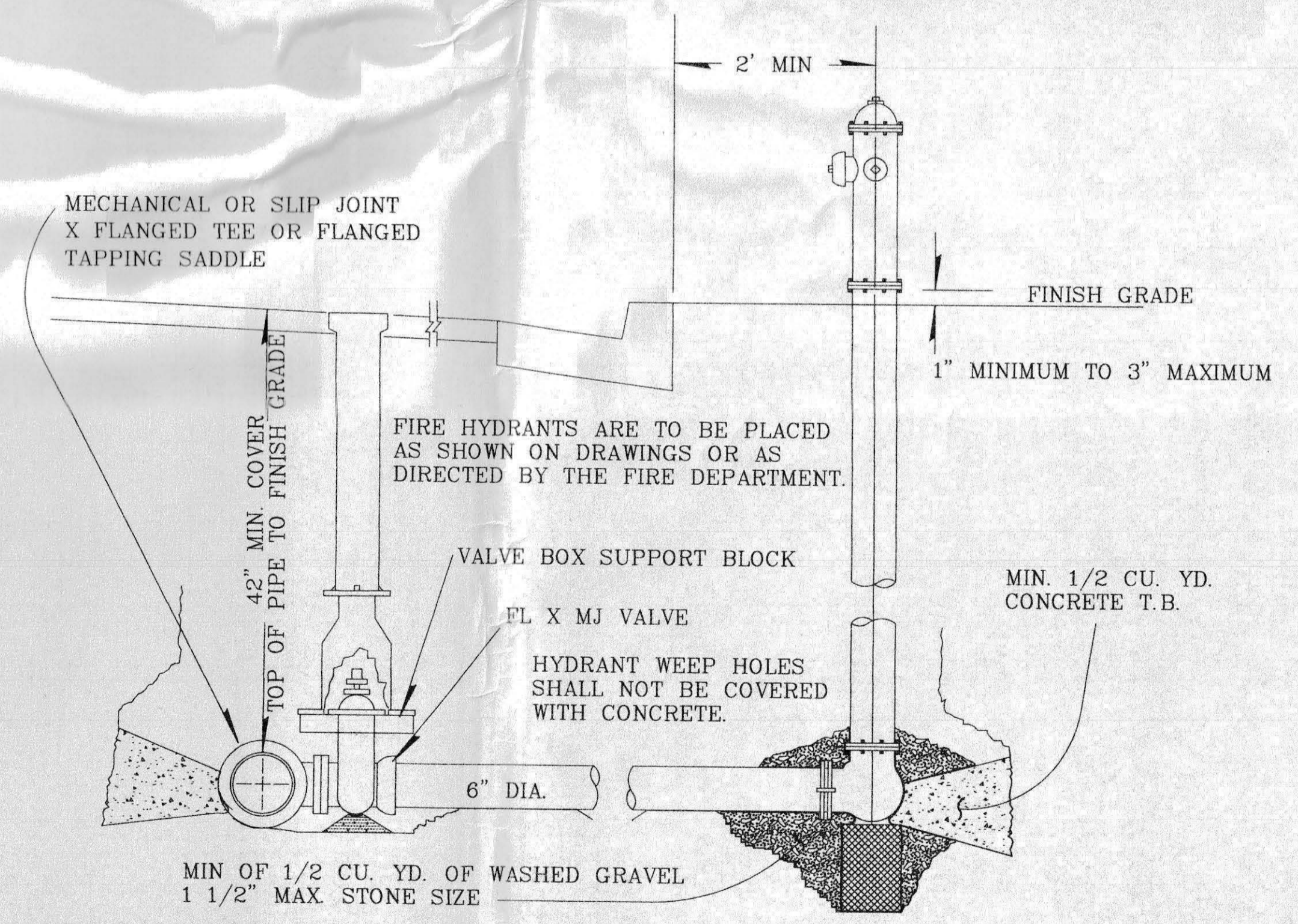
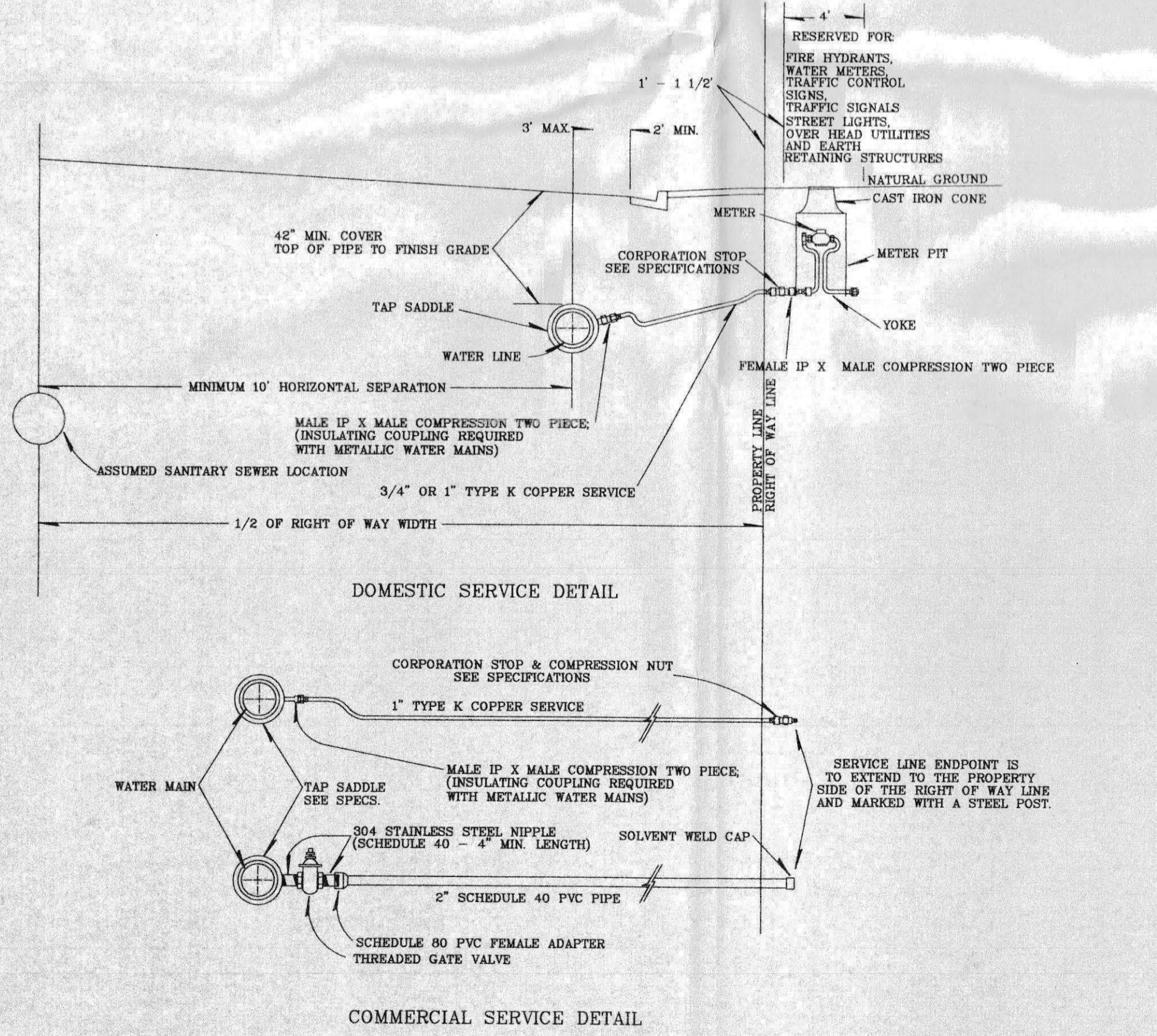


THRUST BLOCK DETAILS (MIN. 1/2 CU. YD. CONCRETE)



WATER AND SEWER LINE CROSSINGS

Note: Not all drawings on this typical will apply to every project



FIRE HYDRANT DETAIL

TABLE FOR CONCRETE THRUST BLOCKING BEARING AREAS (IN SQ. FT.)

SIZE	BENDS				TEE BRANCH SIZE AND DEAD ENDS
	90°	45°	22 1/2°	11 1/4°	
8	4.0	2.2	1.1	0	2.8
8	7.1	3.8	2.0	1.0	5.0
10	11.1	6.0	3.0	1.5	7.8
12	16.0	8.6	4.4	2.2	11.3
14	21.7	11.8	6.0	3.0	15.4
16	28.4	15.3	8.0	4.0	20.0

F.H. THRUST BLOCKS SHALL BE A MIN. OF 1/4 CU. YD. IN MASS AND HAVE A MIN. BEARING AREA OF 5 SQ. FT.

AREAS GIVEN ARE BASED ON INTERNAL STATIC PRESSURE OF 100 P.S.I. AND SOIL BEARING CAPACITY OF 1,000 LBS. PER SQ. FT.  
AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING TABULATED VALUES BY A CORRECTION FACTOR "F"  
F = ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS. / ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.

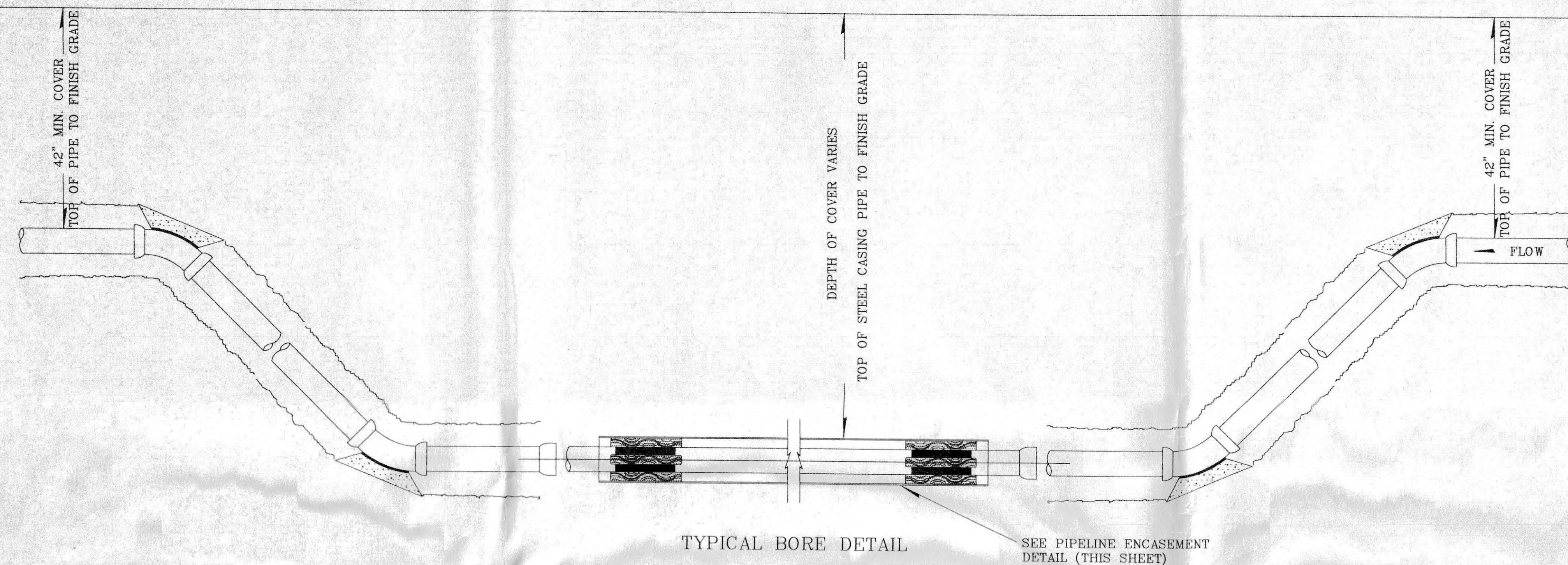
Revised All references to Flare type fittings changed to Mar 99 Compression type fittings

# Clifton Water District

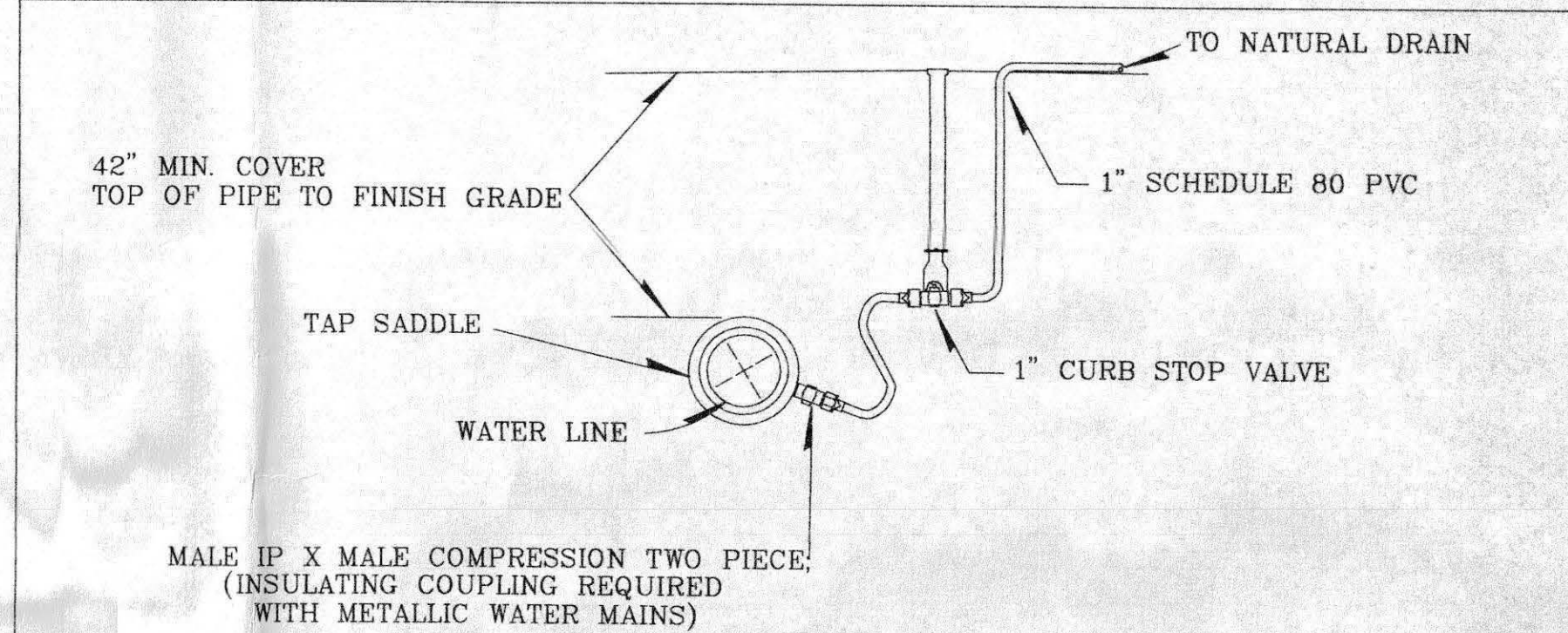
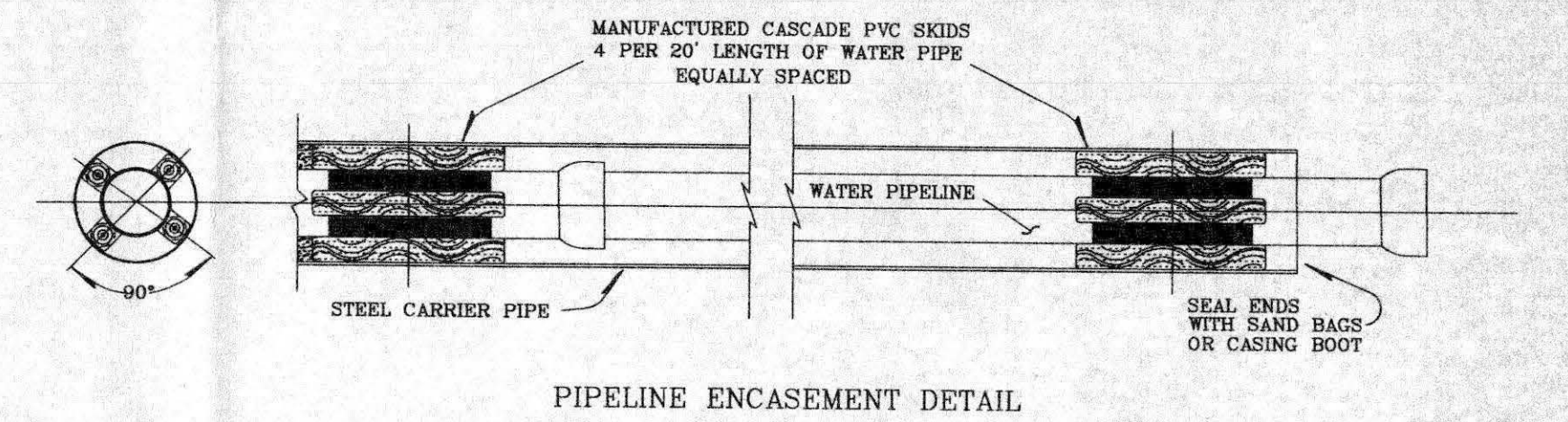
## Typical Water Line Installation Dtls., Sht. 1

Drw By	Chk By	App By	Date	Scale	Sheet
E.D.P.	D.E.T.		Sep 97	None	10 OF 12

03-079

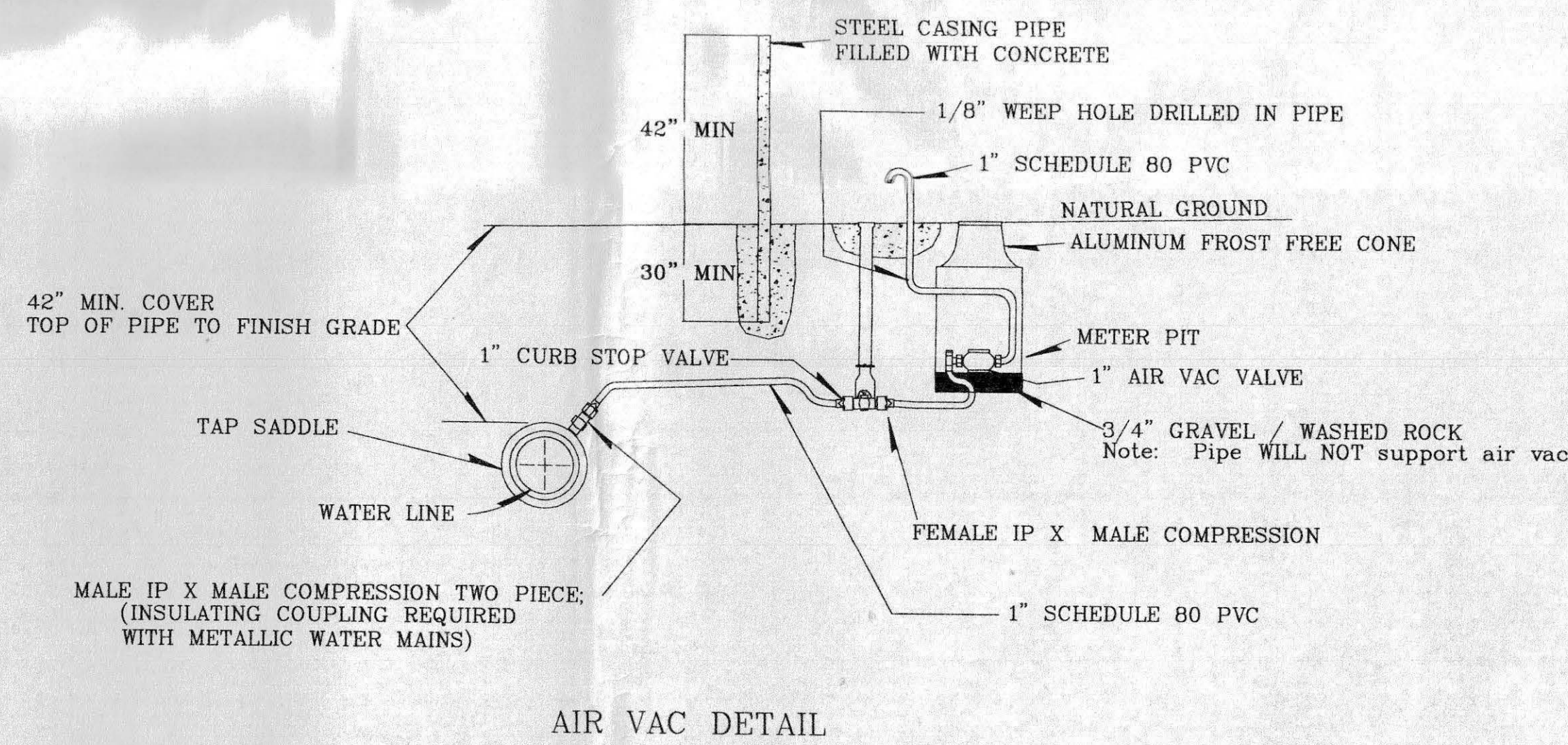
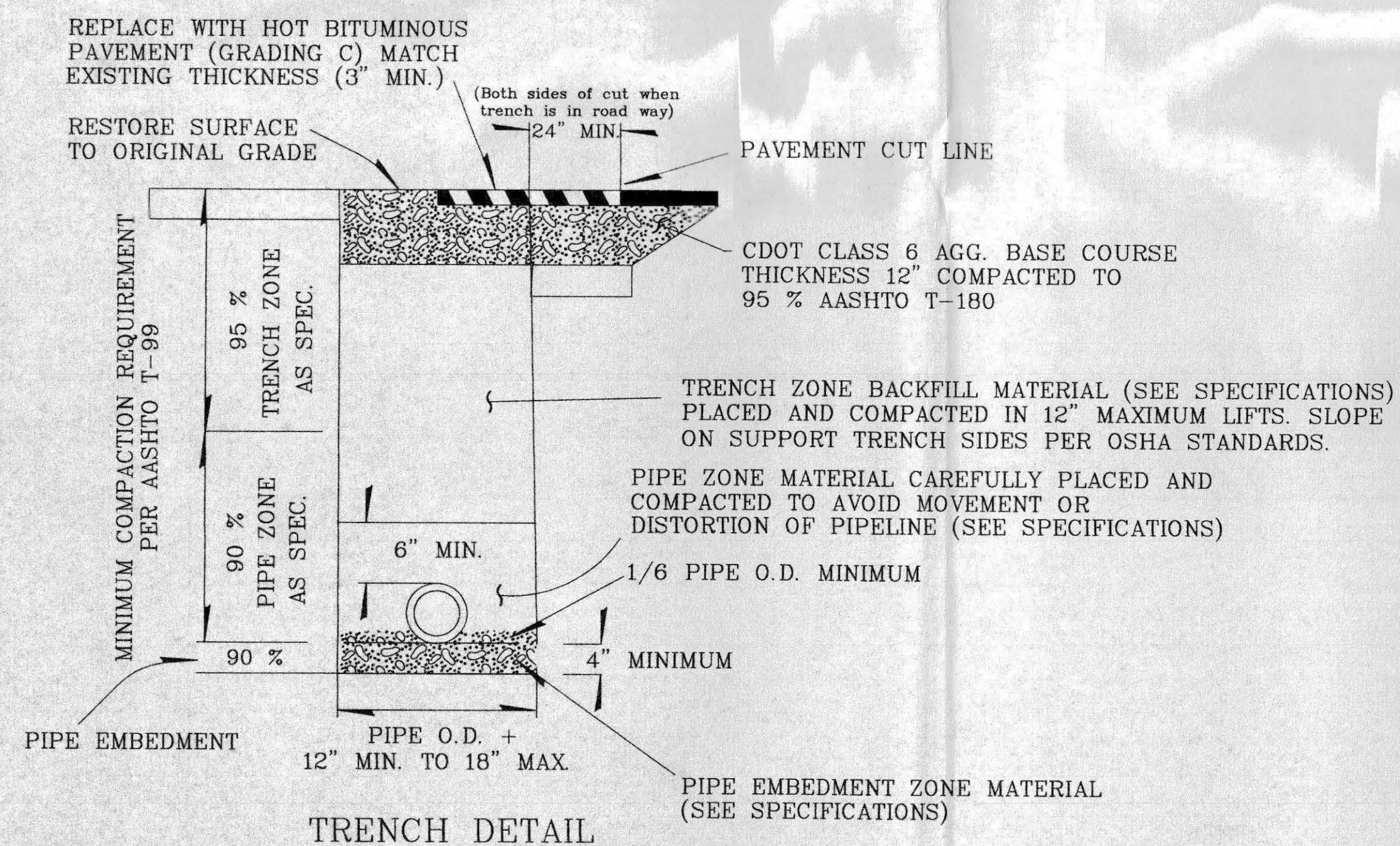


TYPICAL BORE DETAIL SEE PIPELINE ENCASMENT DETAIL (THIS SHEET)

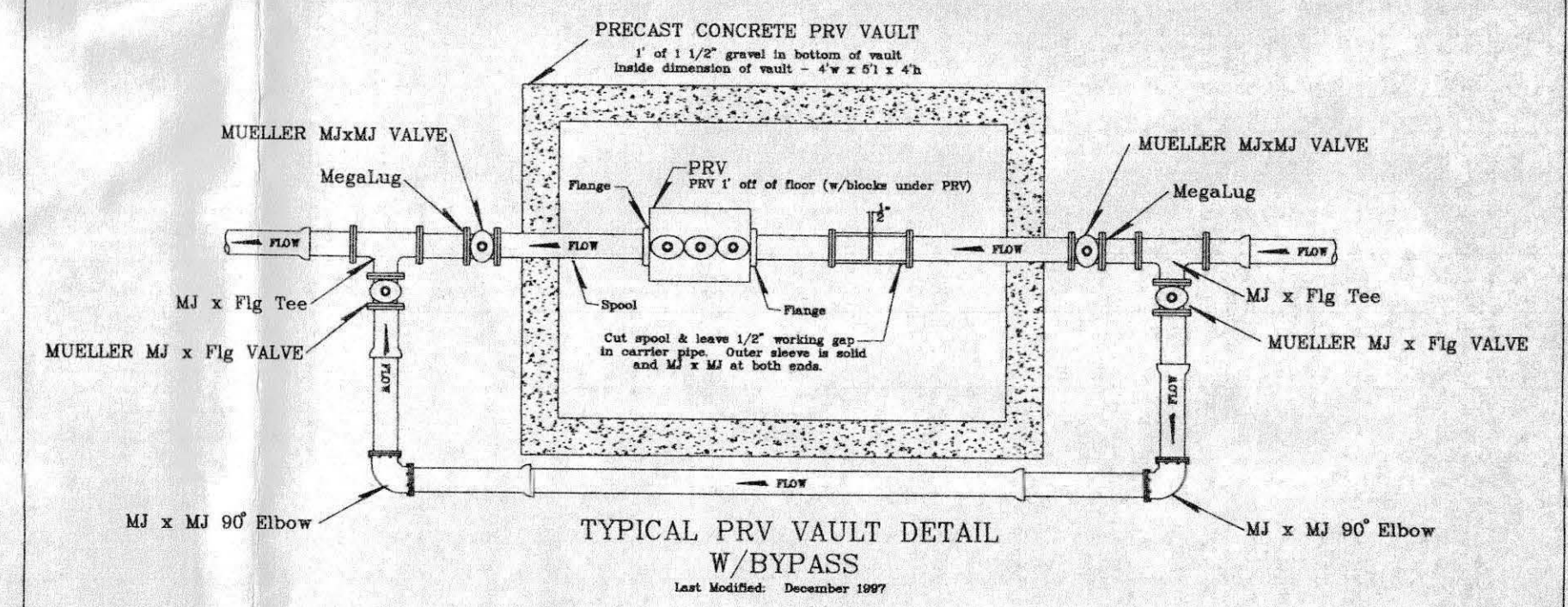


BLOW OFF DETAIL  
NOTE: UPGRADE ALL PVC/SADDLE/FITTINGS/VALVES TO 2" ON WATERLINES OF 6" AND GREATER

Note: Not all drawings on this typical will apply to every project



AIR VAC DETAIL



TYPICAL PRV VAULT W/BYPASS  
Last Modified: December 1997

Revised All references to Flare type fittings changed to Compression  
Mar 99 type fittings ... Air Vac detail modified slightly

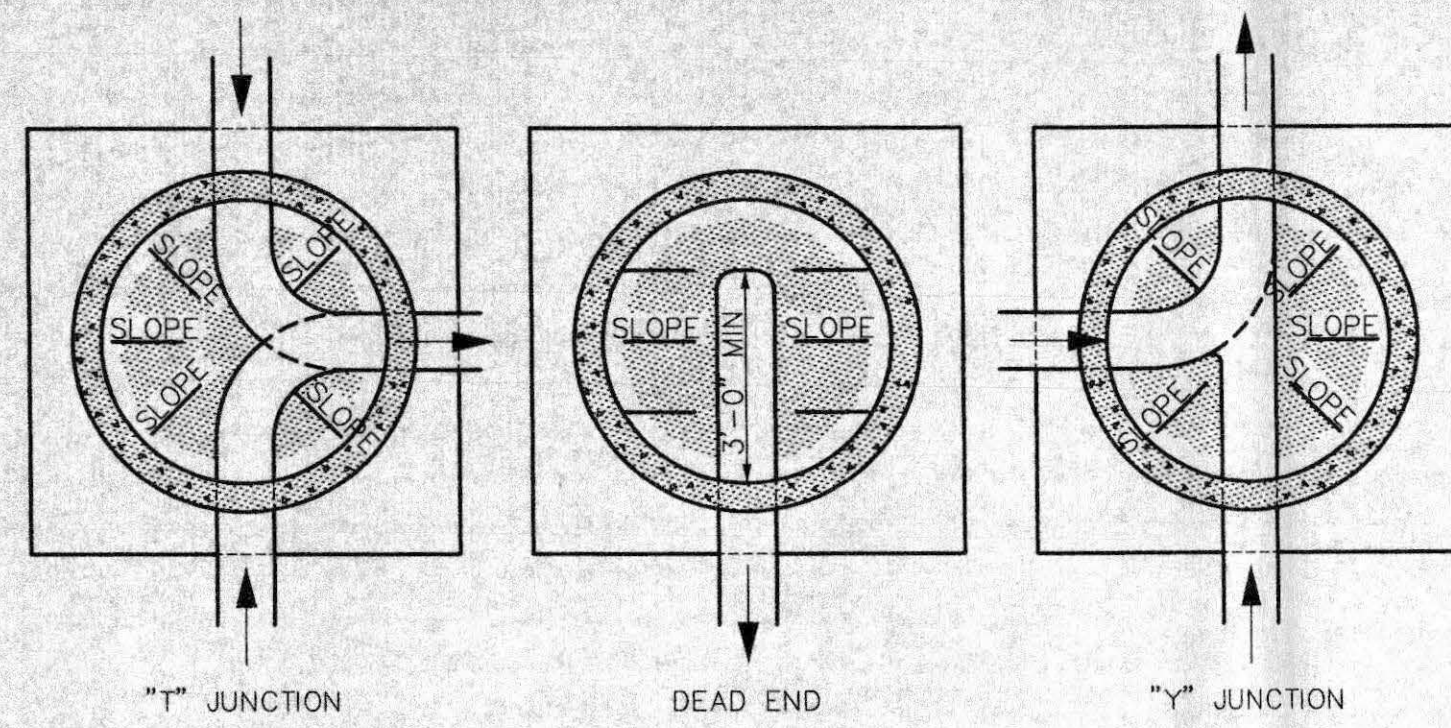
# Clifton Water District

## Typical Water Line Installation Dtls., Sht. 2

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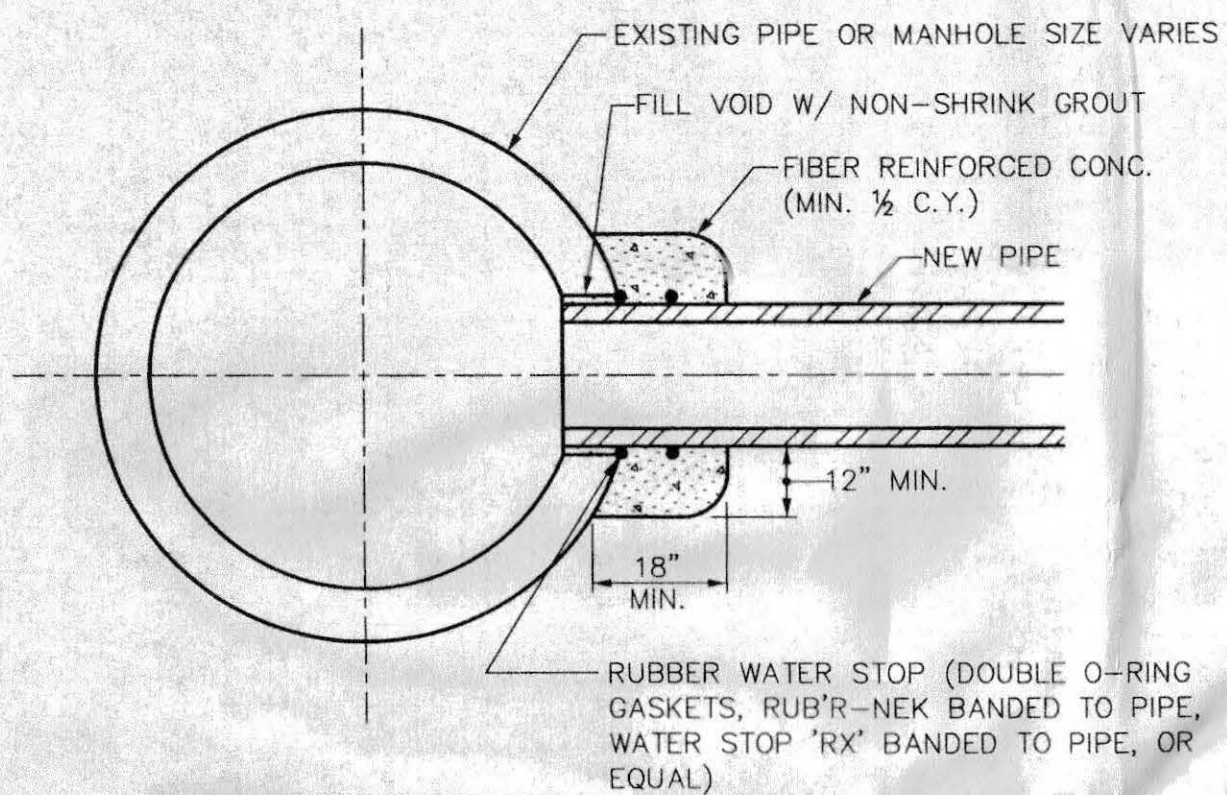
03-079





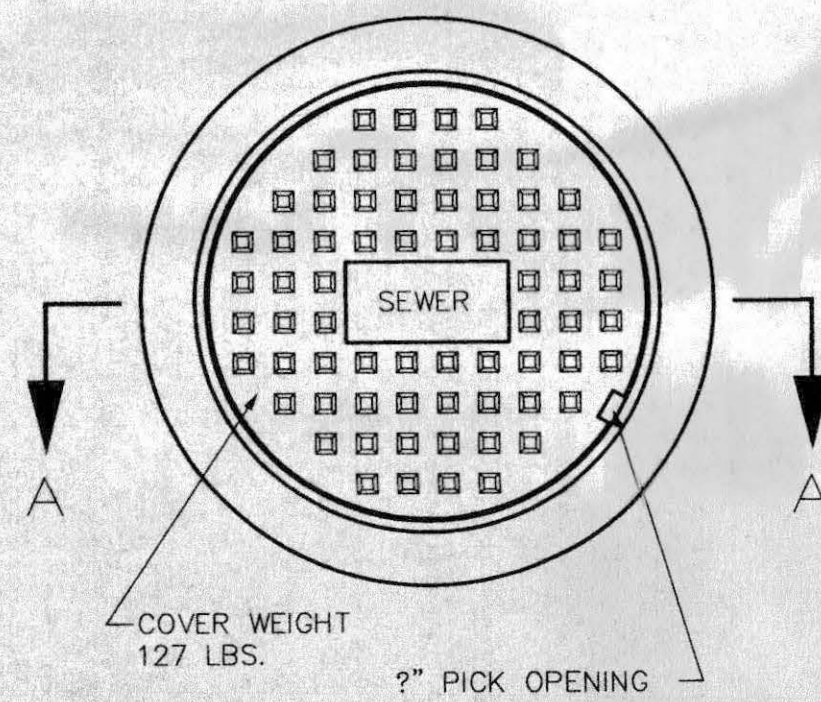
INVERTS SHALL BE FORMED TO PROVIDE A 24" MINIMUM APPROACH IN LINE WITH EACH PIPE FOR MAINTENANCE EQUIPMENT.

**SECTION B-B**

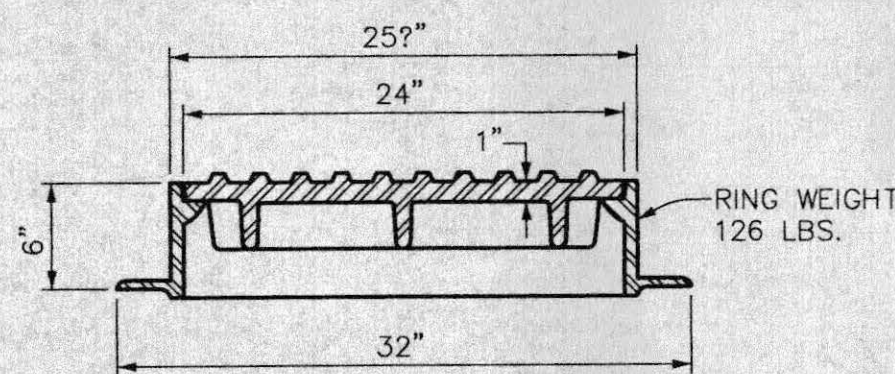


NOTE: IF THE HOLE IN THE EXISTING PIPE OR MANHOLE IS CORED, THE CONNECTION CAN BE MADE BY INSTALLING A FLEXIBLE PIPE TO MANHOLE CONNECTOR ("BOOT") AND THE CONCRETE ENCASEMENT ELIMINATED.

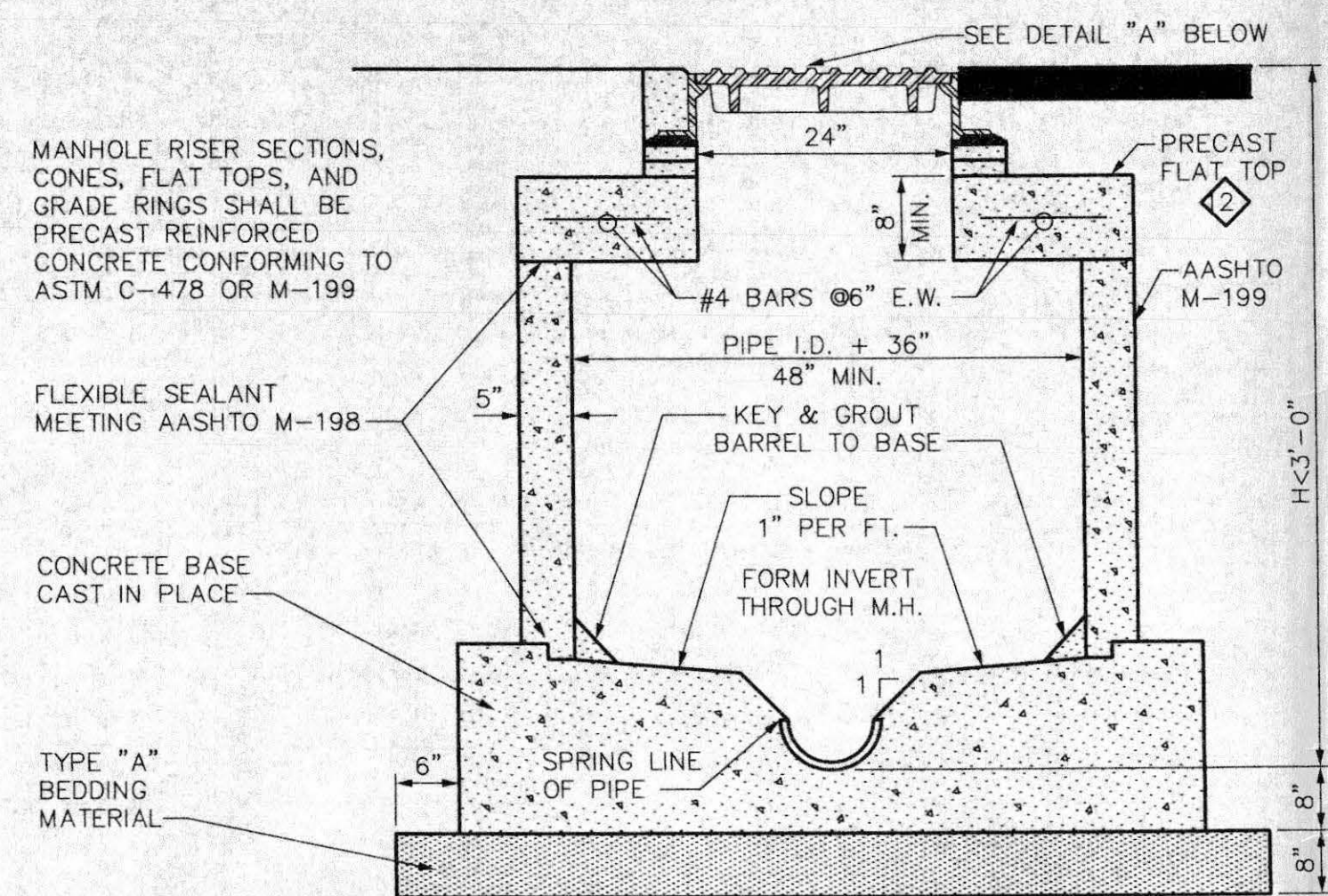
**CONNECTION TO EXISTING MANHOLE OR INLET BOX**



**STANDARD CAST IRON MANHOLE RING & COVER**



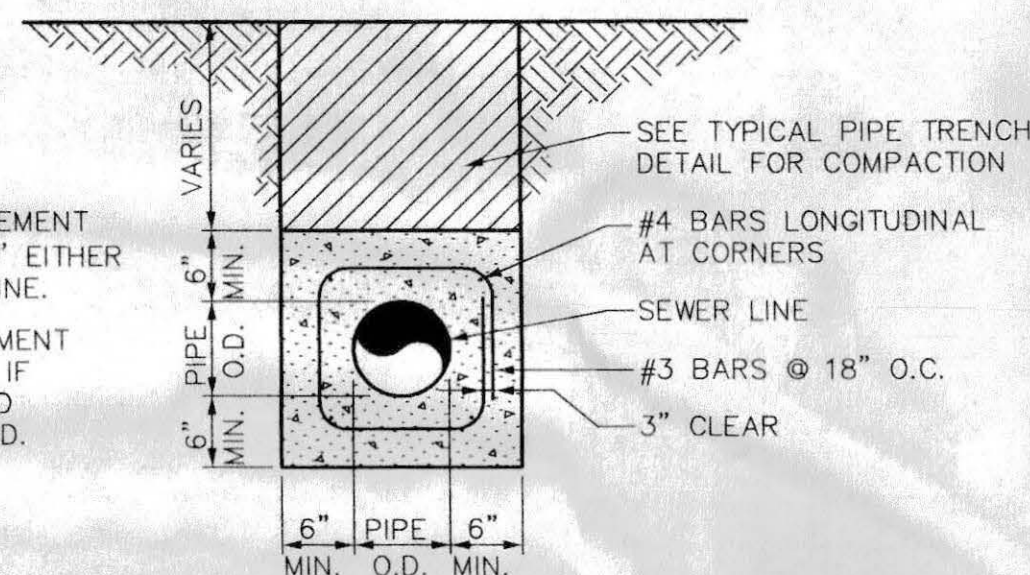
**SECTION A-A**



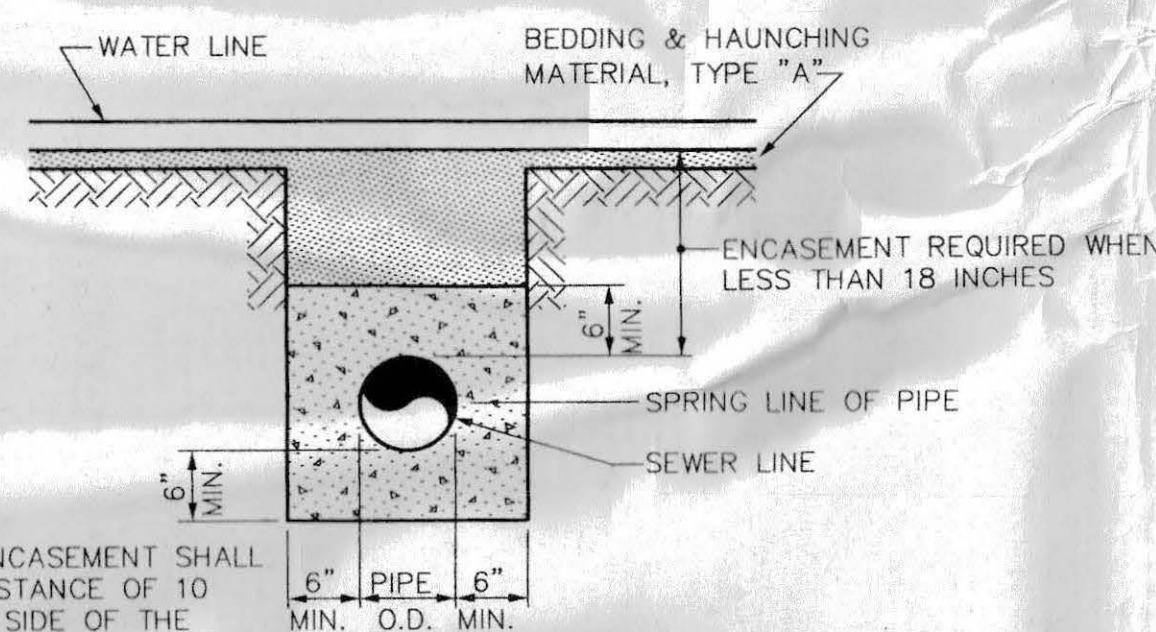
**STANDARD SHALLOW MANHOLE CAST-IN-PLACE BASE**

**NOTES**

- 1) CONCRETE ENCASEMENT SHALL EXTEND 10' EITHER SIDE OF WATER LINE.
- 2) STEEL REINFORCEMENT MAY BE DELETED IF FIBER-REINFORCED CONCRETE IS USED.

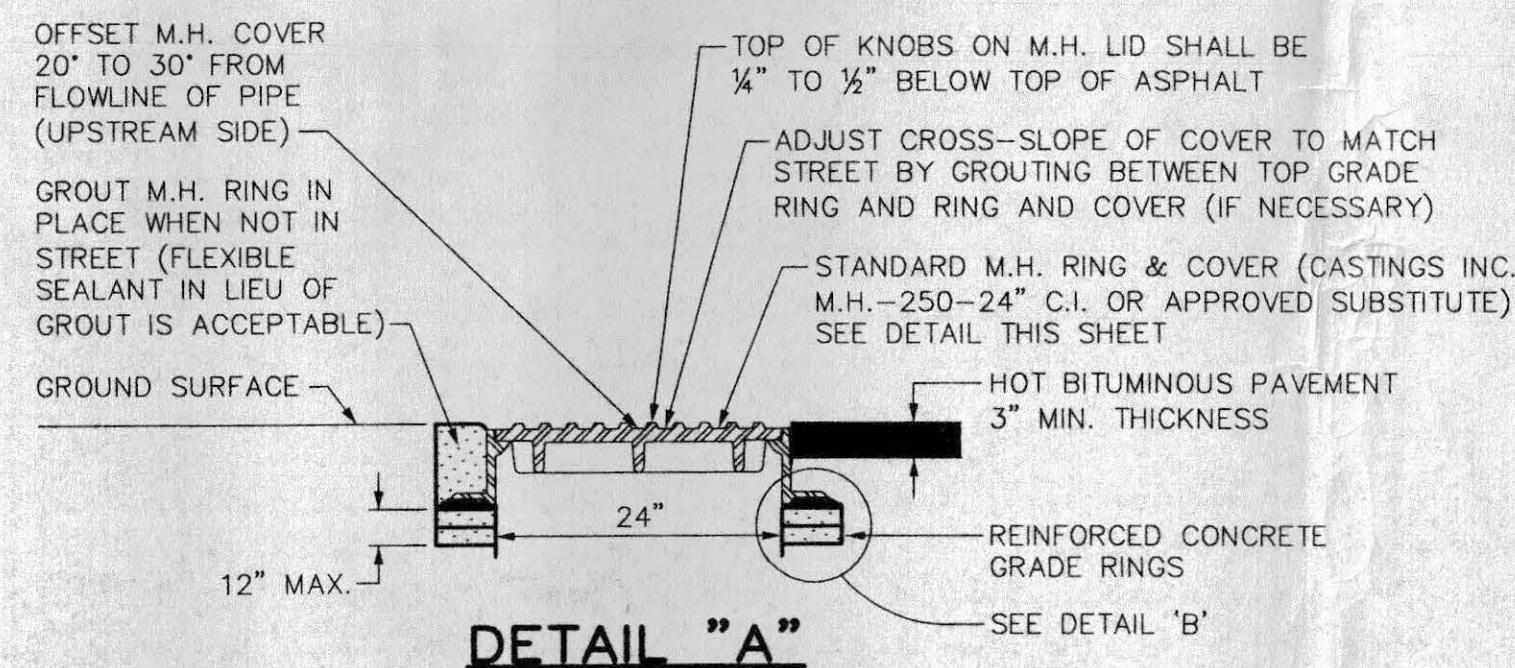


**WATER LINE BELOW SEWER LINE**

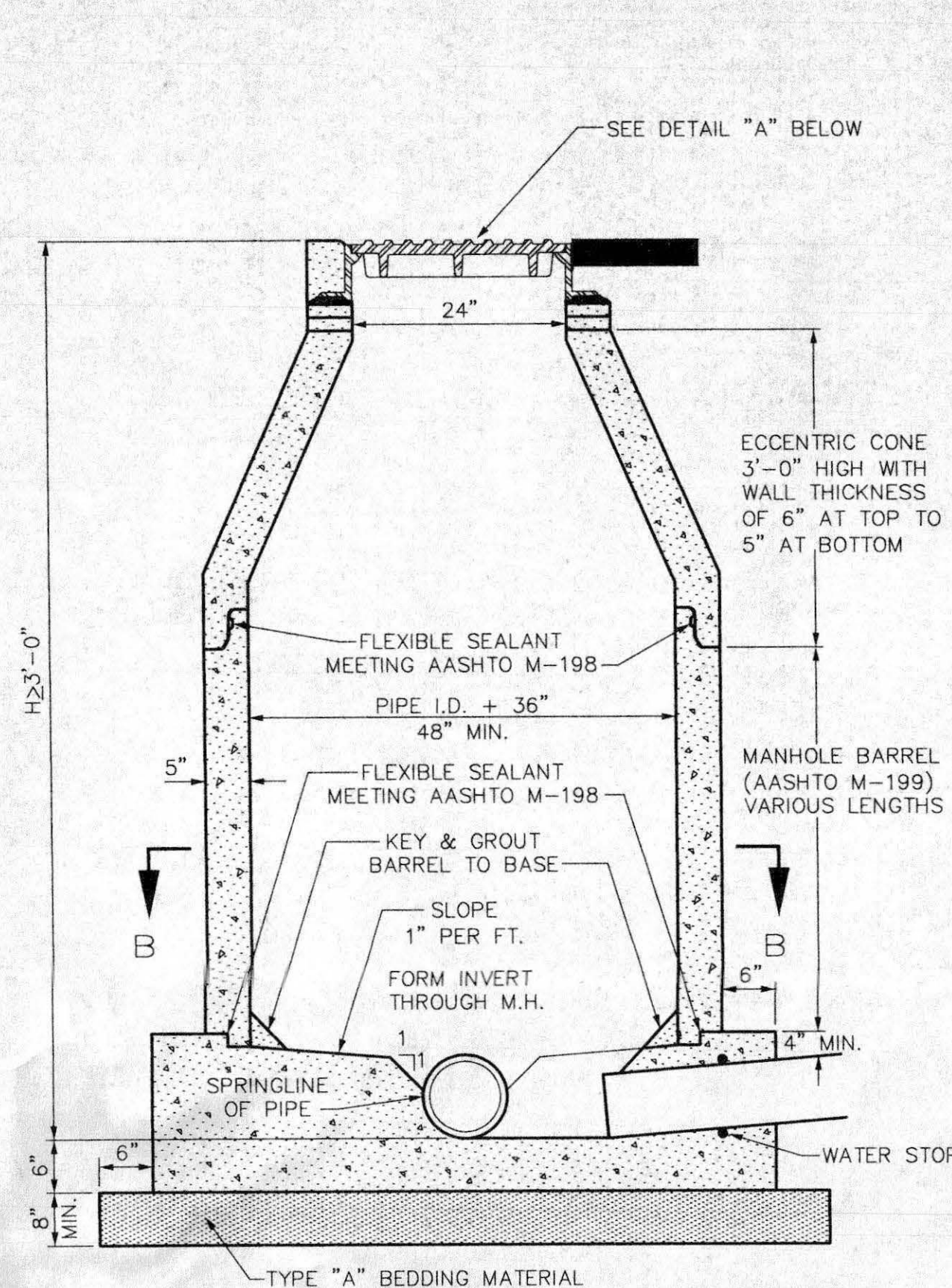


**WATER LINE ABOVE SEWER LINE**

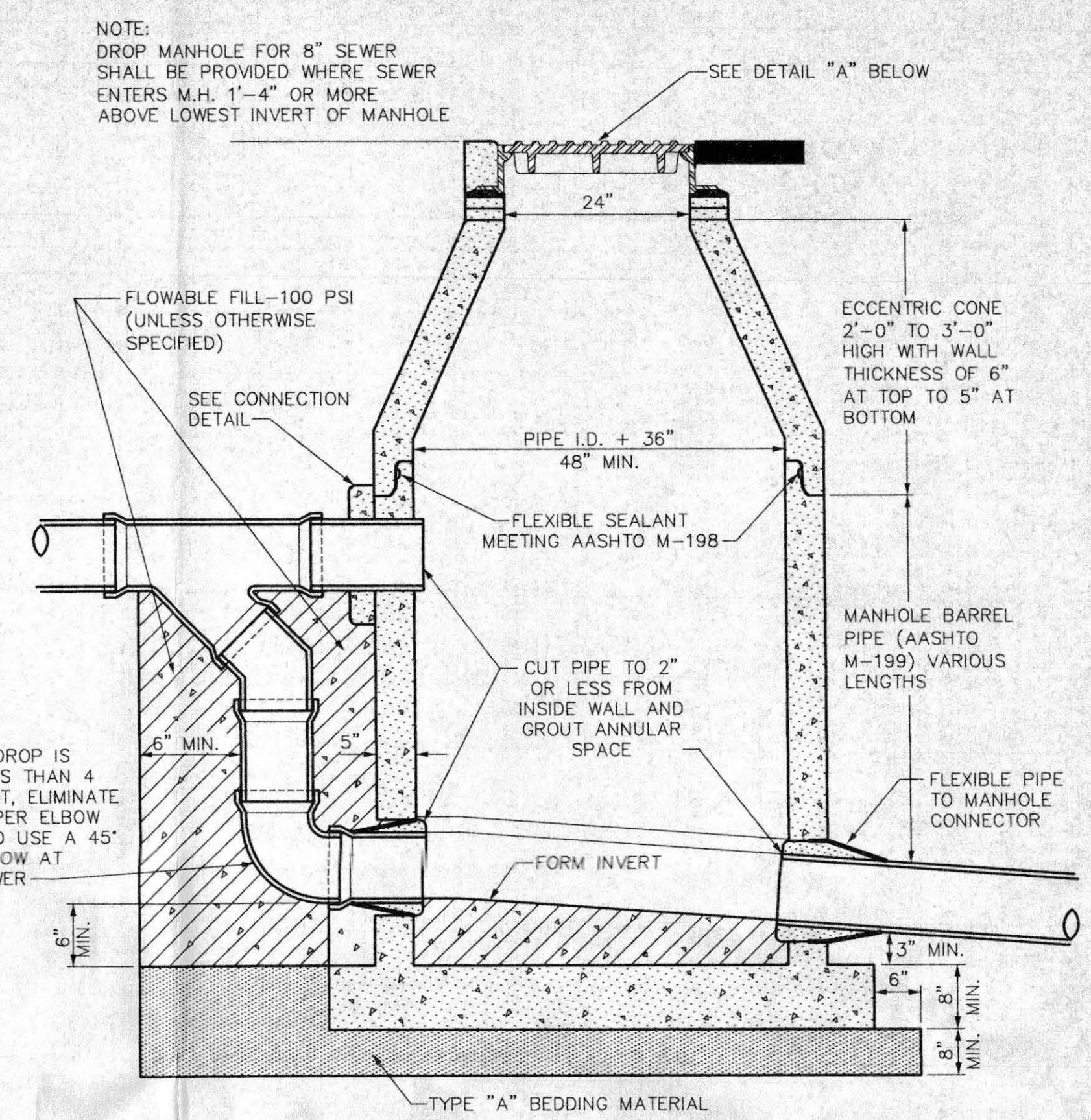
**CONCRETE ENCASEMENT DETAIL**



**DETAIL "A"**

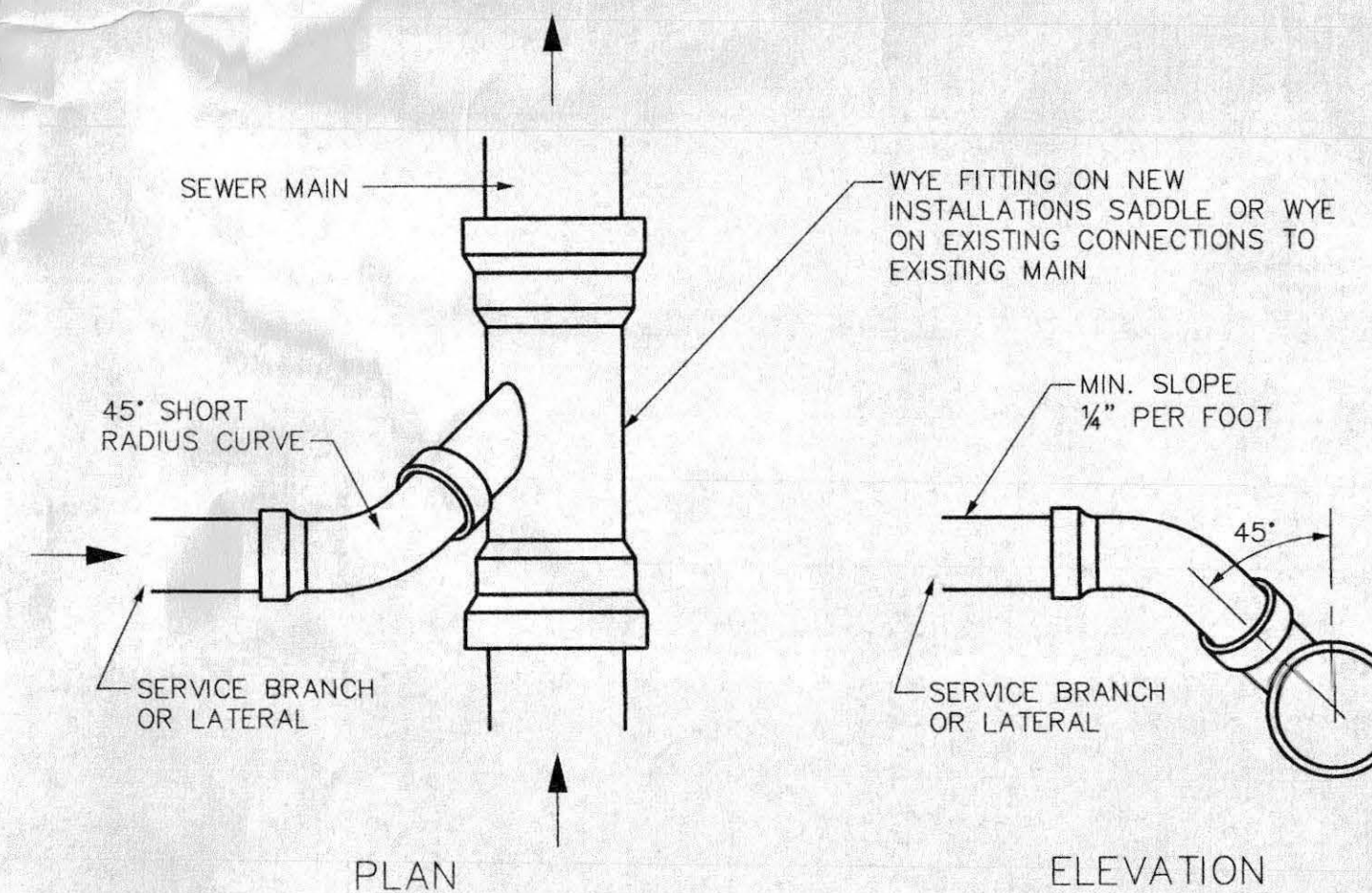


**STANDARD MANHOLE CAST-IN-PLACE BASE**

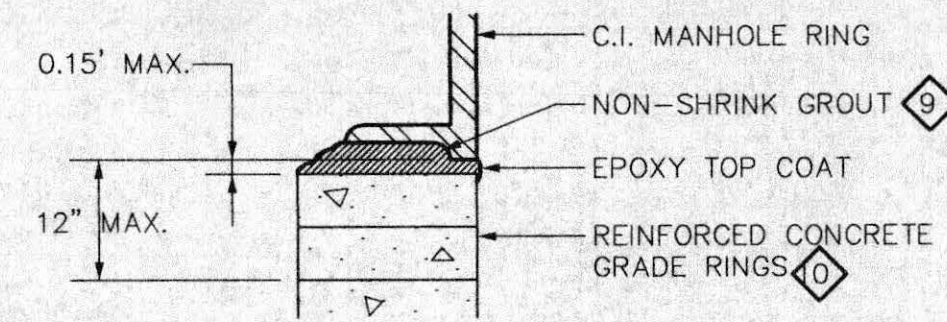


**DROP MANHOLE PRECAST BASE**

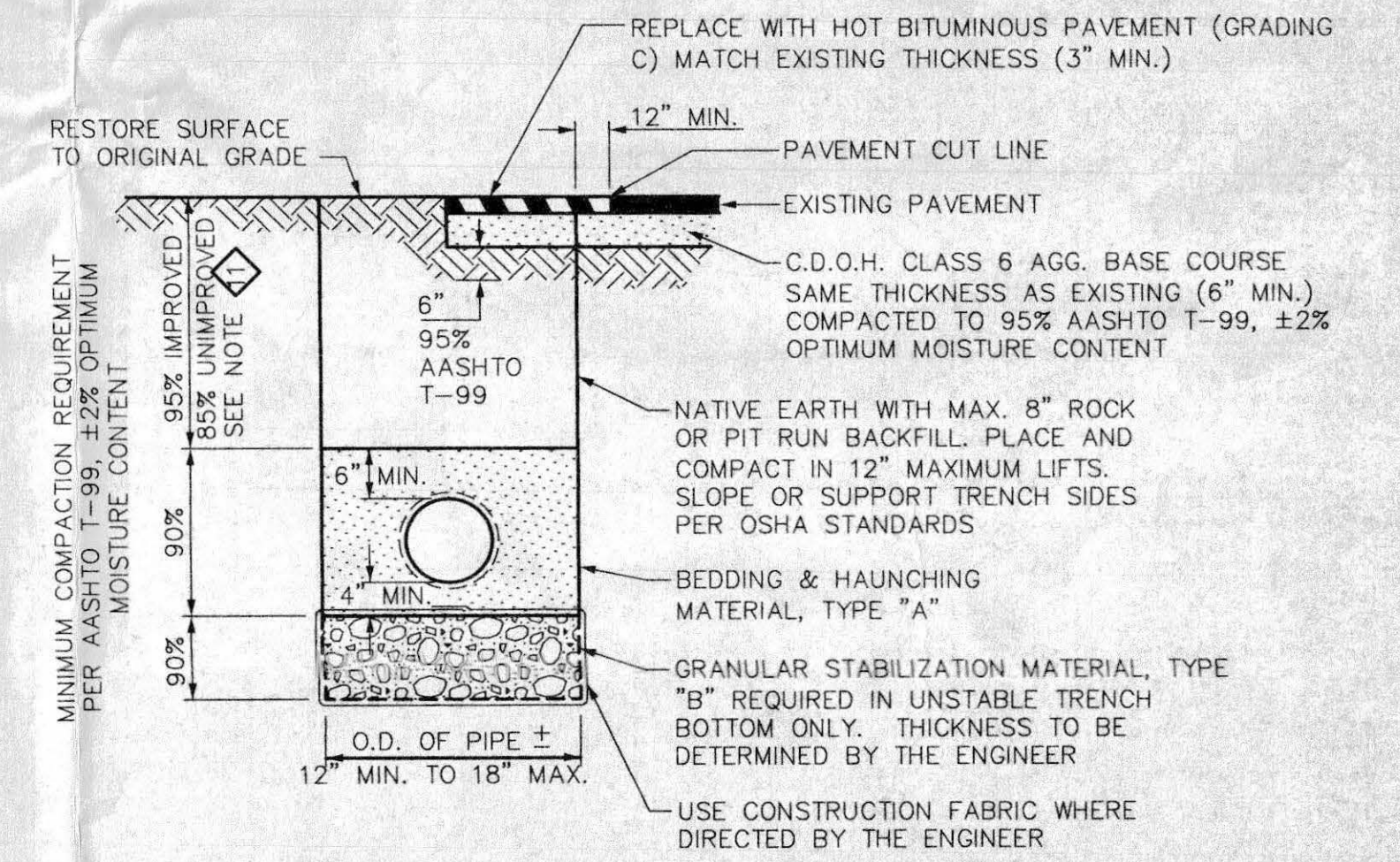
NOTE: PRECAST BASE AND FLEXIBLE PIPE CONNECTORS CAN BE USED IN LIEU OF CAST-IN-PLACE BASE FOR ALL MANHOLE TYPES



**TYPICAL SERVICE "Y" CONNECTION**



**DETAIL "B"**



**TYPICAL TRENCH DETAIL**

SIEVE SIZE	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES		
	PIPE BEDDING & HAUNCHING MATERIAL (TYPE A)	GRANULAR STABILIZATION MATERIAL (SCREENED OR CRUSHED ROCK TYPE B)	PIT RUN AGGREGATE (TO BE USED WHERE SPECIFIED OR DIRECTED BY THE ENGINEER)
8 INCH	---	---	100
2 INCH	---	---	100
3/4 INCH	100	---	---
NO 200	20 MAX	15 MAX	20 MAX

ALL BACKFILL MATERIAL SHALL BE PLACED FULL WIDTH IN 12" MAX. LIFTS AND COMPACTED TO THE MIN. RELATIVE DENSITIES SHOWN

**GENERAL NOTES**

1. Concrete shall be Colorado Division of Highways Class 'B' (Section 601.02).
2. All cement used in mortar, concrete bases, grade rings, riser sections, cones, and flat tops, for sanitary sewer manholes, shall be Type 'V' or modified Type II Portland Cement with less than 5% tricalcium aluminate.
3. Manhole riser sections, cones, flat tops, and grade rings shall be precast reinforced concrete conforming to ASTM C-478 or AASHTO M-199.
4. Backfill around manholes and other structures shall be placed in 8" max. lifts and compacted to 95% AASHTO T-99.
5. All work shall be in accordance with approved plans and District specifications.
6. Manhole cone and flat top sections shall be positioned such that the manhole ring and cover are offset 20 degrees to 30 degrees from the upstream main sewer line into the manhole.
7. Manhole steps shall be installed in vertical alignment with the ring and cover.
8. Refer to Plans or Specifications for any manhole waterproofing and/or corrosion protection that may be required for the project.
9. Manhole ring and cover can be set to finished grade, using non-shrink grout to adjust rim elevation. Grout shall not exceed 0.15 ft. thickness and shall have a finish coat of epoxy applied to all grout surfaces exposed to the interior of the manhole. Epoxy top coat requirement may be deleted provided non-shrink grout is installed in accordance with manufacturers recommendations and instructions and is acceptable to the Engineer.
10. Precast concrete grade rings are to be used for grade adjustment on all new manholes. Paving rings are not allowed for grade adjustment unless otherwise approved by the District Engineer.
11. Minimum trench compaction requirements:
  - 95% in all areas of public or street right-of-ways including trenches beneath pavement, graded areas, borrow ditches, and open space.
  - 85% or to match existing (whichever is greater) in unimproved or landscaped areas, fields, or private easements that are not within road or street right-of-ways.
  - Flat lid slabs are allowed only when the shortest precast eccentric cone is too tall or as required by the Plans.

SCALE:	HORIZONTAL	N.T.S.
	VERTICAL	N.T.S.
REVISIONS	DATE	
REVIEW	01-2002	

**WestWater Engineering**  
 2516 Foresight Circle, #1  
 Grand Junction, CO 81505  
 (970) 241-7076

**CENTRAL GRAND VALLEY SANITATION DISTRICT**  
**SANITARY SEWER DETAILS**

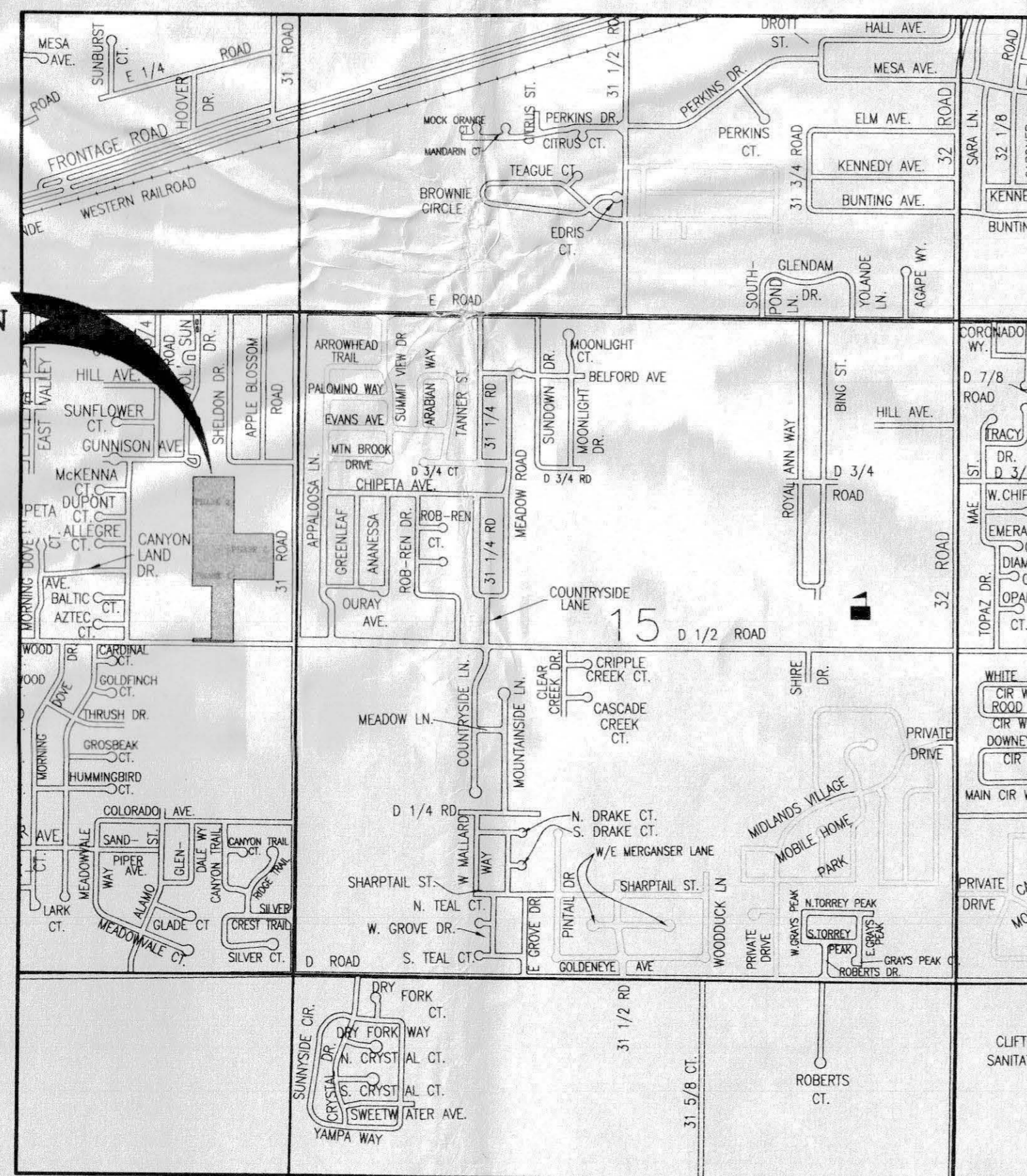
Design by:	Drafted by:	Date:	Project No.:	Sheet
	WWE	6/26/02	545-001	12 of 12

# G & R WEST, LLC

2650 El Corona Drive  
Grand Junction, Co. 81501  
PH. (970) 255-8164

FINAL CONSTRUCTION PLANS  
FOR  
**DAKOTA WEST**  
**SUBDIVISION (FILING 2)**  
SUBMITTED  
**JUNE 25, 2003**

PROJECT LOCATION



VICINITY MAP

## TITLE

SHEET 1 OF 12	COVER SHEET/LOCATION MAP
SHEET 2 OF 12	GENERAL LEGEND AND CONSTRUCTION NOTES
SHEET 3 OF 12	UTILITY/COMPOSITE PLAN
SHEET 4 OF 12	GRADING & DRAINAGE PLAN
SHEET 5 OF 12	STORM WATER MANAGEMENT PLAN
SHEET 6 OF 12	BISMARCK STREET/MANDAN LANE PLAN AND PROFILE
SHEET 7 OF 12	ABERDEEN LANE/WASHBURN STREET PLAN AND PROFILE
SHEET 8 OF 12	LINE "D" SANITARY SEWER PLAN & PROFILE
SHEET 9 OF 12	LINE "E" SANITARY SEWER PLAN & PROFILE
SHEET 10 OF 12	CLIFTON WATER DETAIL SHEET 1
SHEET 11 OF 12	CLIFTON WATER DETAIL SHEET 2
SHEET 12 OF 12	CENTRAL GRAND VALLEY SANITATION DISTRICT DETAILS

THOMPSON-LANGFORD CORP.  
529 25 1/2 RD., SUITE B210  
GRAND JUNCTION, COLORADO  
PH. (970) 243-6067

JOB NO. 0543-001

*Rnd 3*  
*OK*  
*CC*  
*6/25/03*

RECEIVED  
JUN 25 2003  
COMMUNITY DEVELOPMENT  
DEPT.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE. <small>Acceptance of these plans does not relieve the developer, contractor, or engineer from conformance with the City of Grand Junction Standard Specifications for Road and Bridge Construction.</small>	
City of Grand Junction Engineering Division Representative _____	Date _____
ACCEPTED AS CONSTRUCTED	
CITY OF GRAND JUNCTION ENGINEERING	
City of Grand Junction Engineering Division Representative _____	Date _____

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