

CITY OF GALLUP, NEW MEXICO

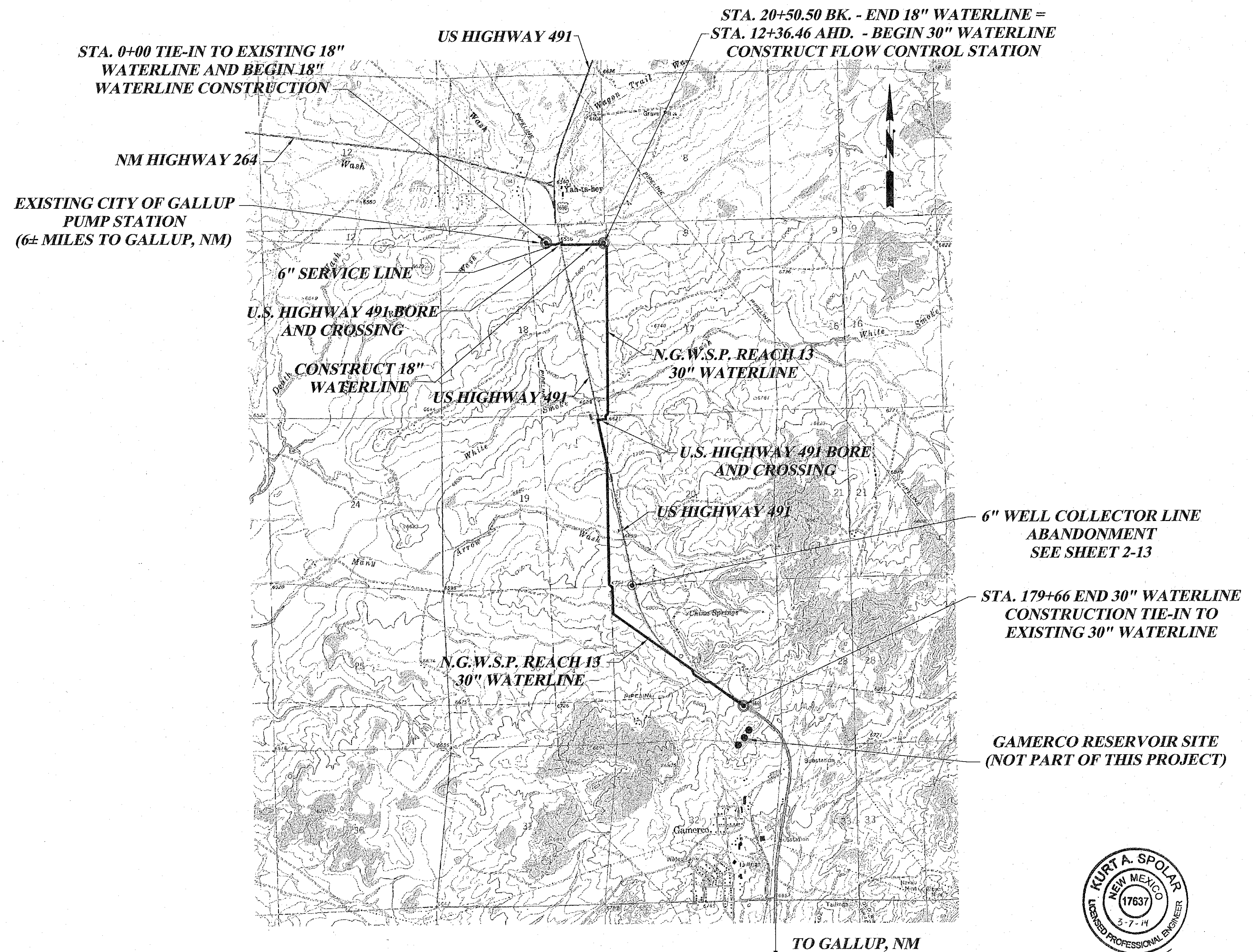
NAVAJO GALLUP WATER SUPPLY PROJECT

REACH 13

*F UNDED BY: THE WATER TRUST BOARD THROUGH THE NEW MEXICO FINANCE AUTHORITY, WTB #247
AND U.S. BUREAU OF RECLAMATION COOPERATIVE AGREEMENT NO. R11AC40002 AND THE CITY OF GALLUP*

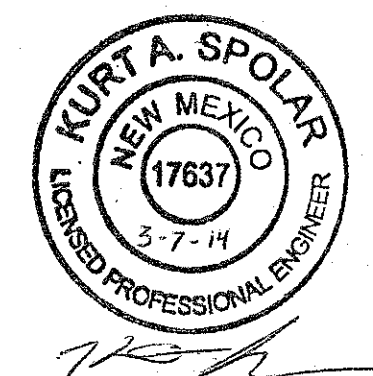
FORMAL BID NO. 1402

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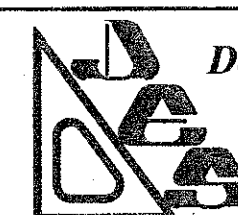
**NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13 - 18" & 30" WATERLINES**

SCALE: 1"=2000'
APPROXIMATE



CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.



DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505) 863-5440 WWW.DEPAULIENGINEERING.COM



for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

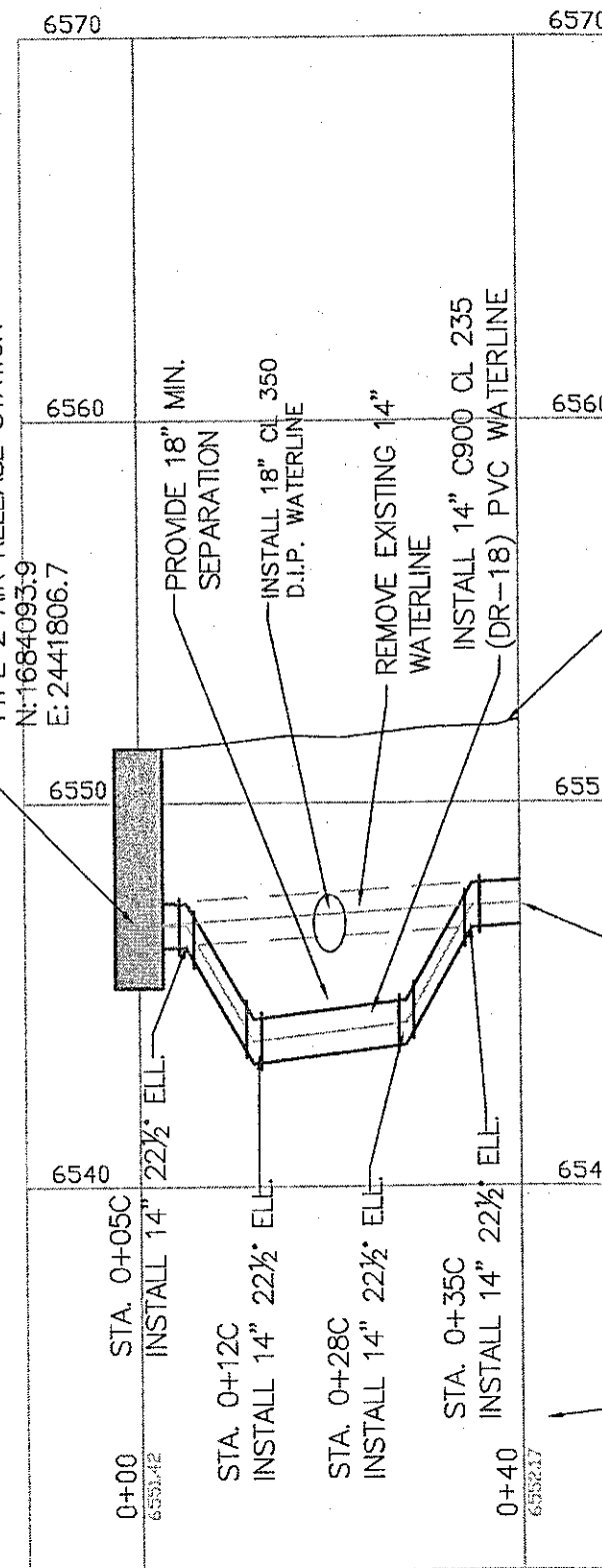
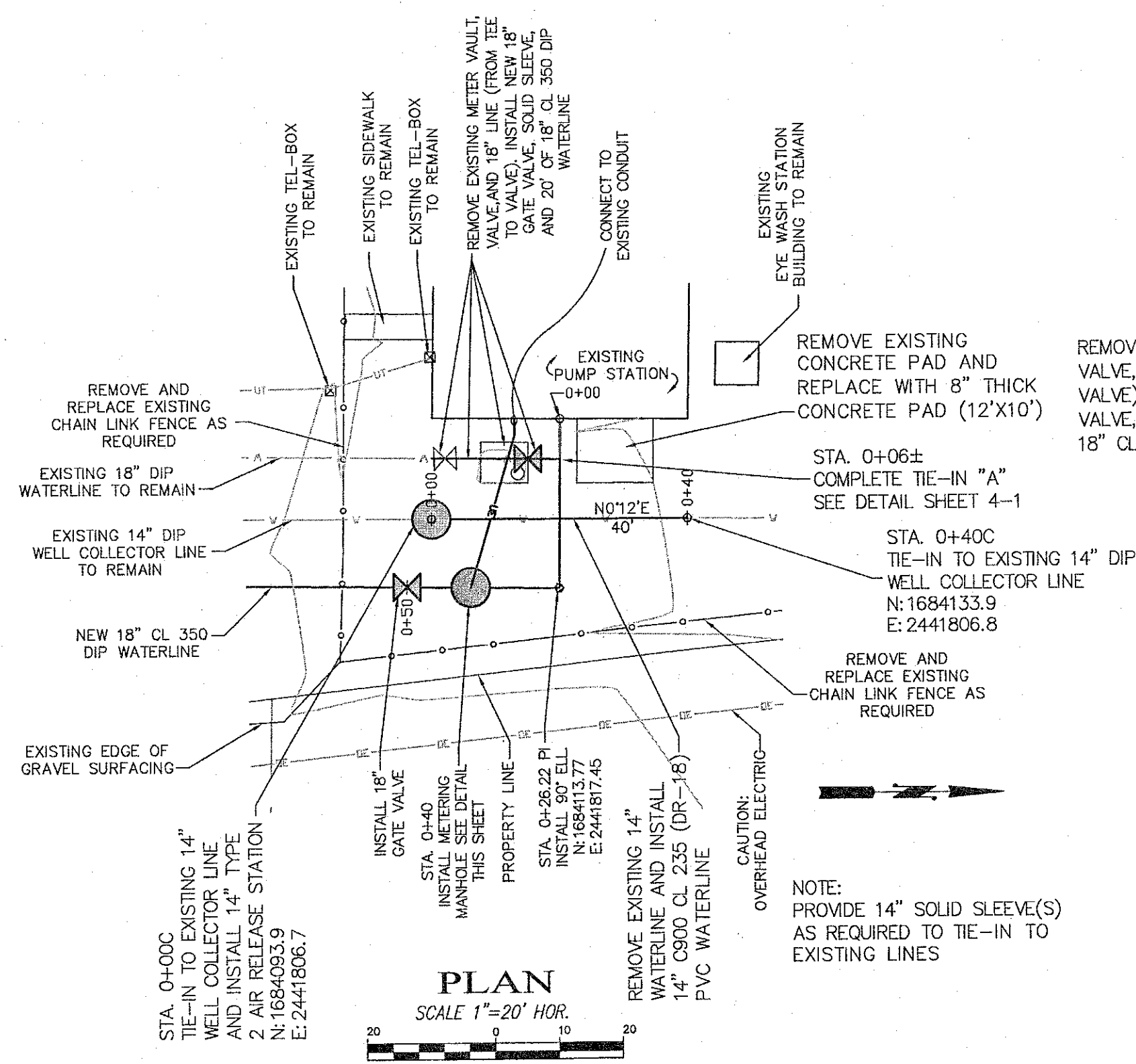
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

TITLE SHEET

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

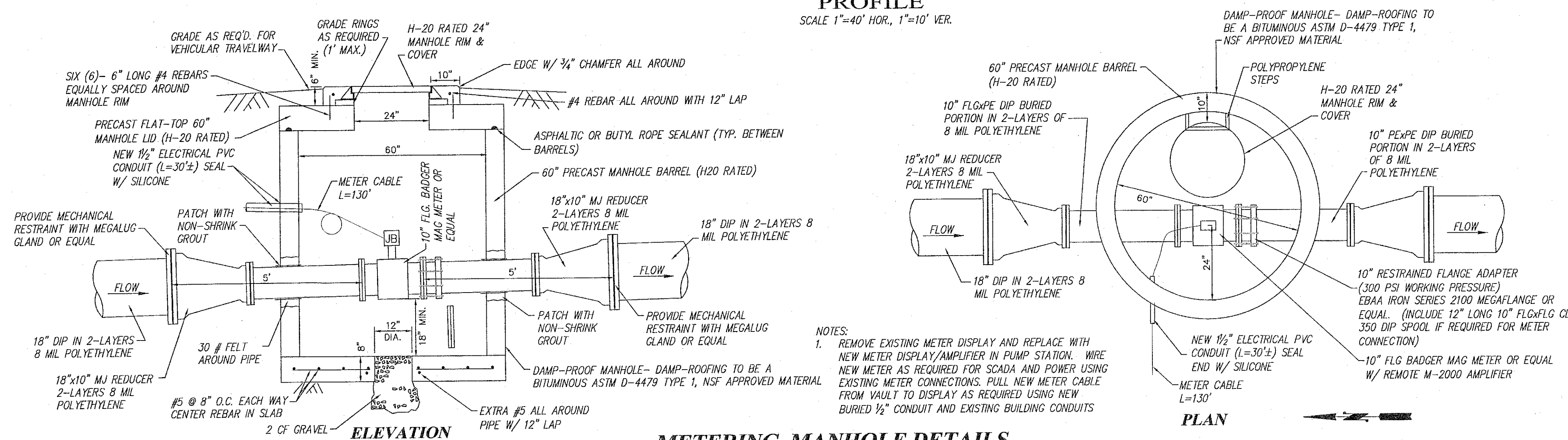
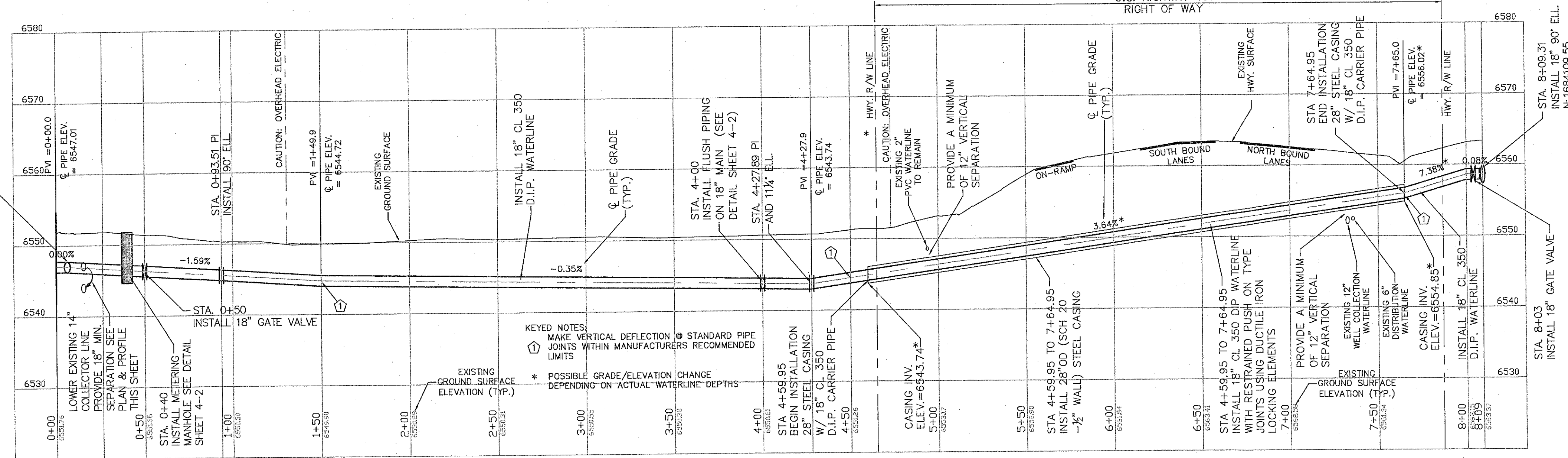
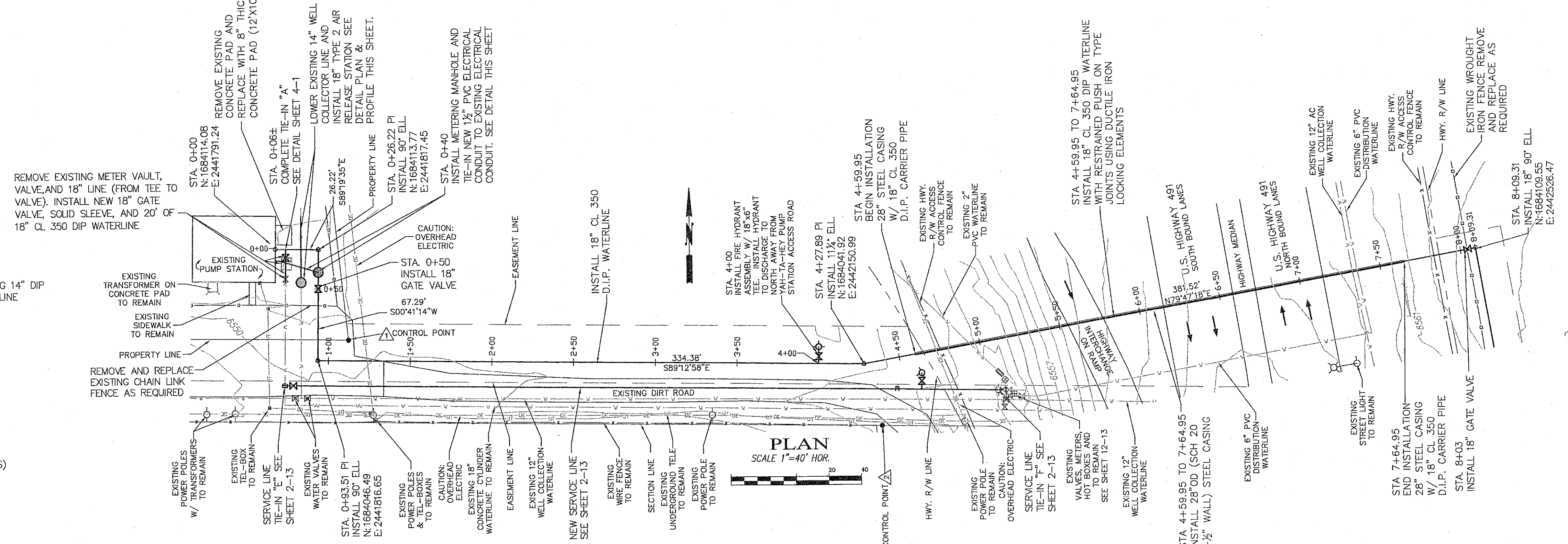
SHEET
1-1



14" WELL COLLECTOR LINE RELOCATION (LOWERING) SCALE 1"=20' HOR., 1"=5' VER.

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METERING MANHOLE DETAILS

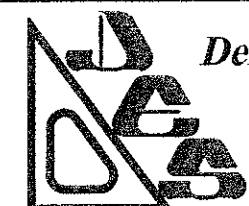
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

18" PLAN & PROFILE
STA 0+00 TO STA 8+09.31

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2-1

ENGINEER: C:\Users\Public\Documents\Engineering\Project 8\proj8.dwg



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- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
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for the
CITY OF GALLUP
McKinley County, New Mexico

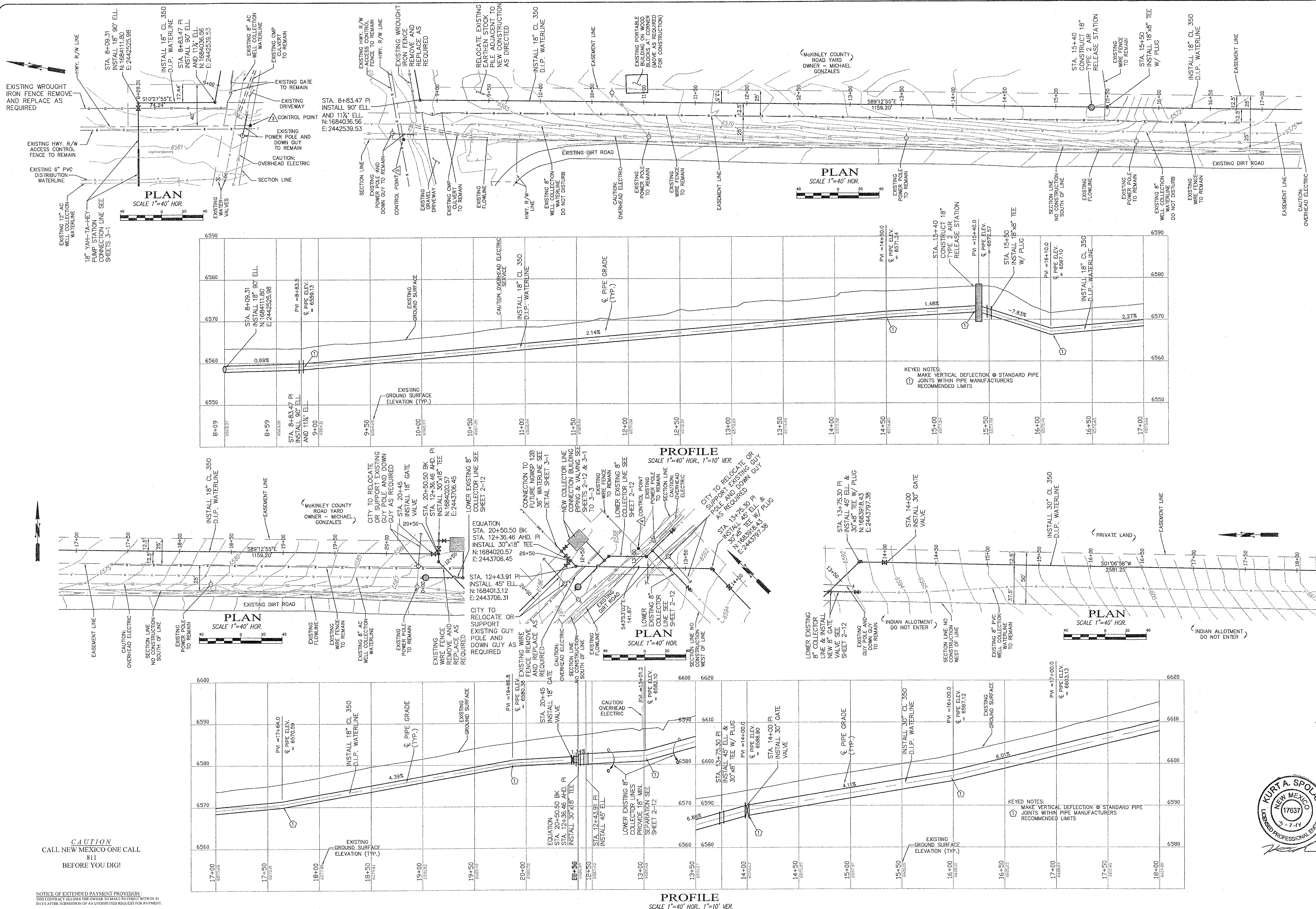
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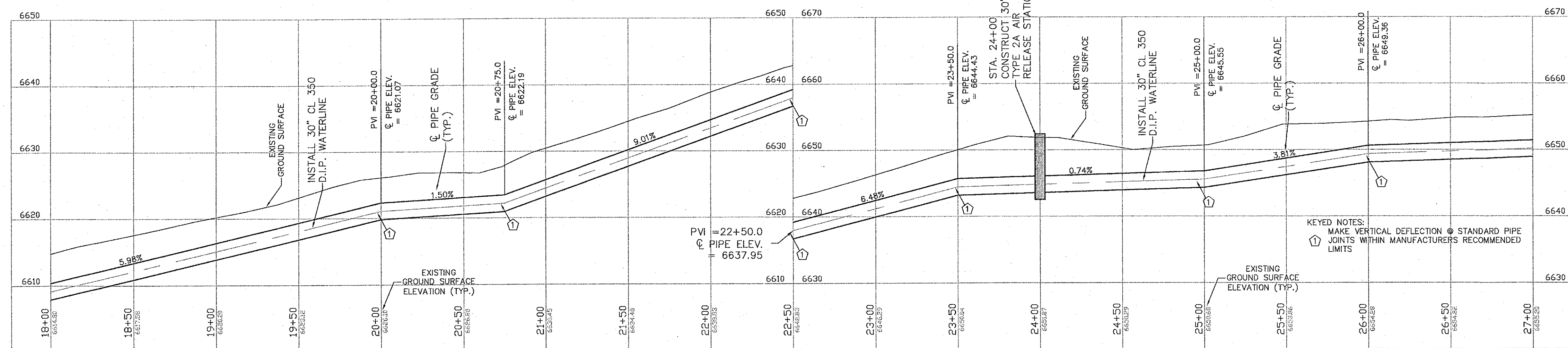
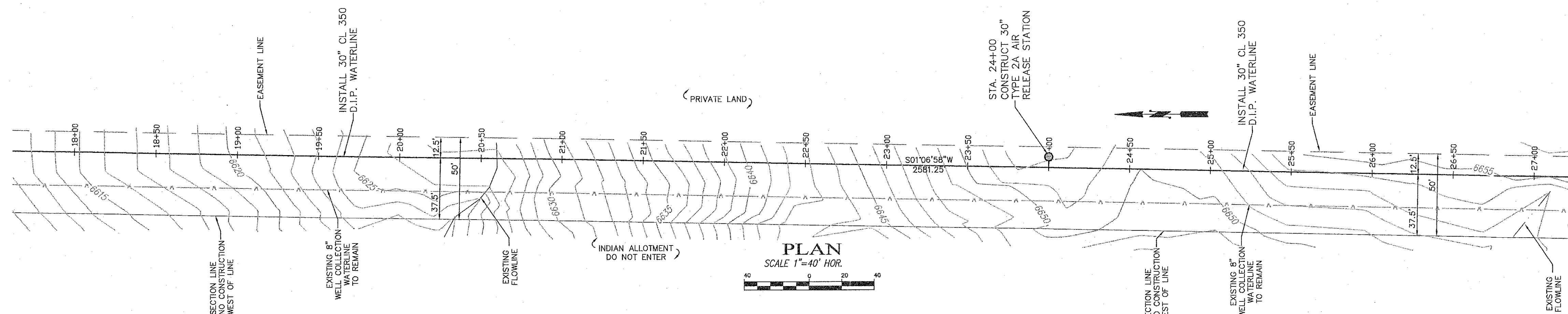
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

18" & 30" PLAN & PROFILE
STA 8+09.31 TO STA 18+00

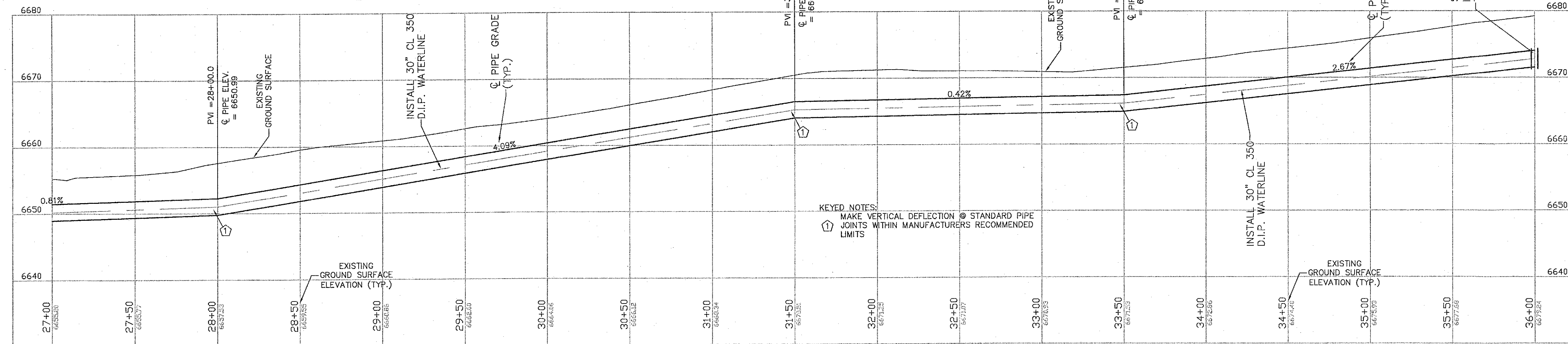
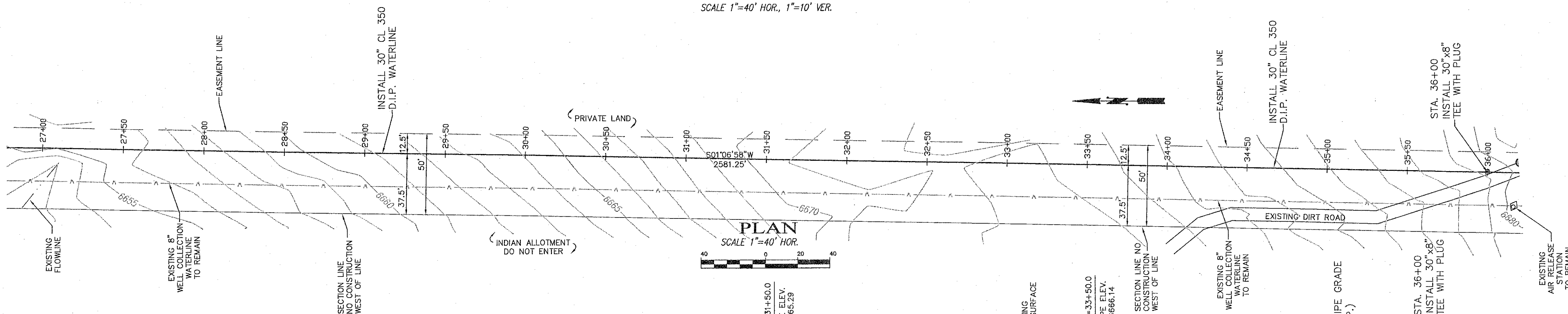
SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 2





PROFILE
SCALE 1"=40' HOR., 1"=10' VER.



PROFILE
SCALE 1"=40' HOR., 1"=10' VER.

CAUTION
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McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

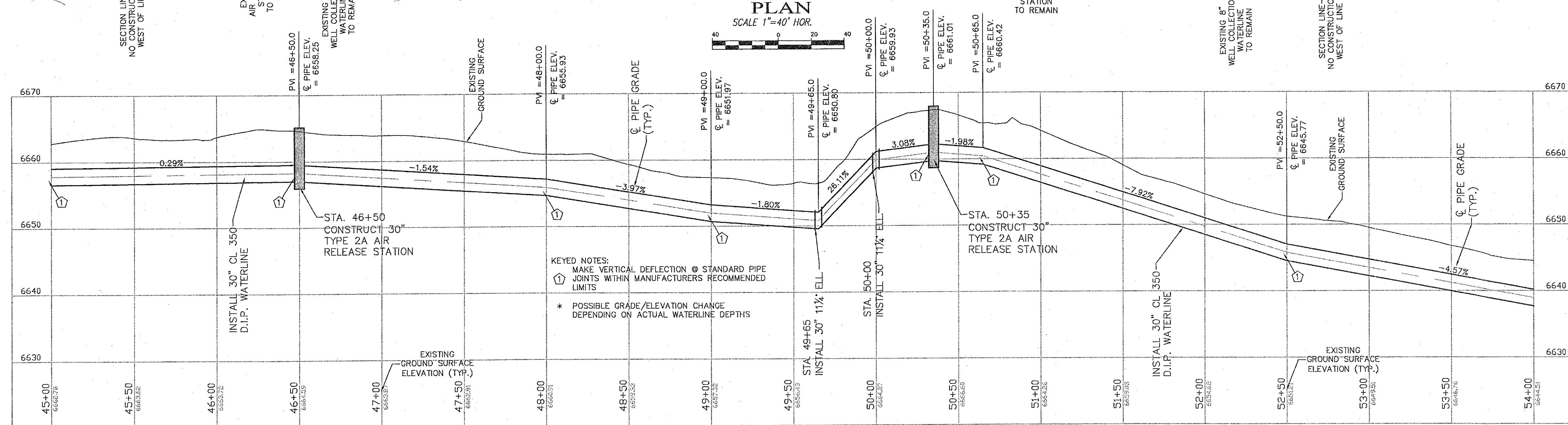
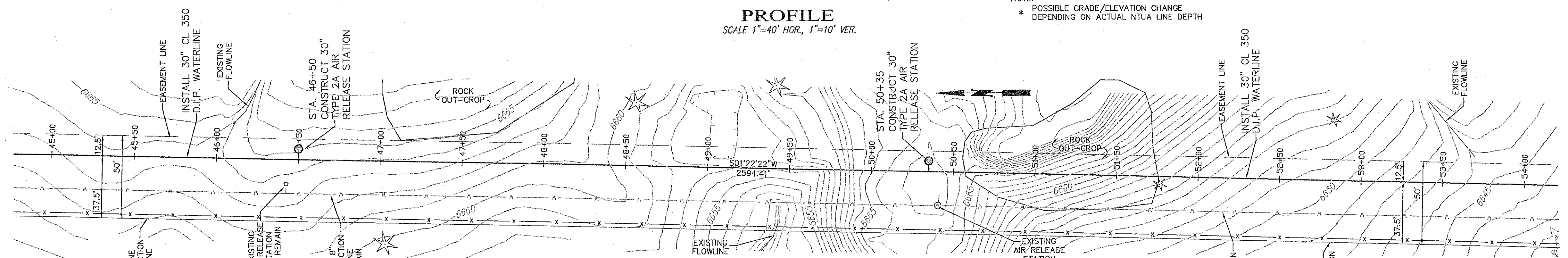
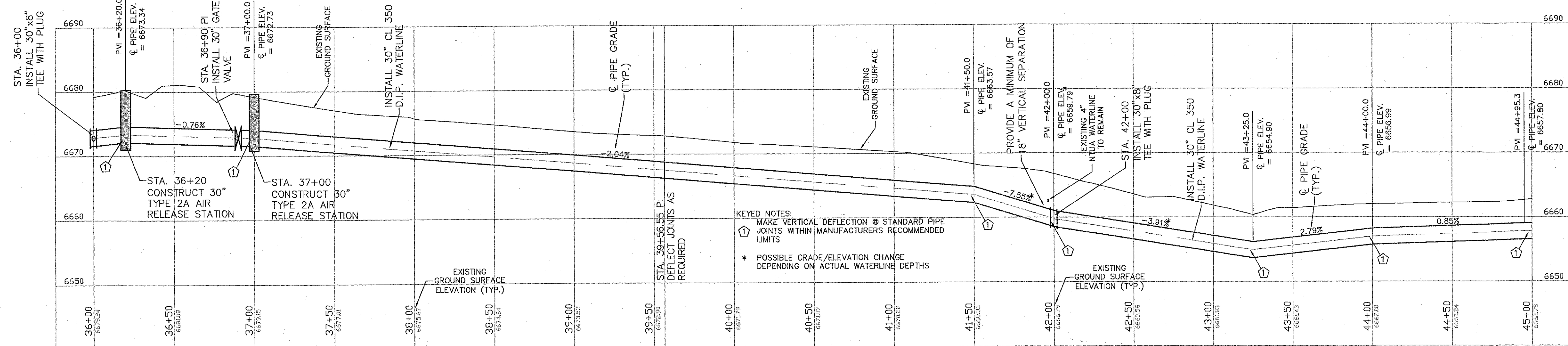
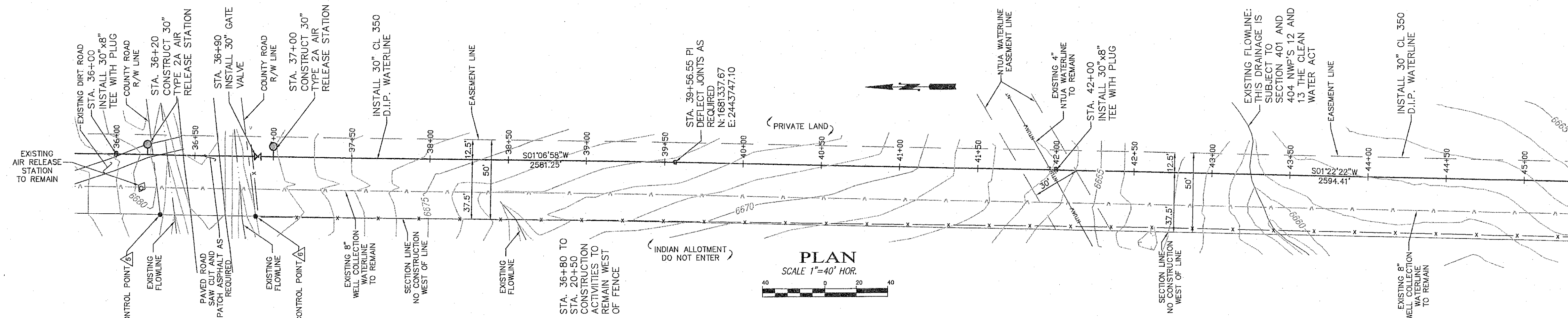
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 18+00 TO STA 36+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2-3





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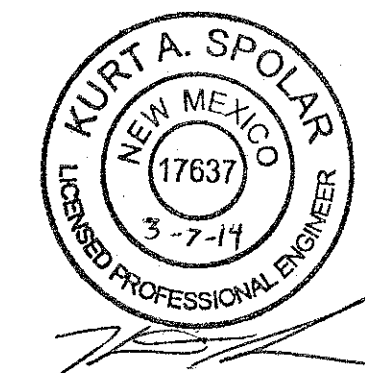
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 36+00 TO STA 54+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 4



NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

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for the
CITY OF GALLUP
McKinley County, New Mexico

NO.	BY	DATE

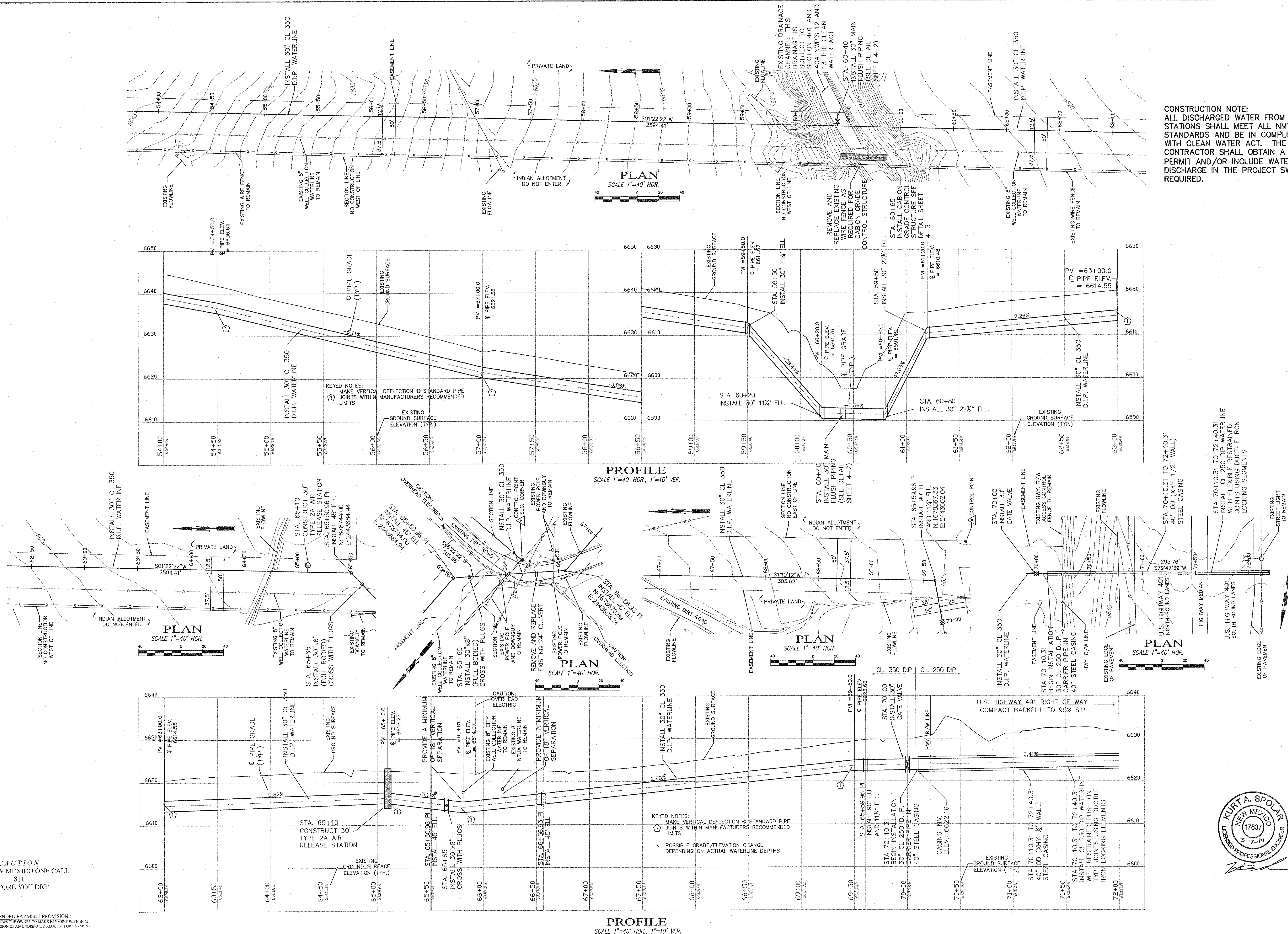
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 54+00 TO STA 72+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP, DS

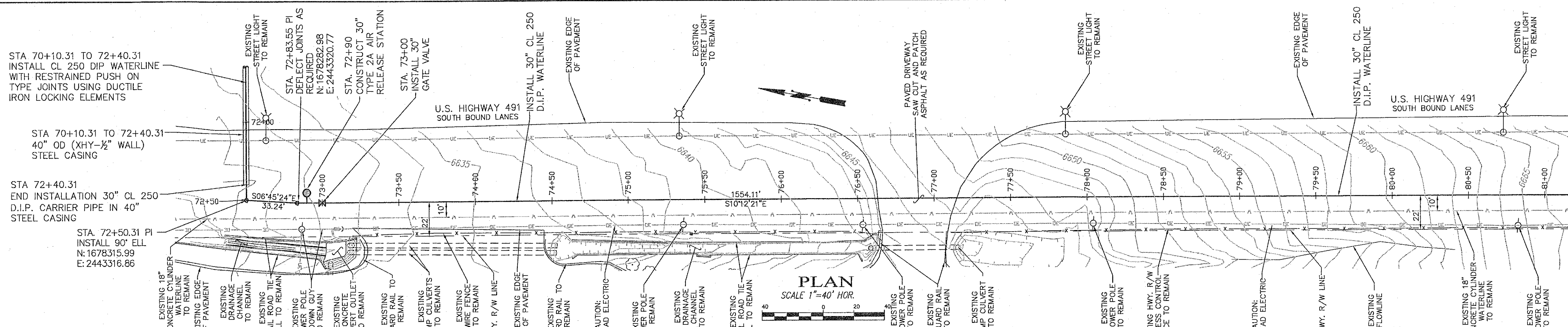
SHEET
2 - 5

CAUTION
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BEFORE YOU DIG!

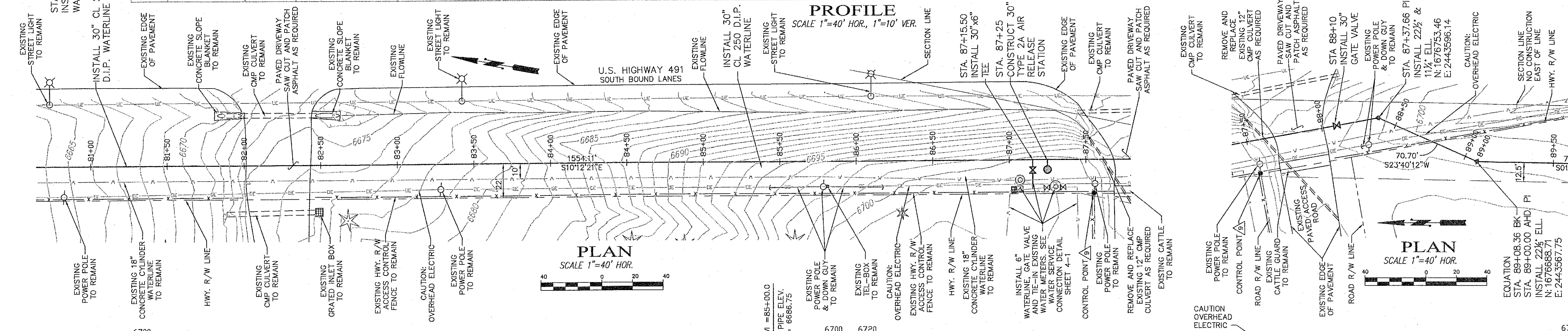
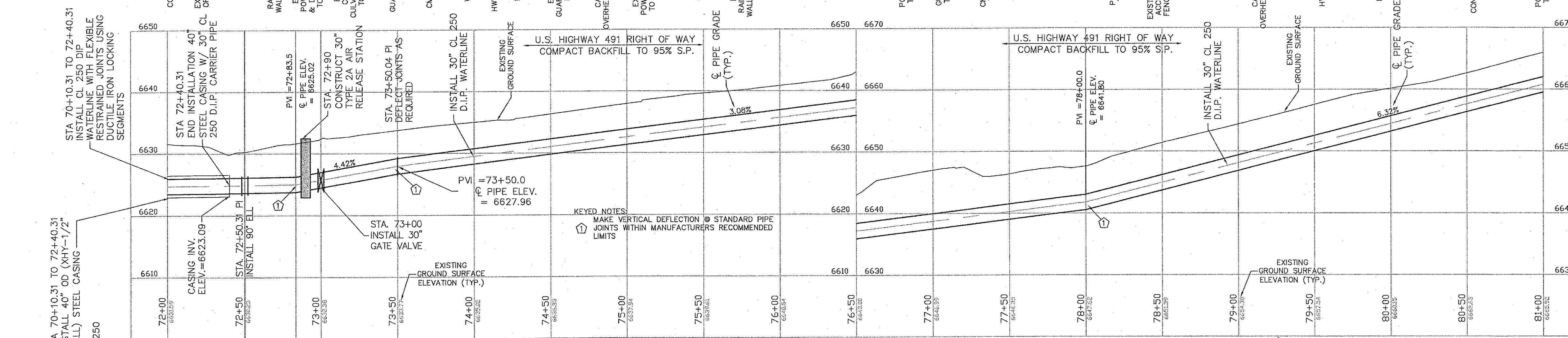


CONSTRUCTION NOTE:
ALL DISCHARGED WATER FROM FLUSHING
STATIONS SHALL MEET ALL NMWQCC
STANDARDS AND BE IN COMPLIANCE
WITH CLEAN WATER ACT. THE
CONTRACTOR SHALL OBTAIN A 402
PERMIT AND/OR INCLUDE WATER
DISCHARGE IN THE PROJECT SWPPP AS
REQUIRED.

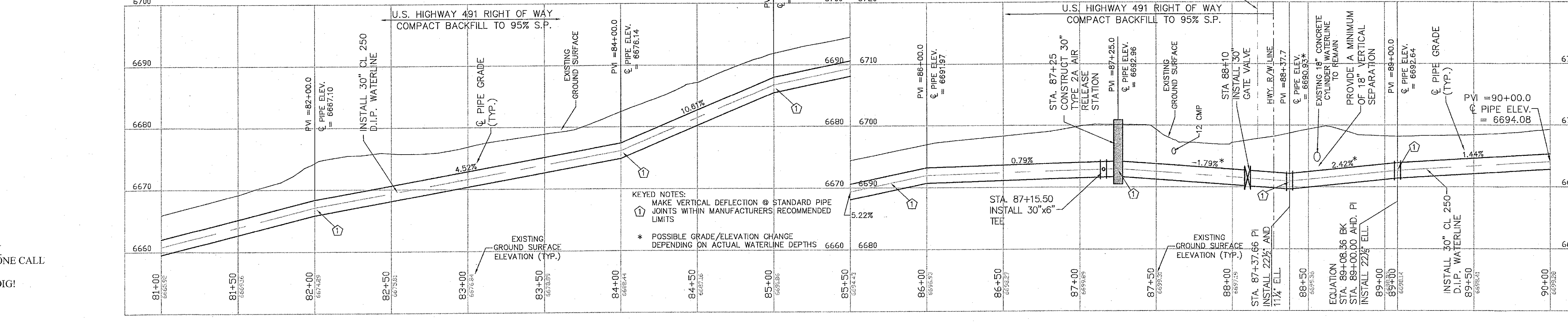




CONSTRUCTION NOTE:
CONSTRUCTION ACTIVITY FROM
STA. 72+25 TO STA. 89+00 IS
IN CLOSE PROXIMITY TO CITY OF
GALLUP MAIN WATER SUPPLY,
18" CONCRETE CYLINDER AS
SHOWN, USE EXTREME CAUTION
TO NOT DISTURB PIPE



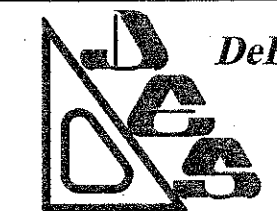
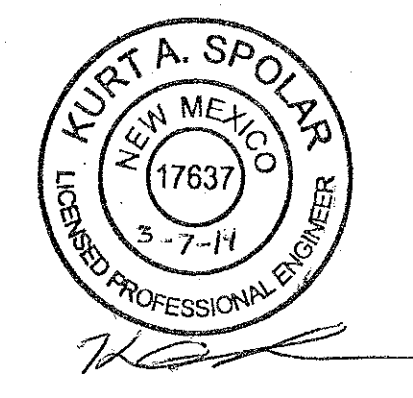
CONSTRUCTION NOTE:
CONSTRUCTION ACTIVITY FROM
STA. 72+25 TO STA. 89+00 IS
IN CLOSE PROXIMITY TO CITY OF
GALLUP MAIN WATER SUPPLY,
18" CONCRETE CYLINDER AS
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TO NOT DISTURB PIPE



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NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLIANCE AGREEMENT TO MAKE PAYMENT WITHIN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KEYED NOTES:
MAKE VERTICAL DEFLECTION @ STANDARD PIPE
JOINTS WITHIN MANUFACTURERS' RECOMMENDED
LIMITS
* POSSIBLE GRADE/ELEVATION CHANGE
DEPENDENT ON ACTUAL WATERLINE DEPTHS



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for the
CITY OF GALLUP
McKinley County, New Mexico

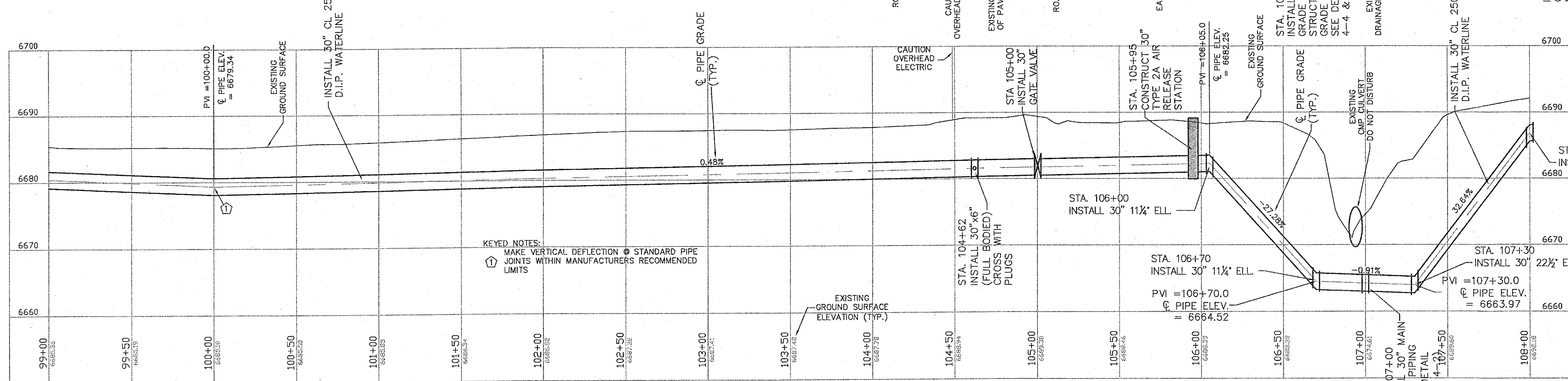
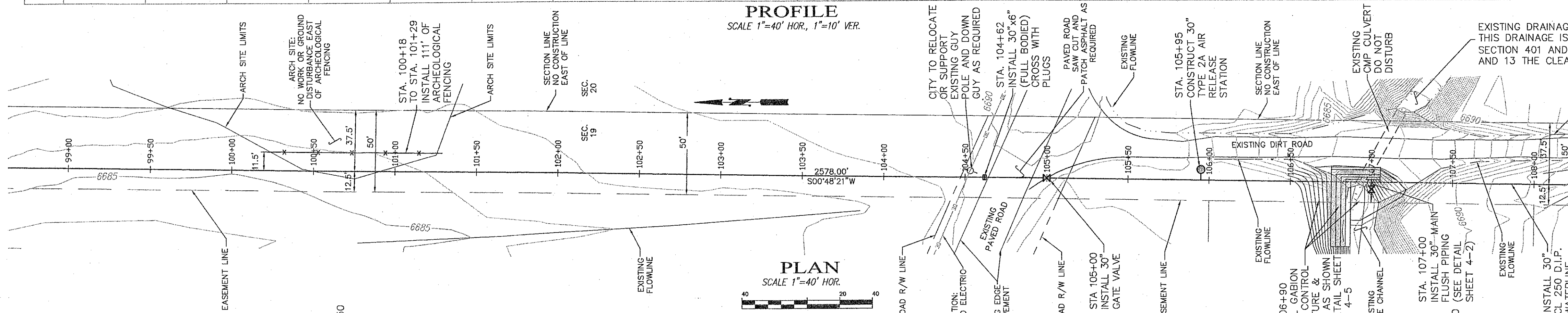
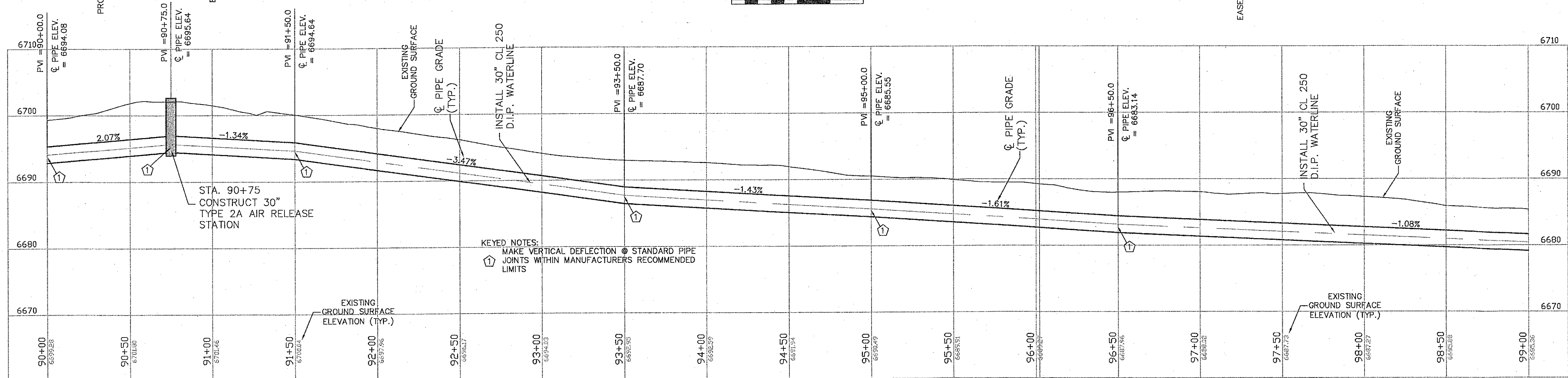
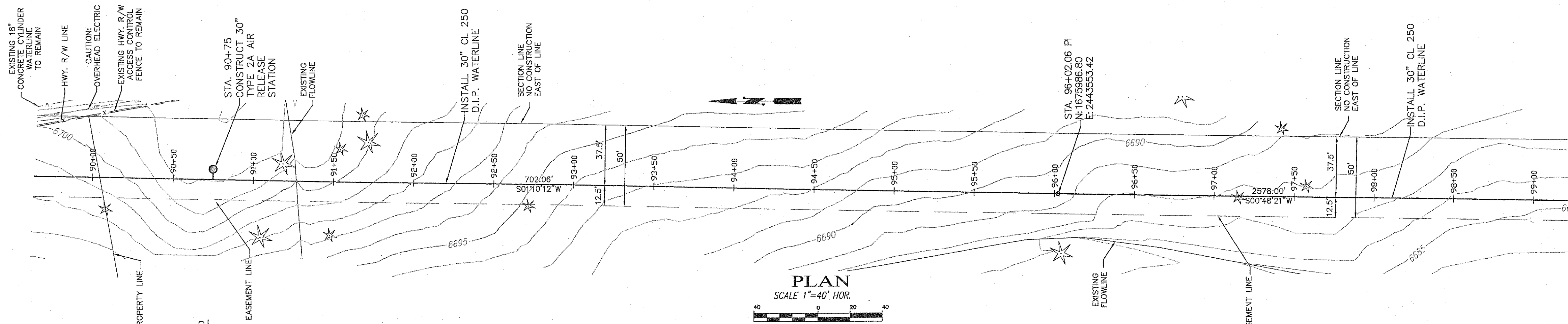
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 72+00 TO STA 90+00

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET
2 - 6



CONSTRUCTION NOTE:
ALL DISCHARGED WATER FROM FLUSHING STATIONS SHALL MEET ALL NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT AND/OR INCLUDE WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.



CAUTION
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NOTICE OF EXTENDED PAYMENT PROVISION:
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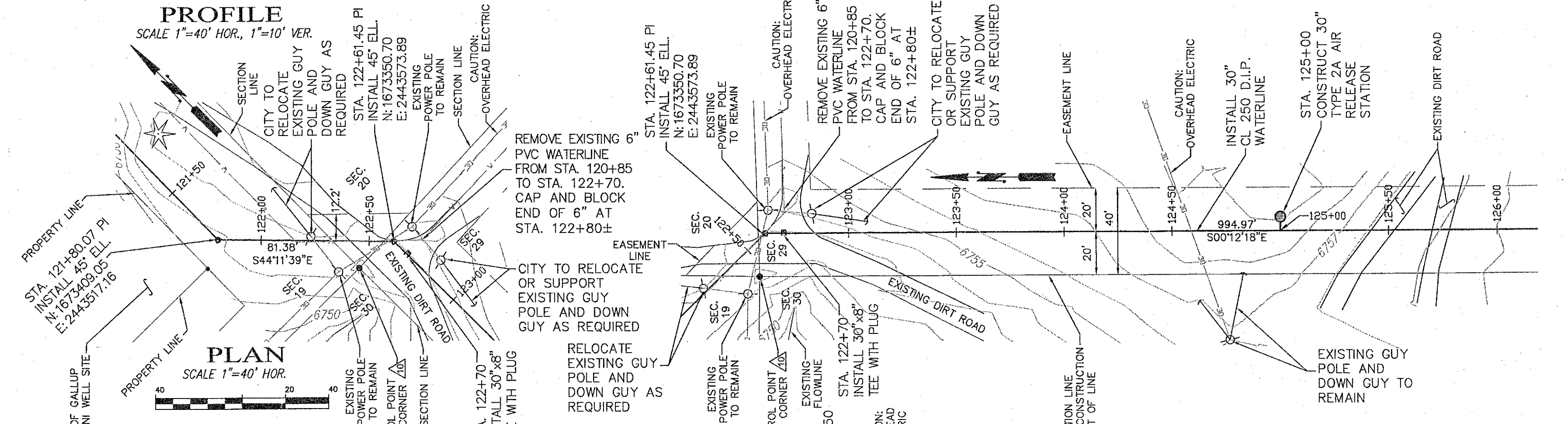
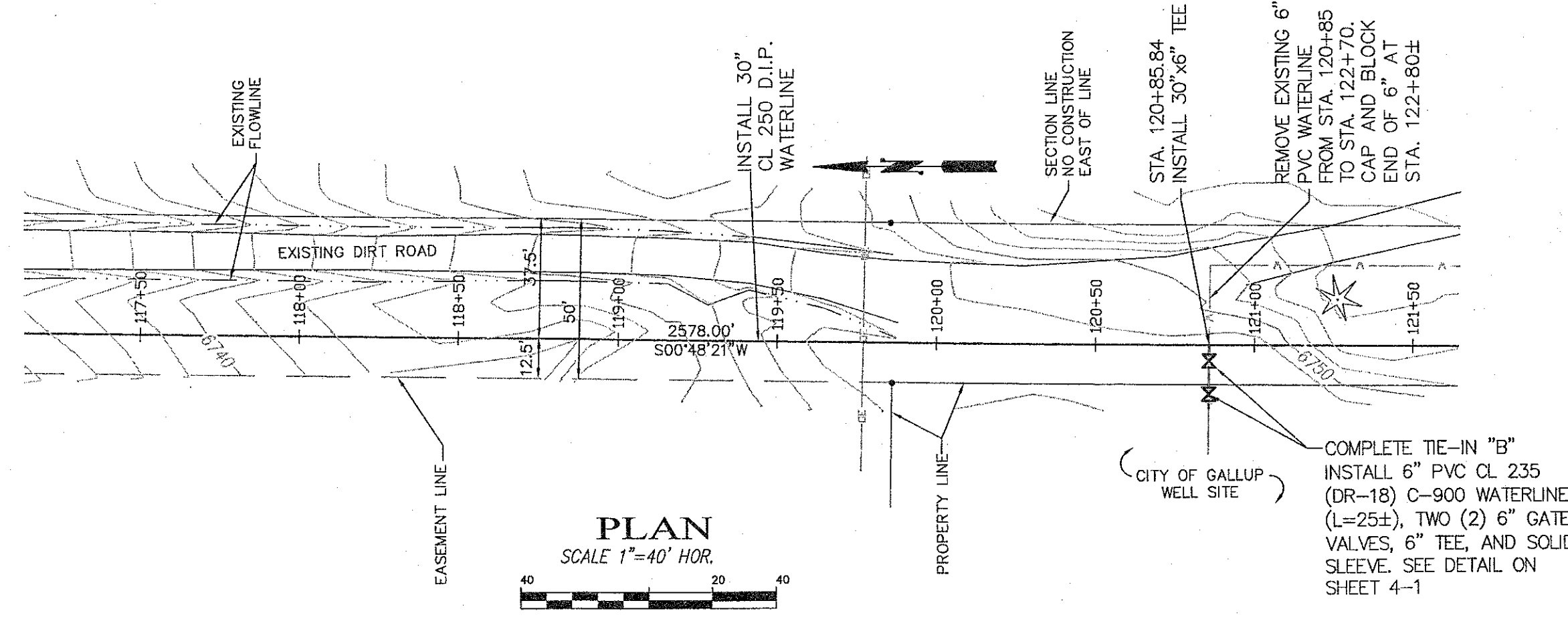
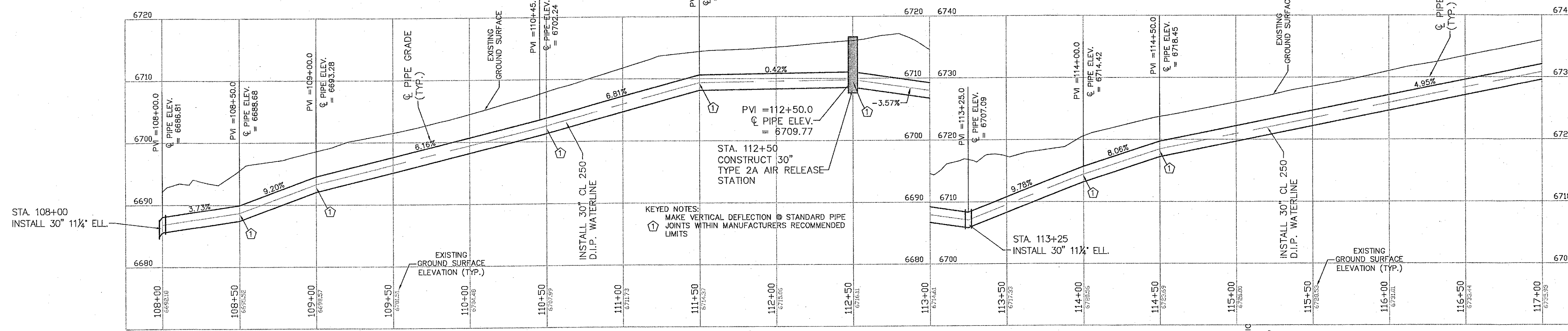
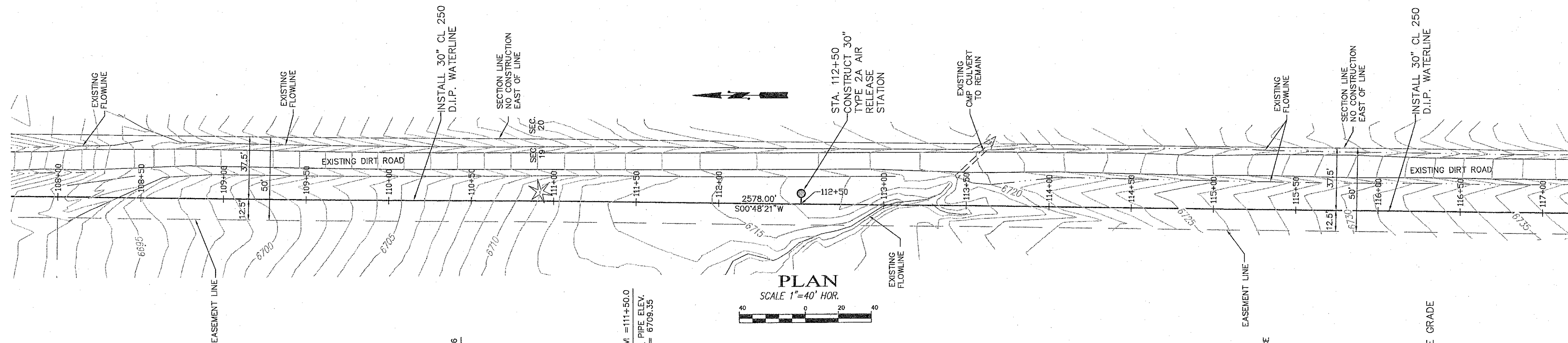
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 90+00 TO STA 108+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 7



CAUTION
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NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT PROVIDES FOR THE OWNER TO MAKE PAYMENT WITHIN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

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CITY OF GALLUP
for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 108+00 TO STA 126+00

KURT A. SPOLAR
NEW MEXICO
17637
3-7-14
LICENSED PROFESSIONAL ENGINEER

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 8

ENGINEER: C:\Users\Public\Documents\Engineering\Project 8\30" design.dwg

CONSTRUCTION NOTE:
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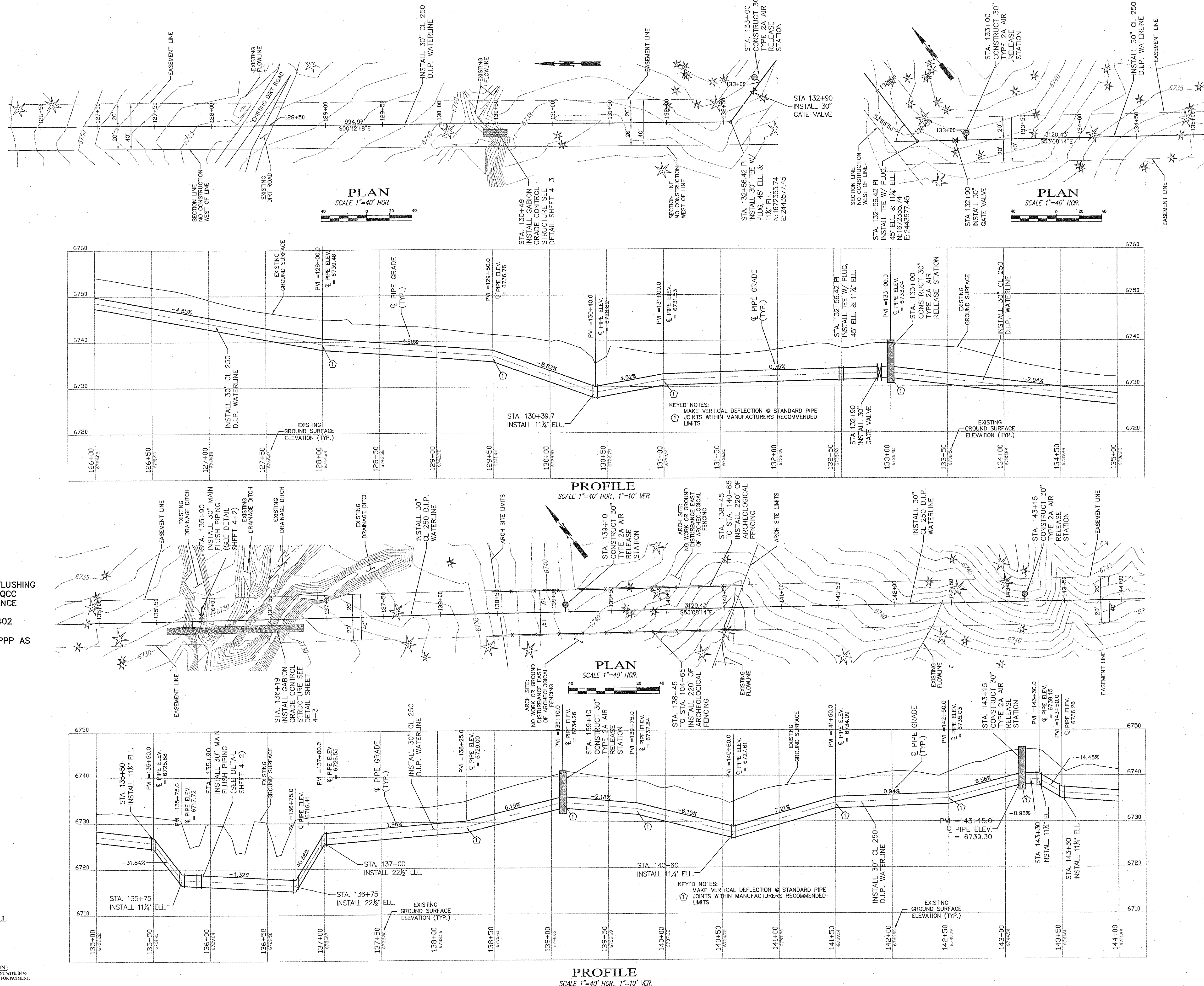
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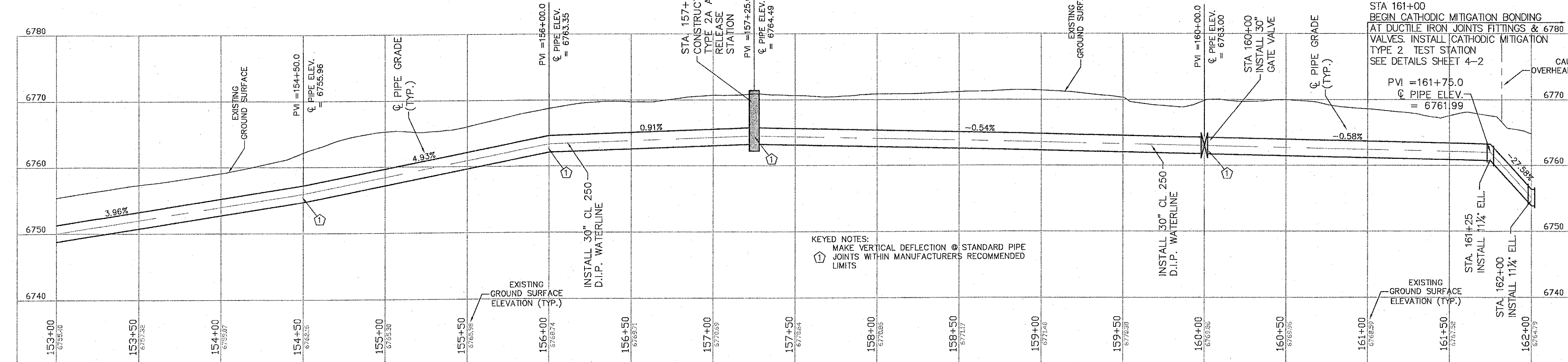
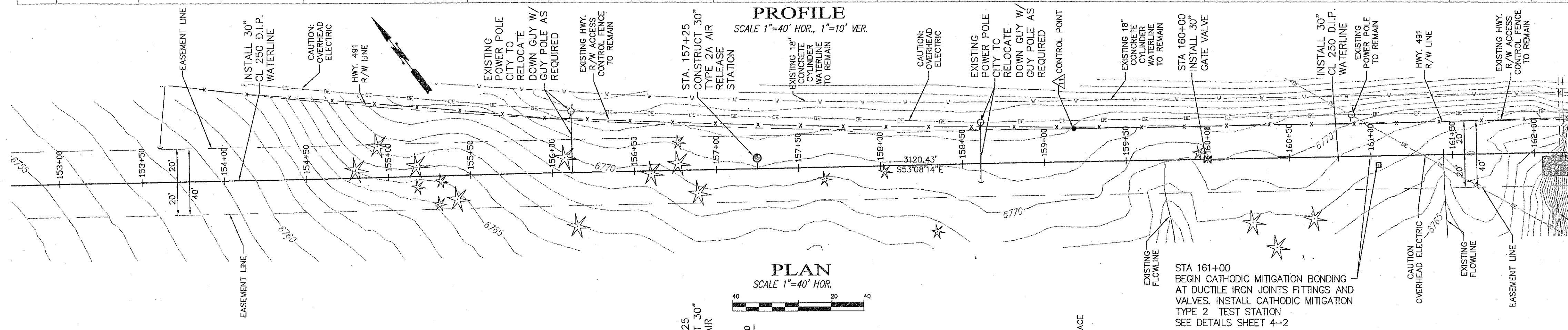
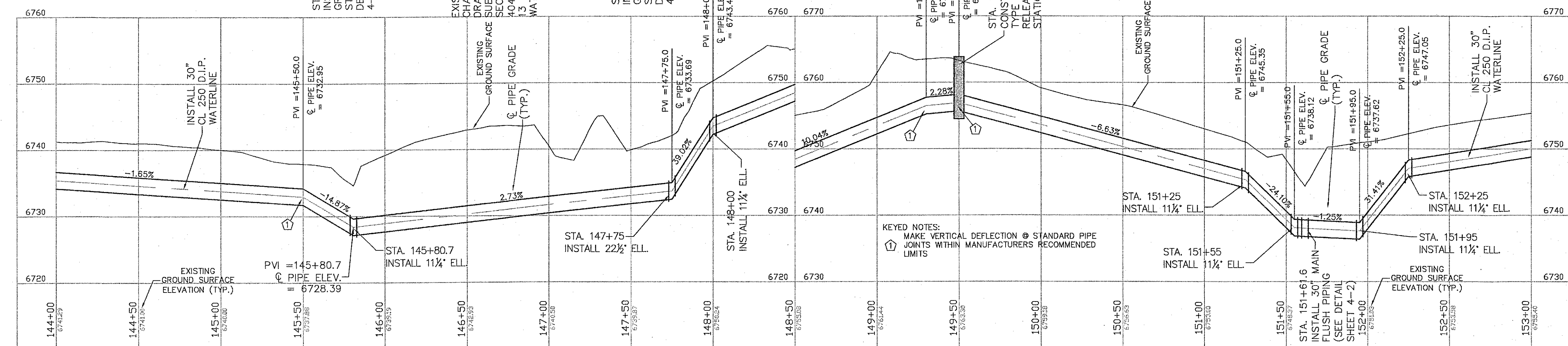
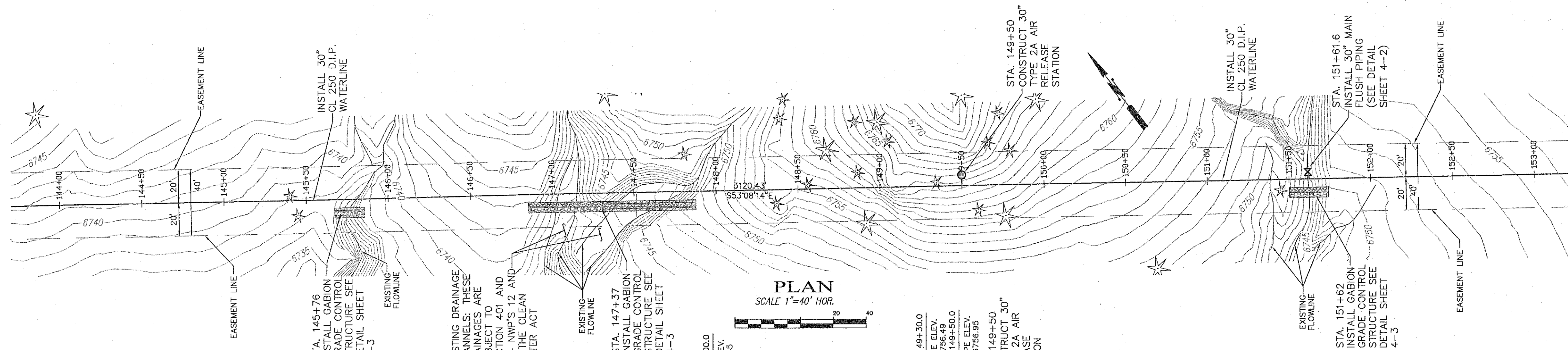
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 126+00 TO STA 144+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 9

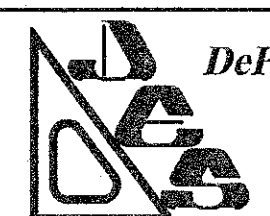




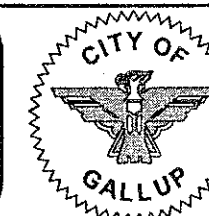
CONSTRUCTION NOTE:
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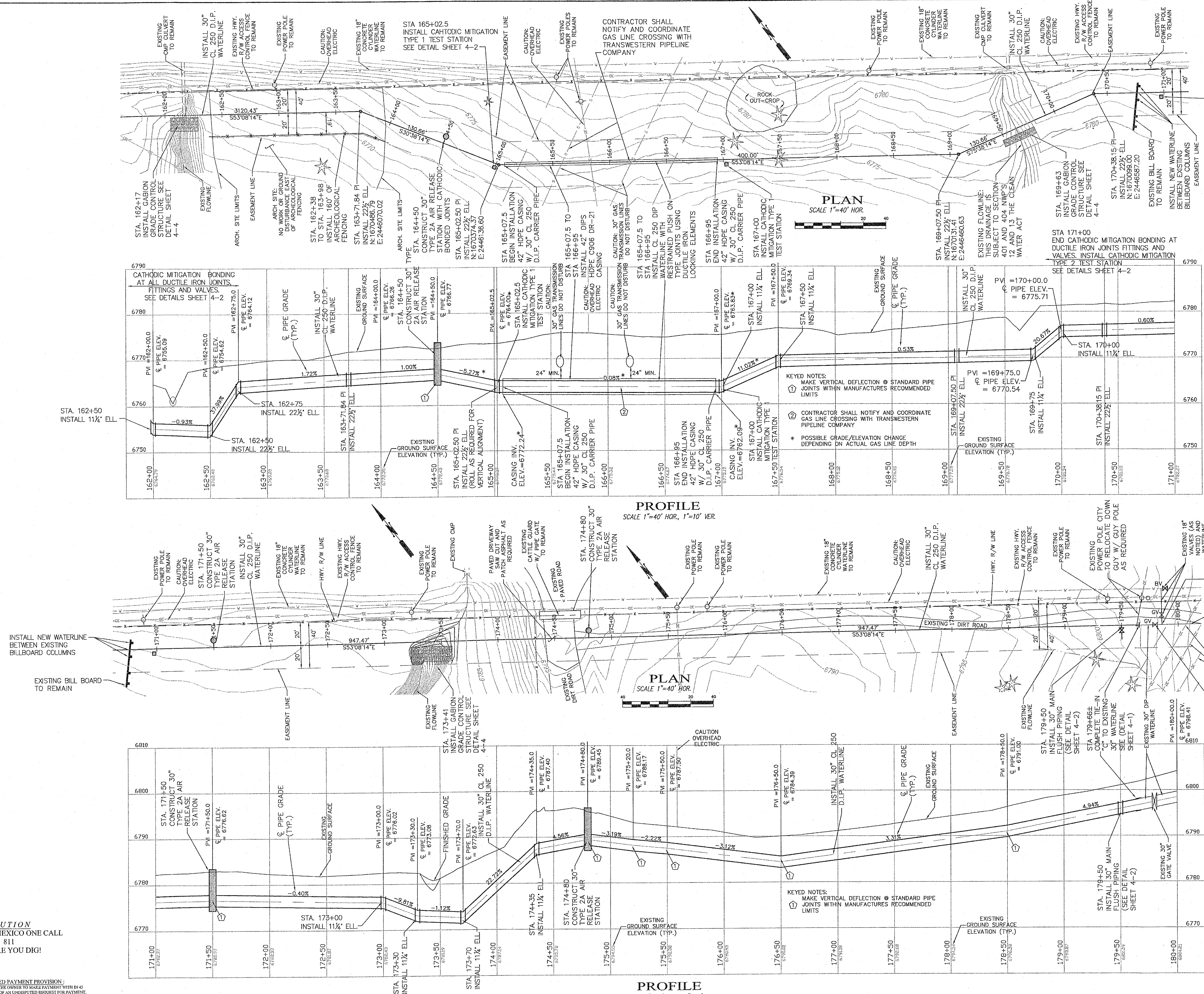
CITY OF GALLUP
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REACH 13
FORMAL BID NO. 1402

30" PLAN AND PROFILE
STA 144+00 TO STA 162+00

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS



SHEET
2 - 10

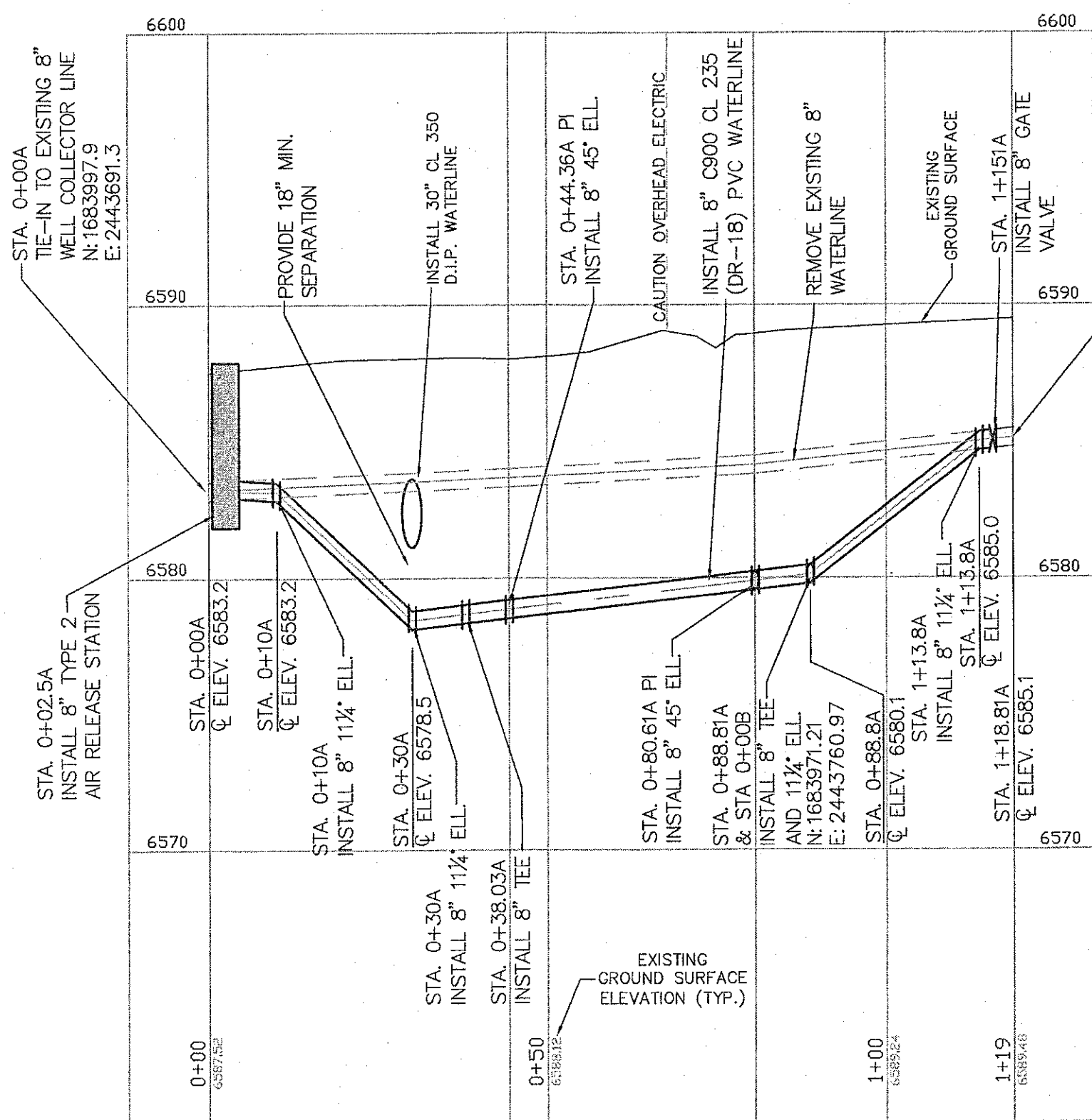
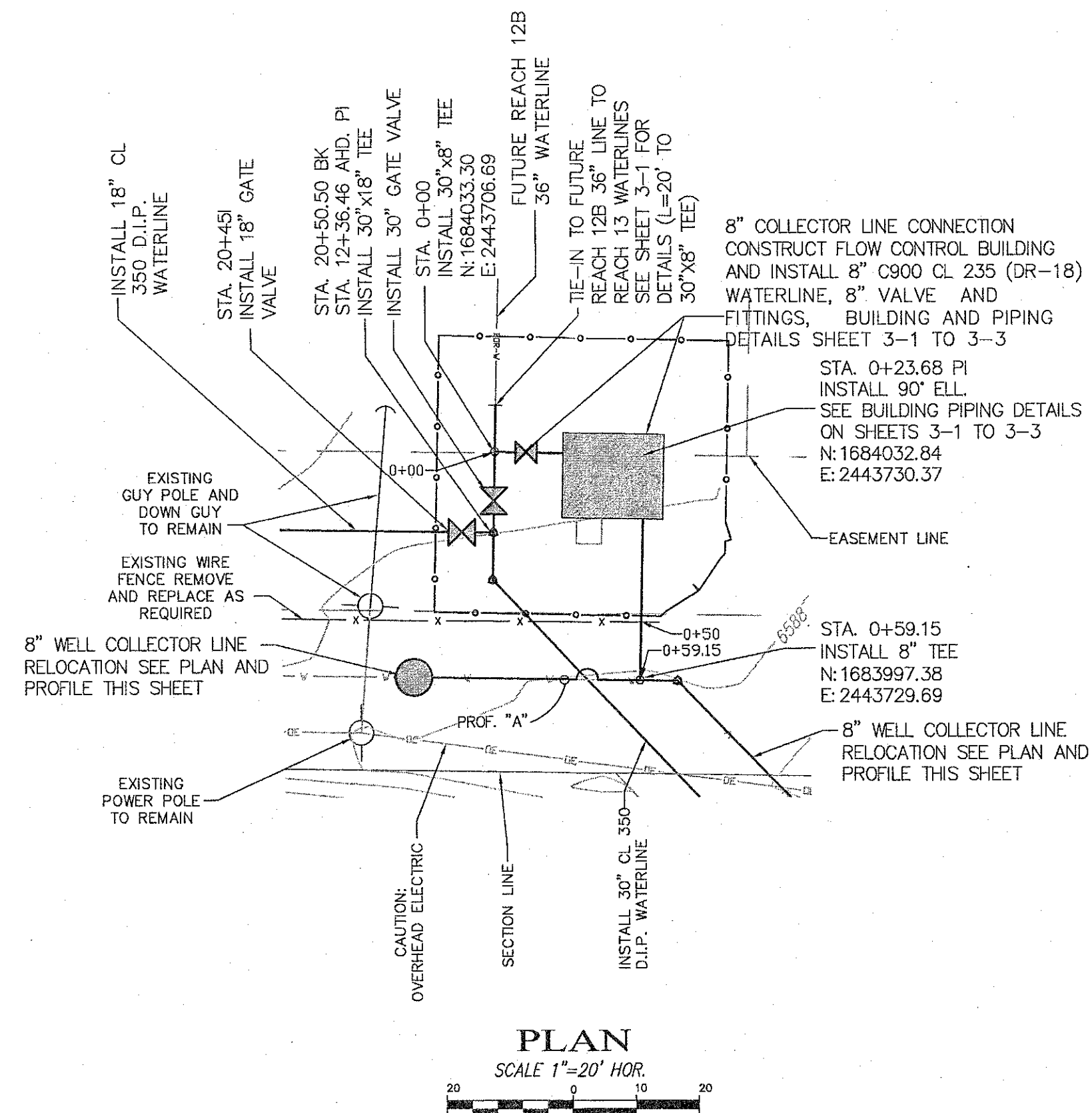
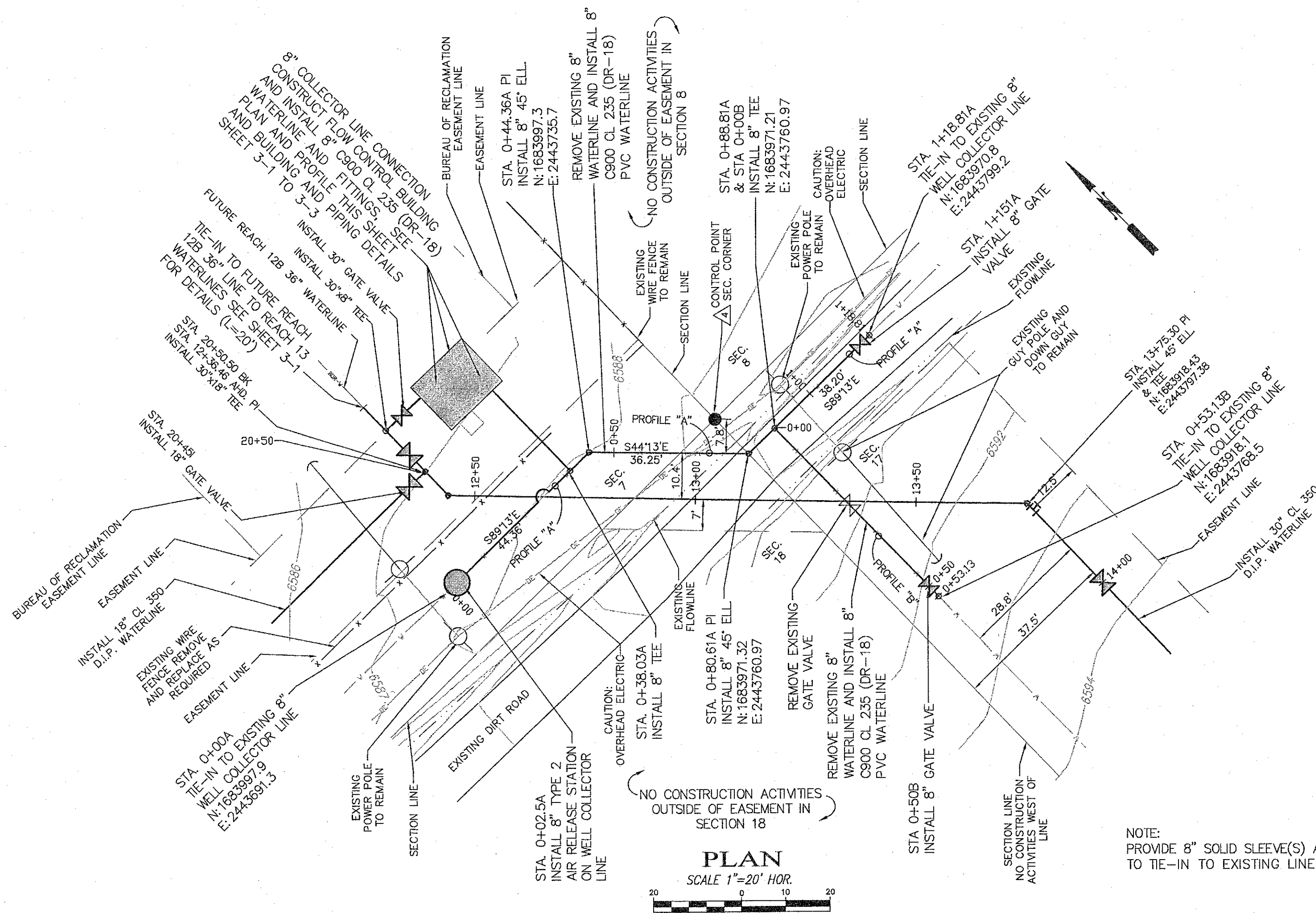


STA 171+00
END CATHODIC MITIGATION BONDING AT
DUCTILE IRON JOINTS FITTINGS AND VALVES.
INSTALL CATHODIC MITIGATION TYPE 2 TEST
STATION
SEE DETAILS SHEET 4-2

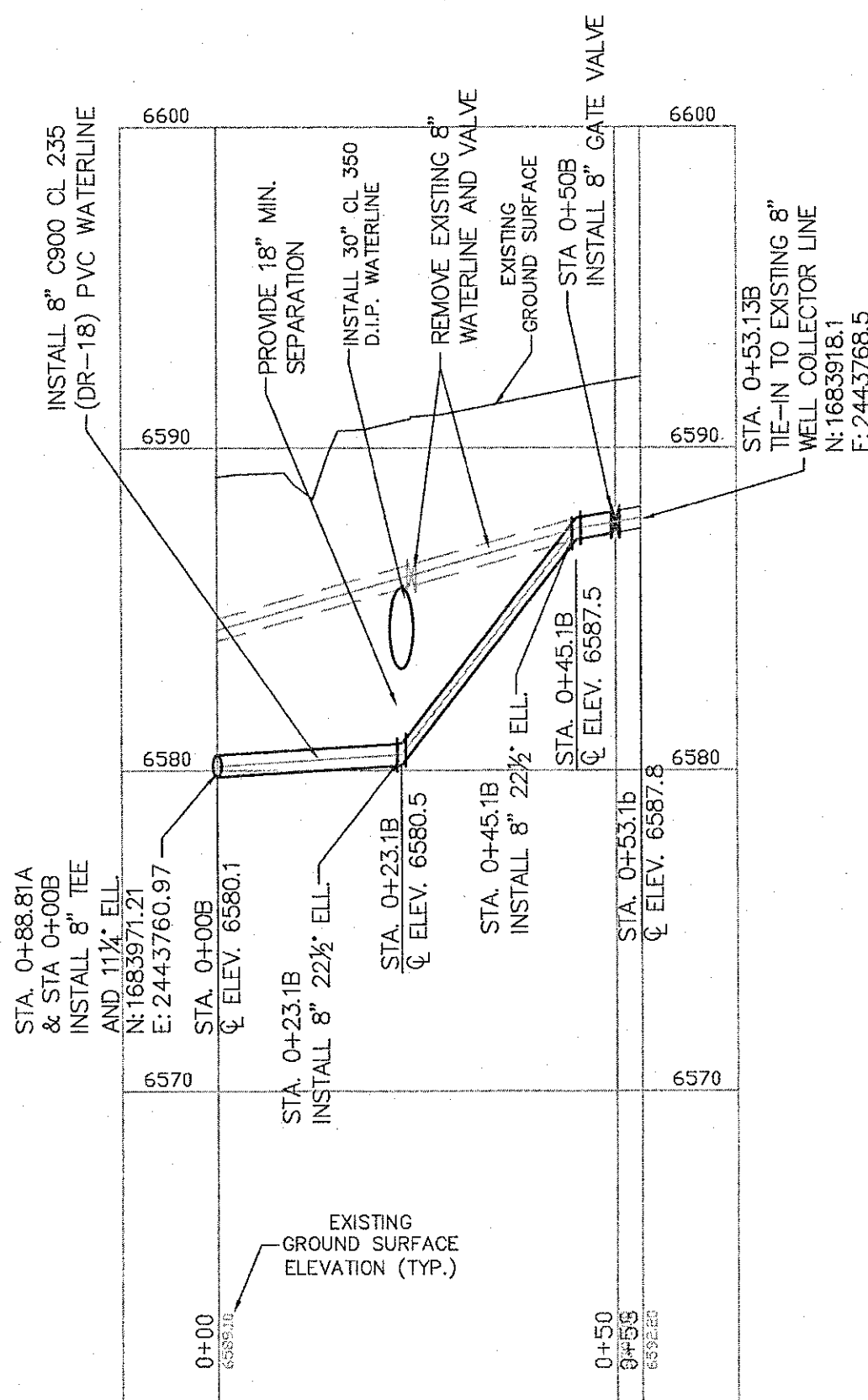
CONSTRUCTION NOTE:
ALL DISCHARGED WATER FROM FLUSHING
STATIONS SHALL MEET ALL NMWQCC
STANDARDS AND BE IN COMPLIANCE
WITH CLEAN WATER ACT. THE
CONTRACTOR SHALL OBTAIN A 402
PERMIT AND/OR INCLUDE WATER
DISCHARGE IN THE PROJECT SWPPP AS
REQUIRED.



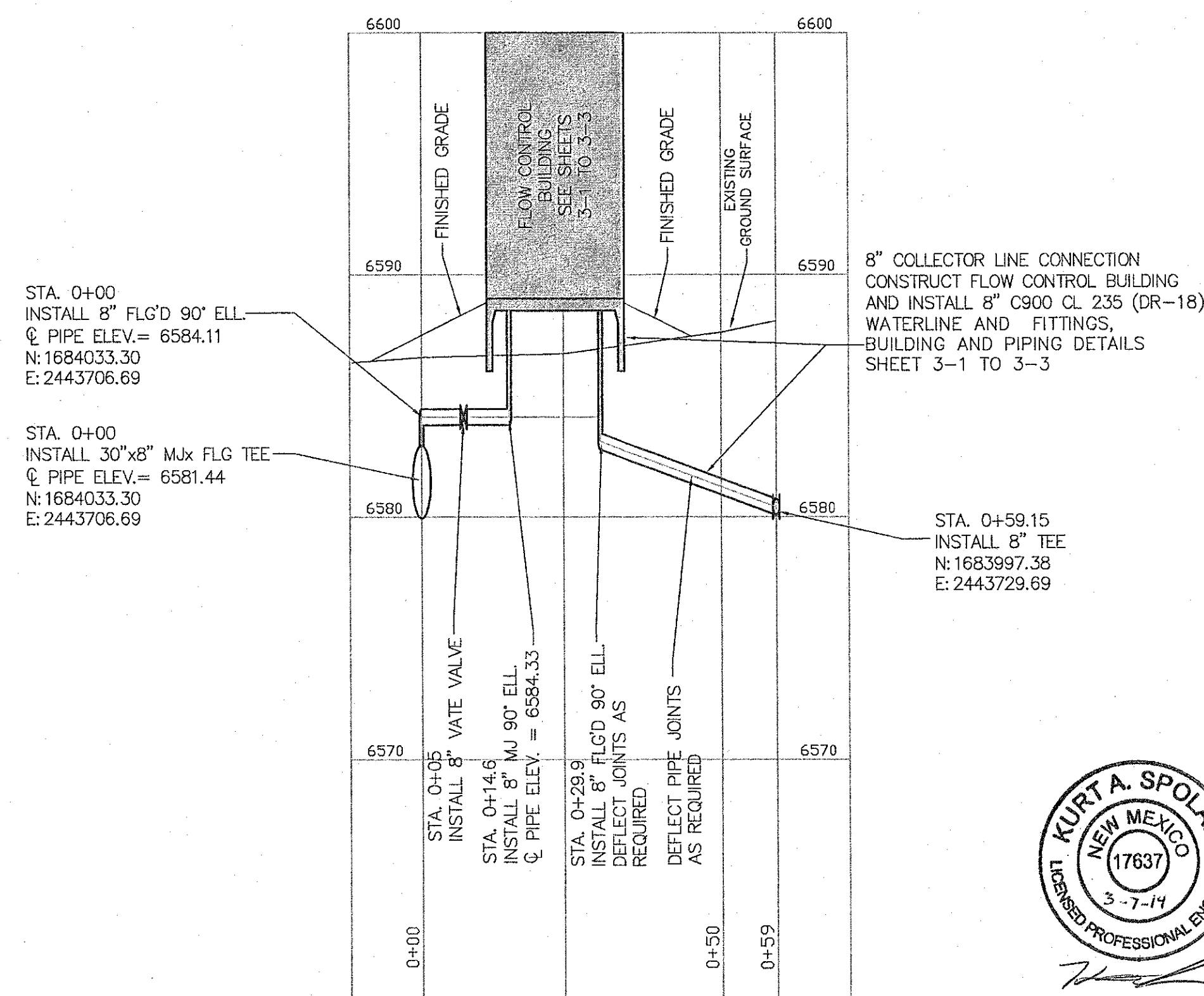
ENGINEER: C:\Users\Public\Documents\Engineer\Project 8\wp8 design.dwg



PROFILE "A"
SCALE 1"=20' HOR., 1"=5' VER.



PROFILE "B"
SCALE 1"=20' HOR., 1"=5' VER.



PROFILE "C"
SCALE 1"=20' HOR., 1"=5' VER.

WELL COLLECTOR LINE CONNECTION
SCALE 1"=20' HOR., 1"=5' VER.

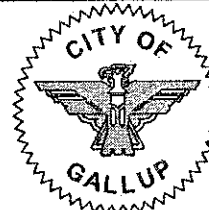
8" WELL COLLECTOR LINE RELOCATION (LOWERING)
SCALE 1"=20' HOR., 1"=5' VER.

CAUTION
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NOTICE OF EXTENDED PAYMENT PROVISION:
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DAYS AFTER SUBMISSION OF AN UNDEPUTED REQUEST FOR PAYMENT.



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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505) 863-5440 WWW.DEPAULIENGINEERING.COM



for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

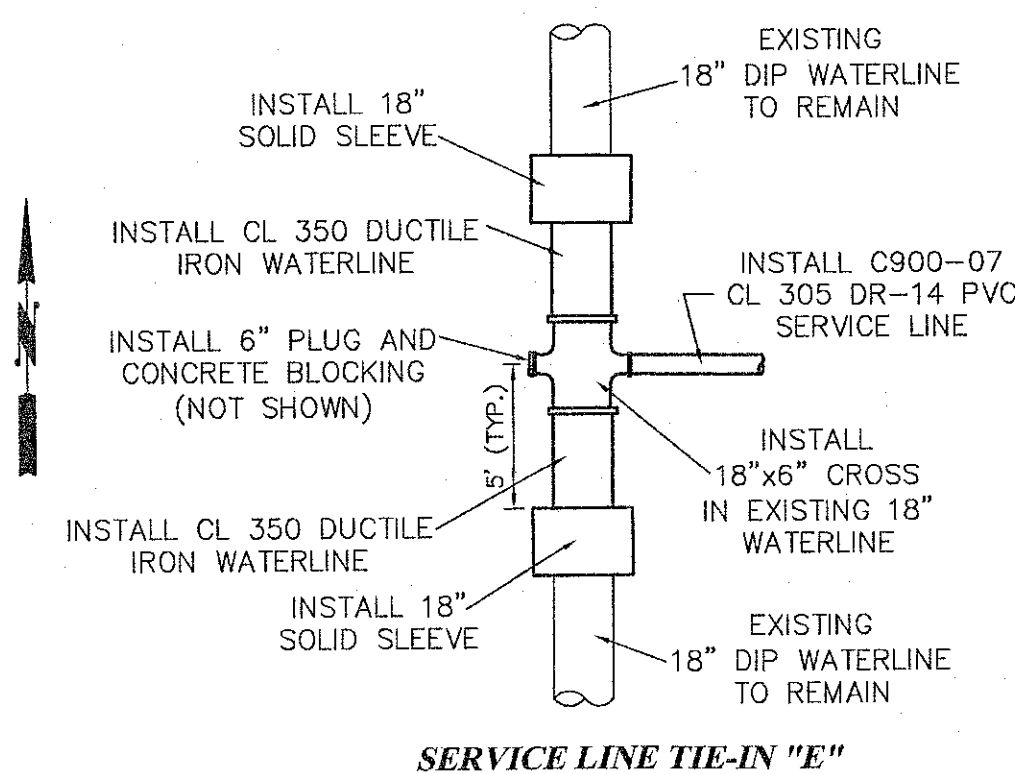
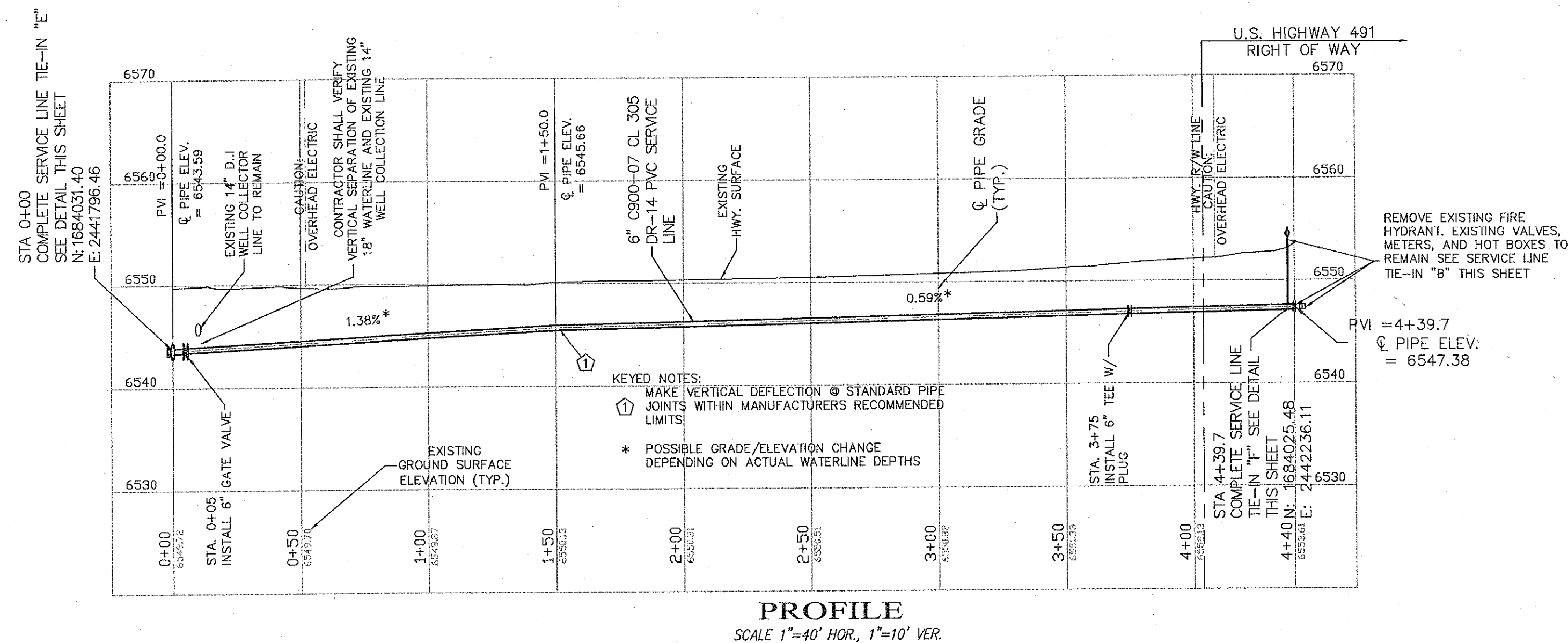
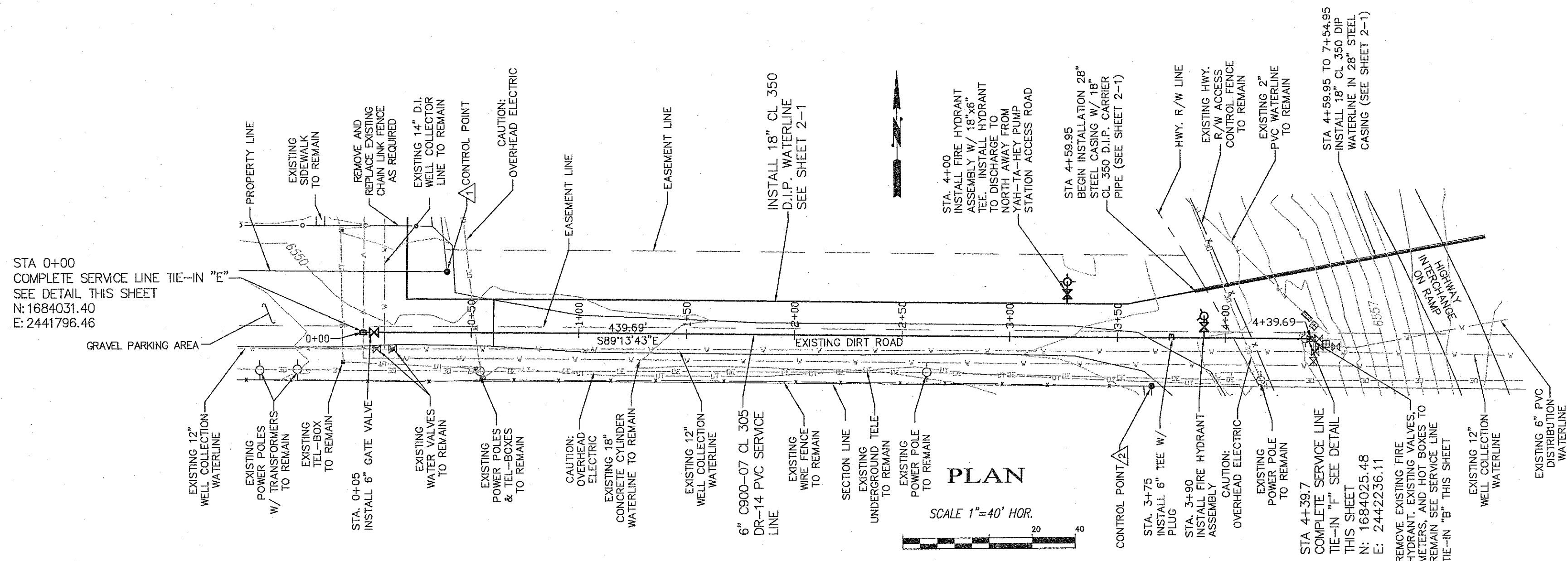
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

WELL COLLECTOR LINE
RELOCATION & TIE-IN

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2-12

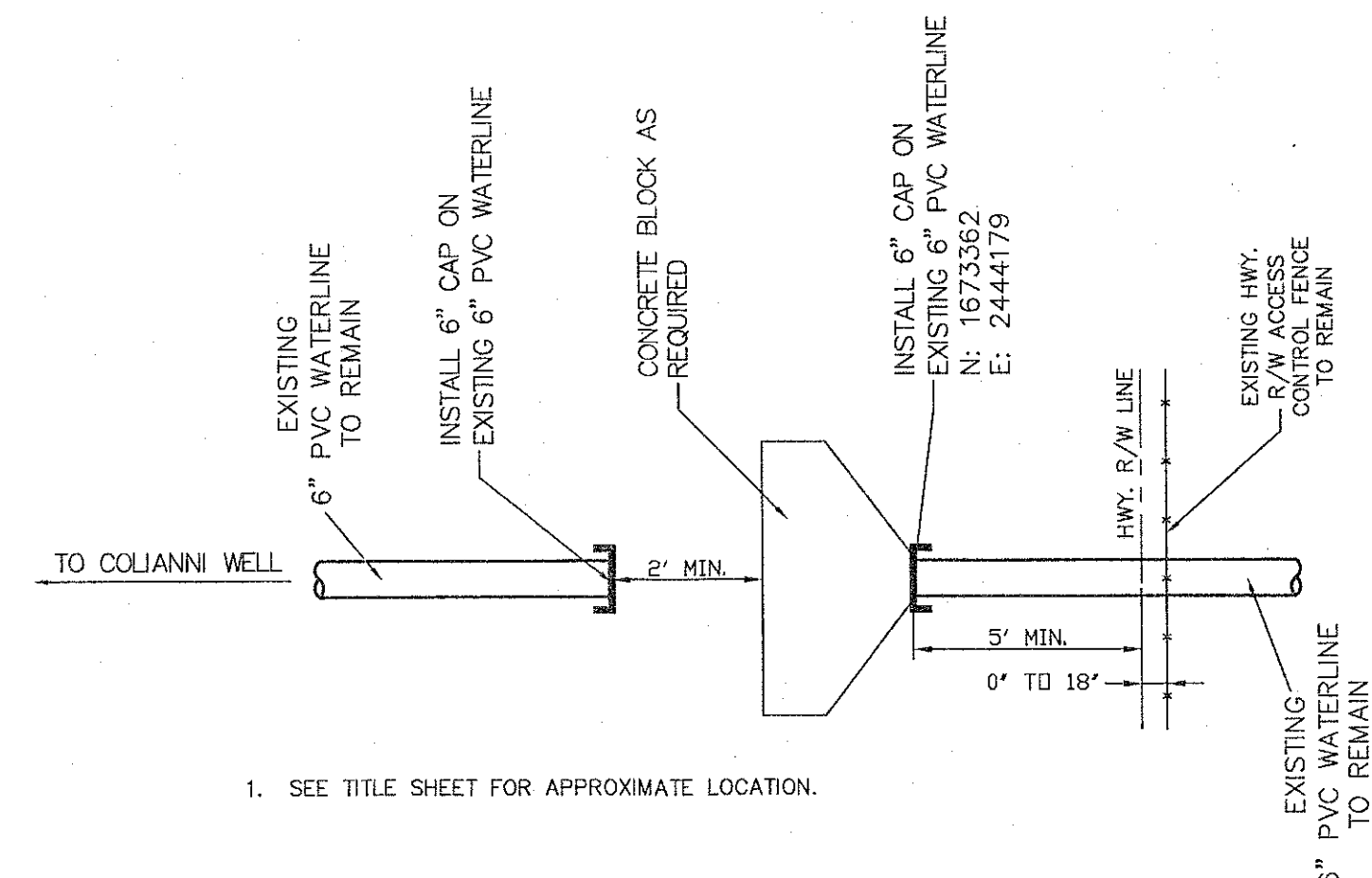
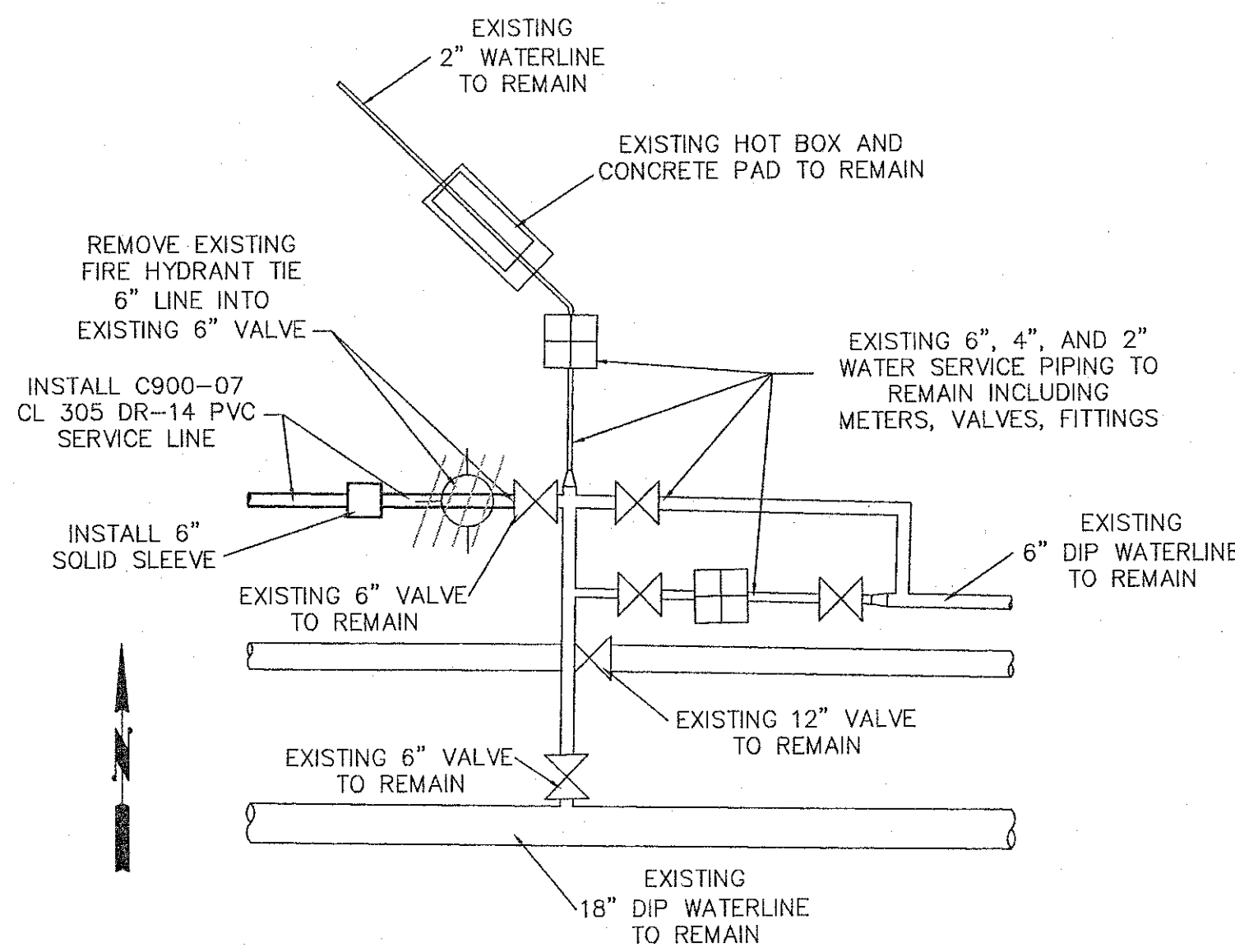




SERVICE LINE TIE-IN DETAILS
NTS

GENERAL TIE-IN NOTES:

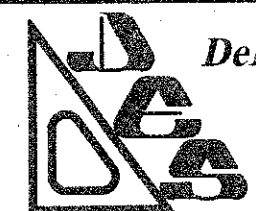
- EXISTING CONFIGURATIONS AT TIE-INS ARE BASED ON CONSTRUCTION DRAWINGS, ASBUILT DRAWINGS, AND SURFACE INFORMATION.
- CONTRACTOR SHALL CAREFULLY EXPOSE AND VERIFY EXISTING LINES SIZE, LOCATION (VERTICAL AND HORIZONTAL), AND MATERIAL AS REQUIRED. PRIOR TO WATERLINE CONSTRUCTION.
- ACTUAL FIELD LOCATION OF EXISTING WATERLINES MAY REQUIRE ALTERATIONS TO PROPOSED WATERLINE ALIGNMENT AND/OR GRADE. ADDITIONAL OR ALTERNATIVE FITTINGS SHALL BE PROVIDED AS REQUIRED.



6" WELL LINE ABANDONMENT DETAILS
NTS

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CAUTION
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for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

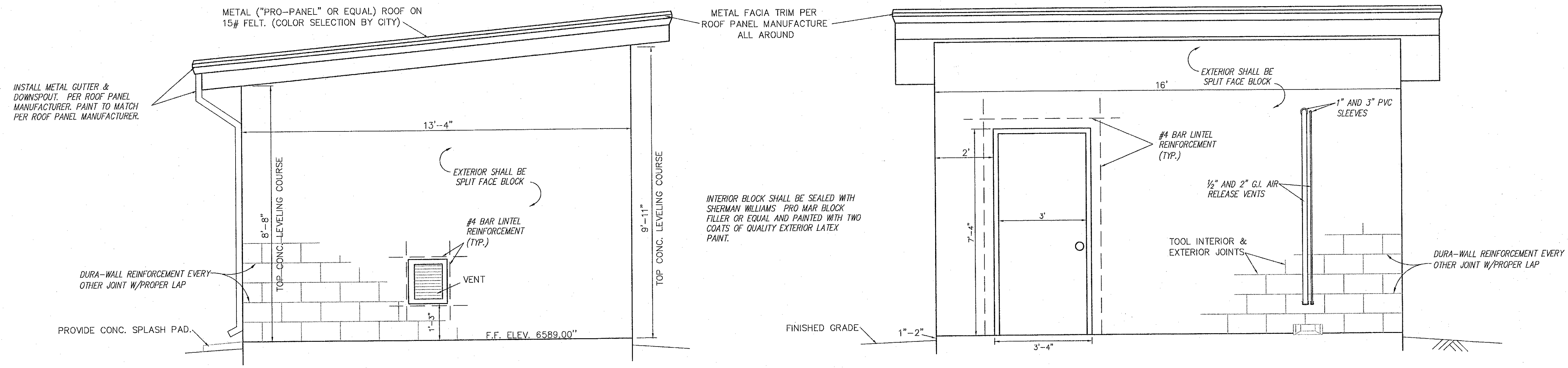
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

SERVICE LINE
PLAN & PROFILE

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
2 - 13

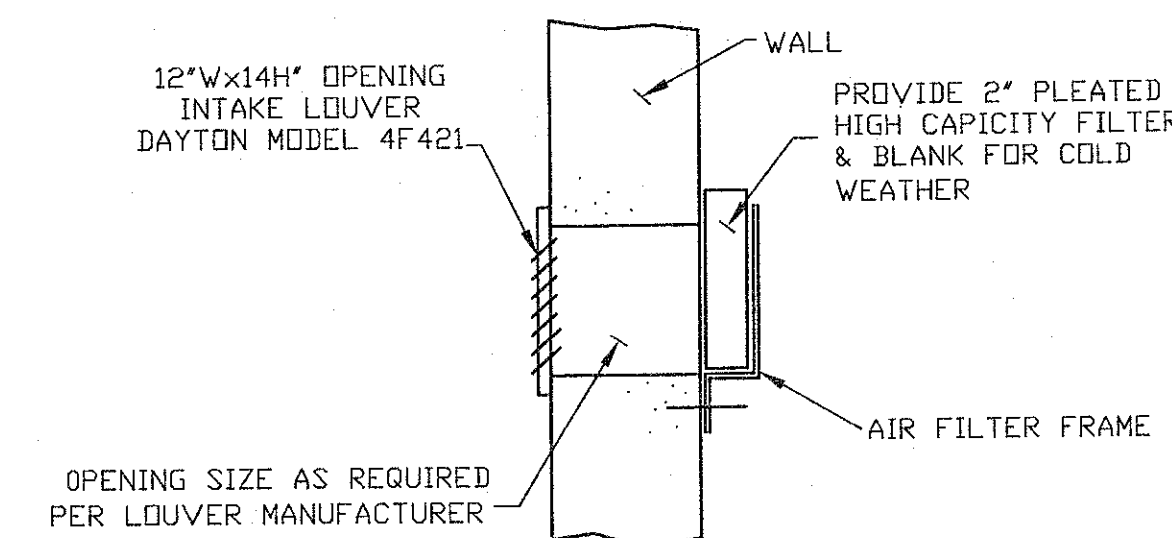




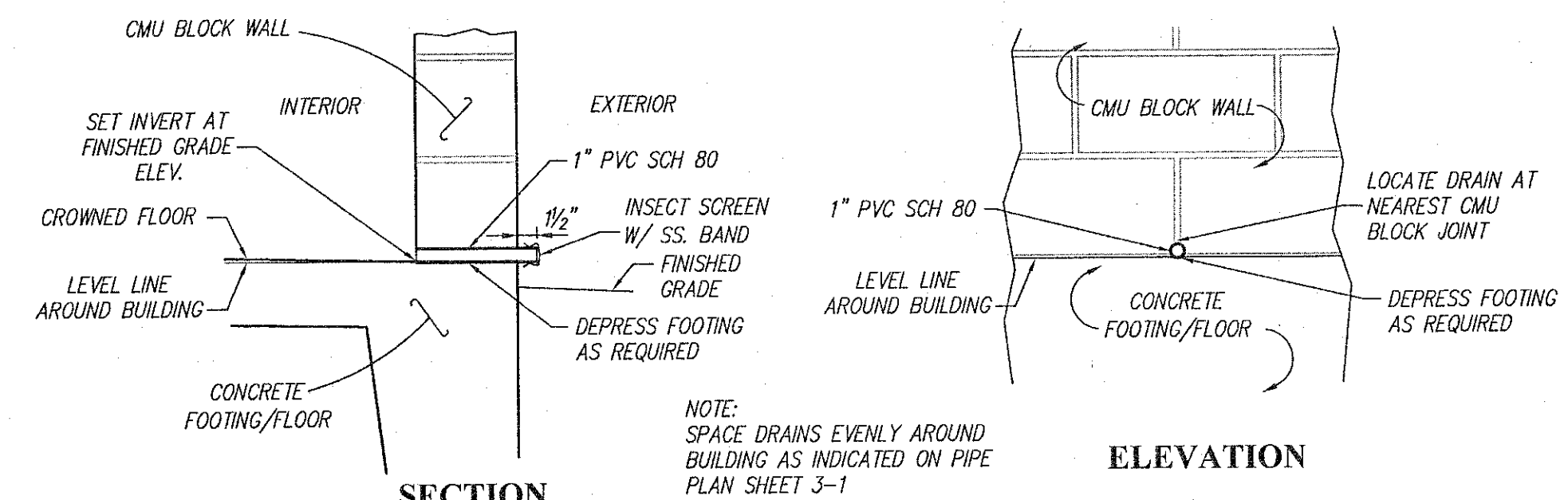
ELEVATION (LOOKING EAST)

ELEVATION (LOOKING NORTH)

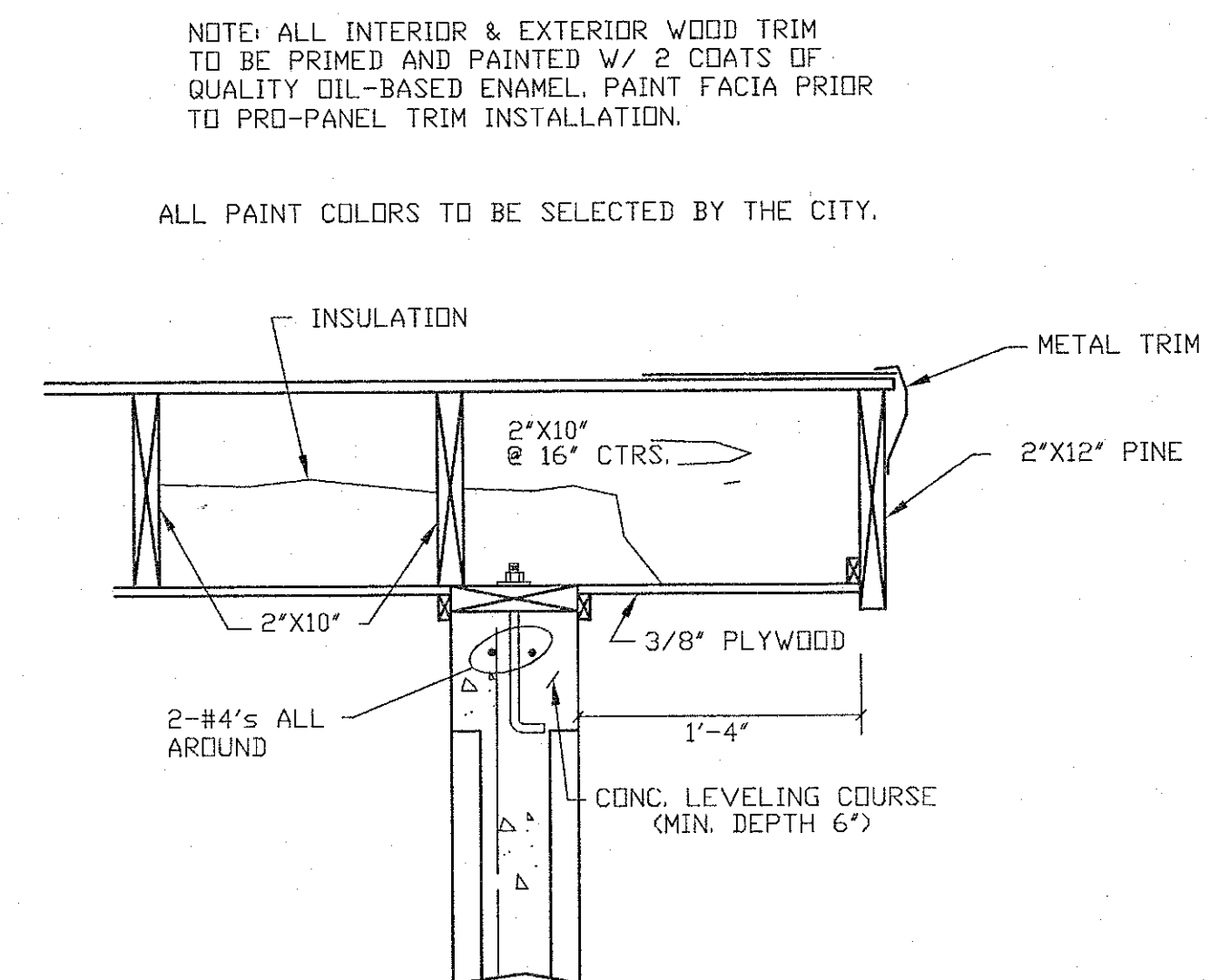
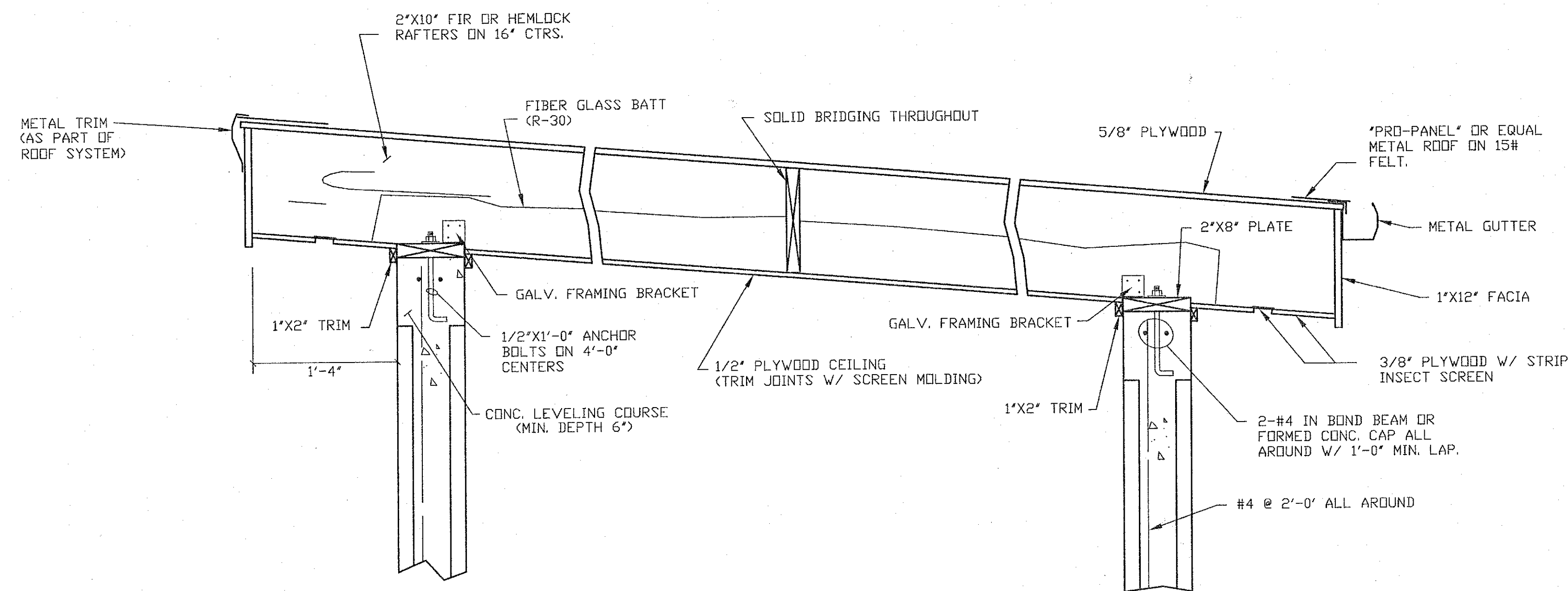
PRESSURE REDUCING BUILDING ELEVATIONS
SCALE 1/2"=1'-0"



VENT DETAIL (2 REQUIRED)
NTS



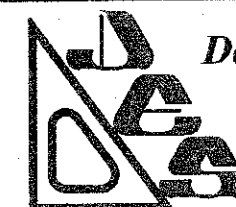
PVC FLOOR DRAIN DETAIL (7 REQUIRED)
NTS



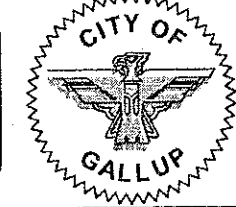
ROOF DETAILS: WOOD CONSTRUCTION
NTS

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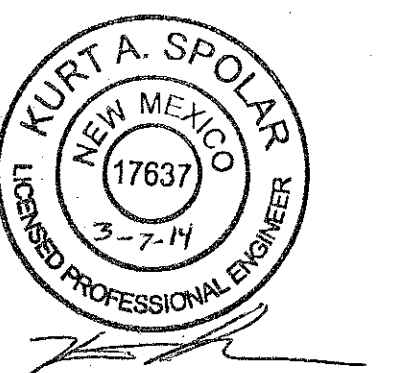
NO.	BY	DATE

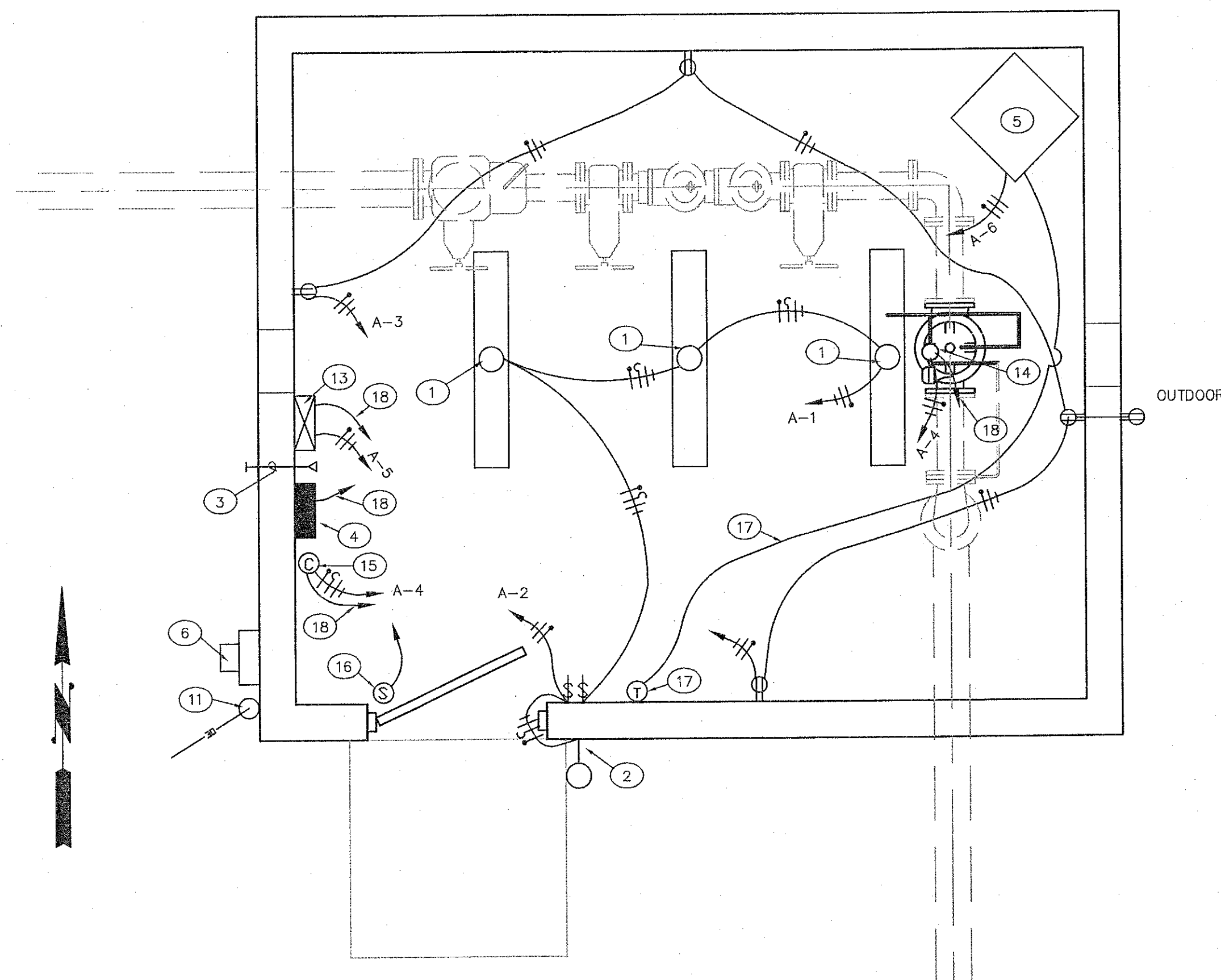
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

FLOW CONTROL STATION
BUILDING DETAILS

SCALE: SHOWN
DATE: MARCH 2014
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET
3-2





FLOW CONTROL STATION ELECTRICAL PLAN
SCALE 1/2"=1'

ELECTRICAL KEYED NOTES:

- 1 4' LONG 4 LAMP CEILING MOUNT FLUORESCENT FIXTURE WITH TUBE GUARDS AND WIRE BASKETS. (FIXTURES SHALL BE EVENLY SPACED IN BUILDING)
- 2 WALL MOUNTED OUTSIDE FIXTURE, HEATH ZENITH PHOTOCELL FLUORESCENT ENTRY LIGHT MODEL #SL-5680 OR EQUAL
- 3 1 1/2" PVC WALL SLEEVE FOR COMMUNICATION SERVICE
- 4 PANEL "A" 120/240V, SINGLE PHASE, 150 AMP MAIN LUGS, WITH 8 EACH 20 A - 1 POLE BREAKERS AND ONE (1) EACH 30 A - 2 POLE BREAKER (A-6) FOR HEATER PROVIDE 1 #6 BARE COPPER GROUND
- 5 ELECTRIC UNIT HEATER, "QMARK" #MUH-05-21 WITH WALL MOUNTED THERMOSTAT AS SHOWN AND #MB10 WALL MOUNTED BRACKET, MOUNT UP 7'-6" TO TOP OF UNIT, 240V, 1#, 5KW
- 6 ELECTRIC METER AND 100 A - 2 POLE, NEMA-3R DISCONNECT FUSED AT 100 AMPS (SEE POWER RISER DIAGRAM)
- 7 3 #2 THWN PLUS 1 #6 GROUND IN 2" CONDUIT
- 8 100 AMP METER BASE
- 9 MAIN SERVICE DISCONNECT, 100 A - 2P + SN, NEMA-3R, FUSED AT 100 AMPS
- 10 1 #6 BARE COPPER IN 1/2" CONDUIT
- 11 WEATHER HEAD AND SERVICE ATTACHMENT
- 12 3 #2 THWN PLUS 1 #6 GROUND IN 2" CONDUIT
- 13 SCADA SYSTEM AND COMMUNICATION CENTER INCLUDES STEP DOWN TRANSFORMERS, RELAYS, AND RADIO EQUIPMENT (SEE REQUIREMENTS). PROVIDE AND ADDITIONAL JUNCTION CABINETS AS REQUIRED.
- 14 120 V SOLENOID AND VALVE POSITION INDICATOR FOR FLOW CONTROL VALVE OPERATION. ENERGIZE TO OPEN (SEE PIPING PLAN SHEET 3-1)
- 15 HAND-OFF-AUTO (HOA) SWITCH FOR SOLENOID CONTROL
HAND- MANUALLY ENERGIZED SOLENOID, VALVE OPEN
OFF- MANUALLY DE-ENERGIZED SOLENOID, VALVE CLOSED
AUTO- SCADA CONTROLLED SOLENOID, OPENING AND CLOSING VALVE
- 16 DOOR SWITCH FOR SITE SECURITY PER SCADA REQUIREMENTS
- 17 HIGH QUALITY WALL MOUNTED THERMOSTAT FOR HEATER. RUN 18 GAUGE WIRING IN 1/2" CONDUIT.
- 18 SCADA CONTROL WIRING - 16 GAUGE SHIELDED CABLE IN 1/2" CONDUIT FROM SENSOR TO SCADA SYSTEM AS REQUIRED

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	FLUORESCENT OUTLET AND FIXTURE.
	SINGLE POLE WALL SWITCH, MOUNT 48" ABOVE FLOOR
	JUNCTION BOX, HEIGHT AS INDICATED WITH CONNECTION TO EQUIPMENT.
	DUPLEX CONVENIENCE OUTLET, UP 18" OR AS INDICATED. OUTDOOR OUTLETS SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE WITH WEATHER PROOF COVERS
	PHONE OUTLET - NOT REQUIRED
	REMOTE FLOW METER DISPLAY W/ OUTPUT AS REQUIRED FOR SCADA OPERATION.
	CIRCUIT BREAKER PANEL BOARD.
	TIC MARKS REPRESENT: NEUTRAL, HOT, SWITCH LEG AND GROUND CONDUCTORS RESPECTIVELY.
	HOME RUN TO PANEL WITH BRANCH CIRCUIT NUMBERS INDICATED.
	SCADA SYSTEM - SEE REQUIREMENTS

PANEL "A" SCHEDULE

120/240V, 1 PHASE, 150A, 3 POLE MAIN BREAKER, NEMA-4.

CIRCUIT	BREAKER	WIRE	LOAD	VOLTS	PHASE	AMPS	WATTS
1, 2, 3	20A-1P	#12	LIGHTS AND OUTLETS	120	1	-	1000
4	20A-1P	#12	SOLENOID CONTROL	120	1	-	200
5	20A-1P	#12	SCADA SYSTEM	120	1	-	500
6	30A-2P	#10	HEATER	240	1	-	5000
7, 9, 10	-	-	SPARES	120	1	-	3000

SCADA REQUIREMENTS

THE CITY CURRENTLY UTILIZES A SCADA SYSTEM BY MOTOROLA FOR SUPERVISORY CONTROL AND DATA ACQUISITION OF WATER PRODUCTION FACILITIES. RTU UNITS ARE LOCATED AT FACILITIES AND IN THE WELL FIELDS WITH RADIO COMMUNICATION TO TWO NETWORKED COMPUTER STATIONS IN THE CITY.

THIS PROJECT CONSISTS OF INSTALLING A COMPATIBLE RTU UNIT AT THE FLOW CONTROL STATION COMPLETE WITH ALL APPURTENANCES AND HARDWARE TO PROVIDE FUNCTIONS DESCRIBED BELOW. ALL SENSORS, RELAYS, TERMINAL STRIPS AND WIRING SHALL BE PROPERLY INTERFACED WITH FLOW METER DISPLAY AND OTHER ELECTRICAL EQUIPMENT AS REQUIRED. REQUIRED SOFTWARE PROGRAMMING BY EXPERIENCED PERSONNEL SHALL ALSO BE REQUIRED TO MAKE THE SCADA SYSTEM FOR THE FLOW CONTROL STATION FUNCTIONAL.

REQUIREMENTS FOR FLOW CONTROL STATION SCADA SYSTEM:

ITEM

SUPERVISORY CONTROL:
OPEN/CLOSE FLOW CONTROL VALVE

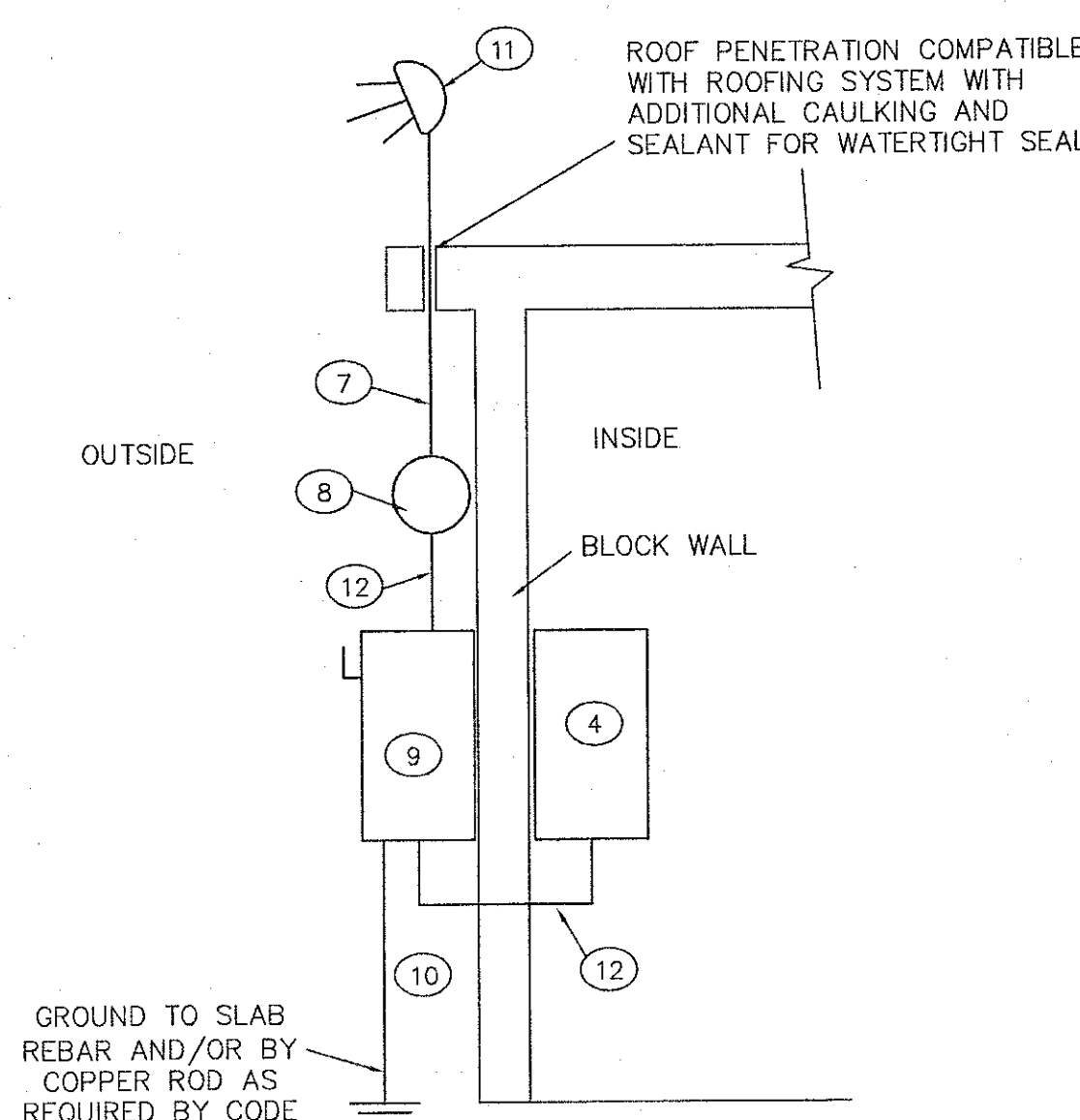
DATA ACQUISITION:
SITE POWER ON - OFF
SECURITY OK - BREACHED
FLOW CONTROL
VALVE POSITION
VIA INDICATOR OPEN-CLOSED

THE RTU SHALL CONTAIN BATTERIES, A POWER SUPPLY/CHARGER MODULE, A CPU MODULE, MODULES FOR DIGITAL I/O AND AN ANALOG MODULE WITHIN A NEMA 4, WALL MOUNTED ENCLOSURE. MODULES FOR 16 DIGITAL INPUT, 16 DIGITAL OUTPUT AND 8 ANALOG INPUT SHALL BE PROVIDED.

THE RTU UNIT PROVIDED SHALL BE SELECTED BY CITY.

ELECTRICAL PLAN NOTES:

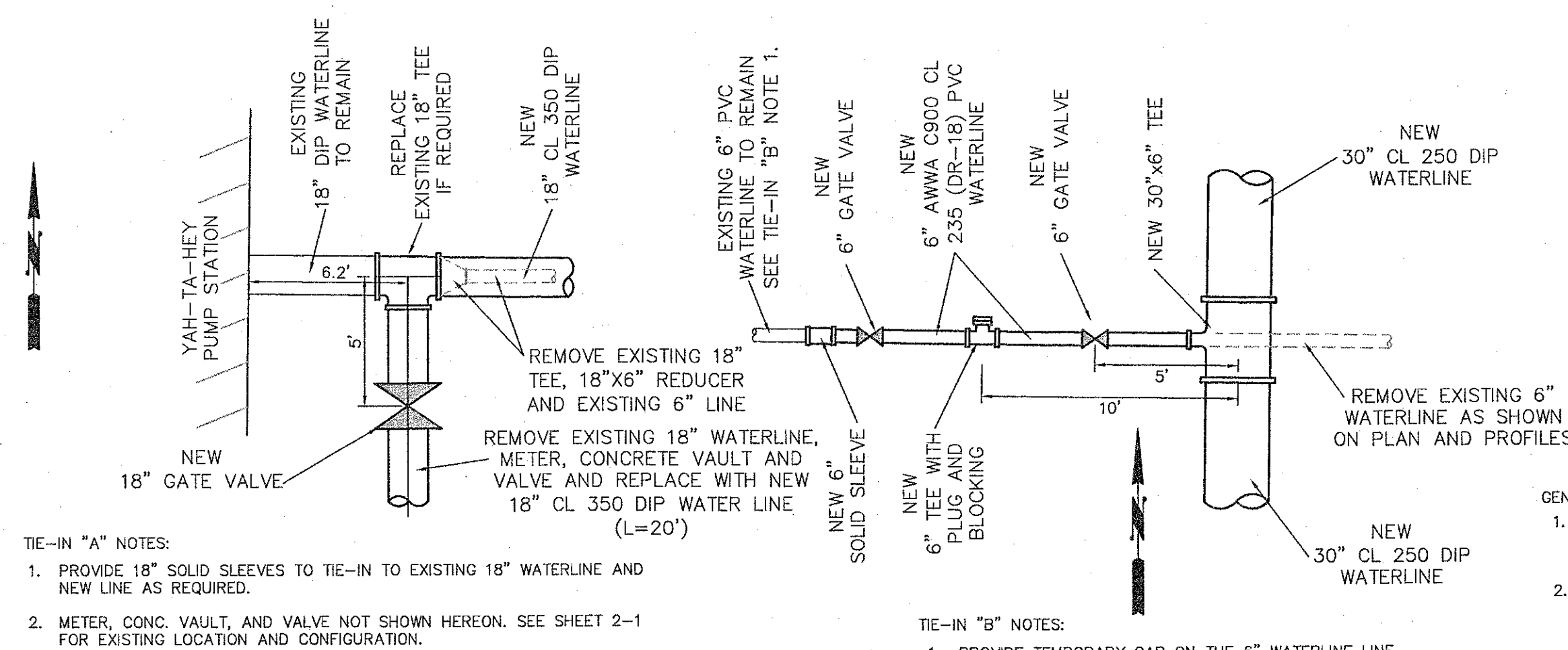
- 1 ELECTRICAL POWER RISER/SERVICE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONDUCTORS AND SUPPORT CABLE FOR OVERHEAD SERVICE FROM WEATHERHEAD TO TRANSFORMER SHALL BE PROVIDED BY THE CONTRACTOR. THE CITY SHALL CONNECT OVERHEAD SERVICE TO TRANSFORMER.
- 2 ALL ELECTRICAL WORK SHALL CONFORM TO THE NEC ELECTRIC CODE AND THE CITY OF GALLUP REQUIREMENTS.
- 3 RADIO ANTENNAS ARE TO BE INSTALL AS REQUIRED. ANTENNAS ARE NOT SHOWN HEREON
- 4 COMMUNICATION-ALARM DIALER TO BE WIRELESS WITH A BATTERY BACKUP. (IF REQUIRED FOR SCADA ALARMS.)



POWER RISER DIAGRAM
NTS

CAUTION
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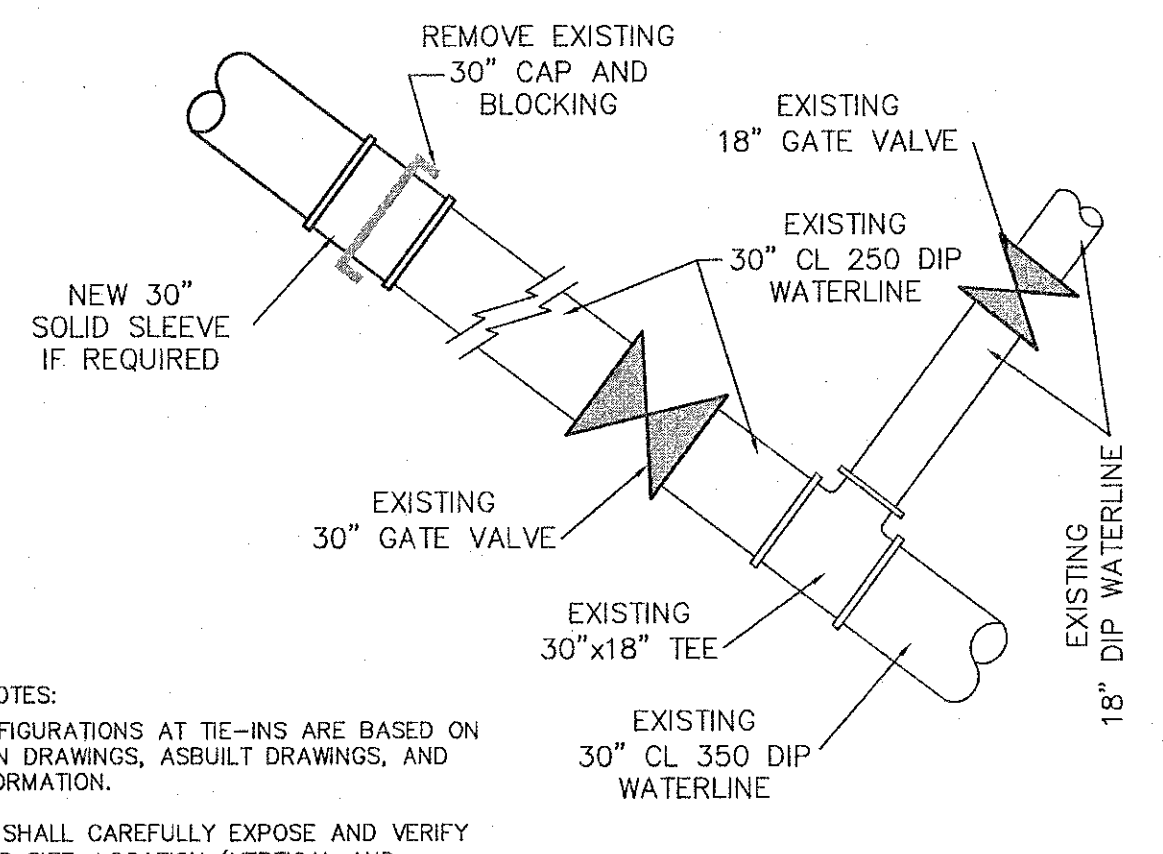


TIE-IN "A"
YAH-TA-HEY PUMP
STATION TIE-IN

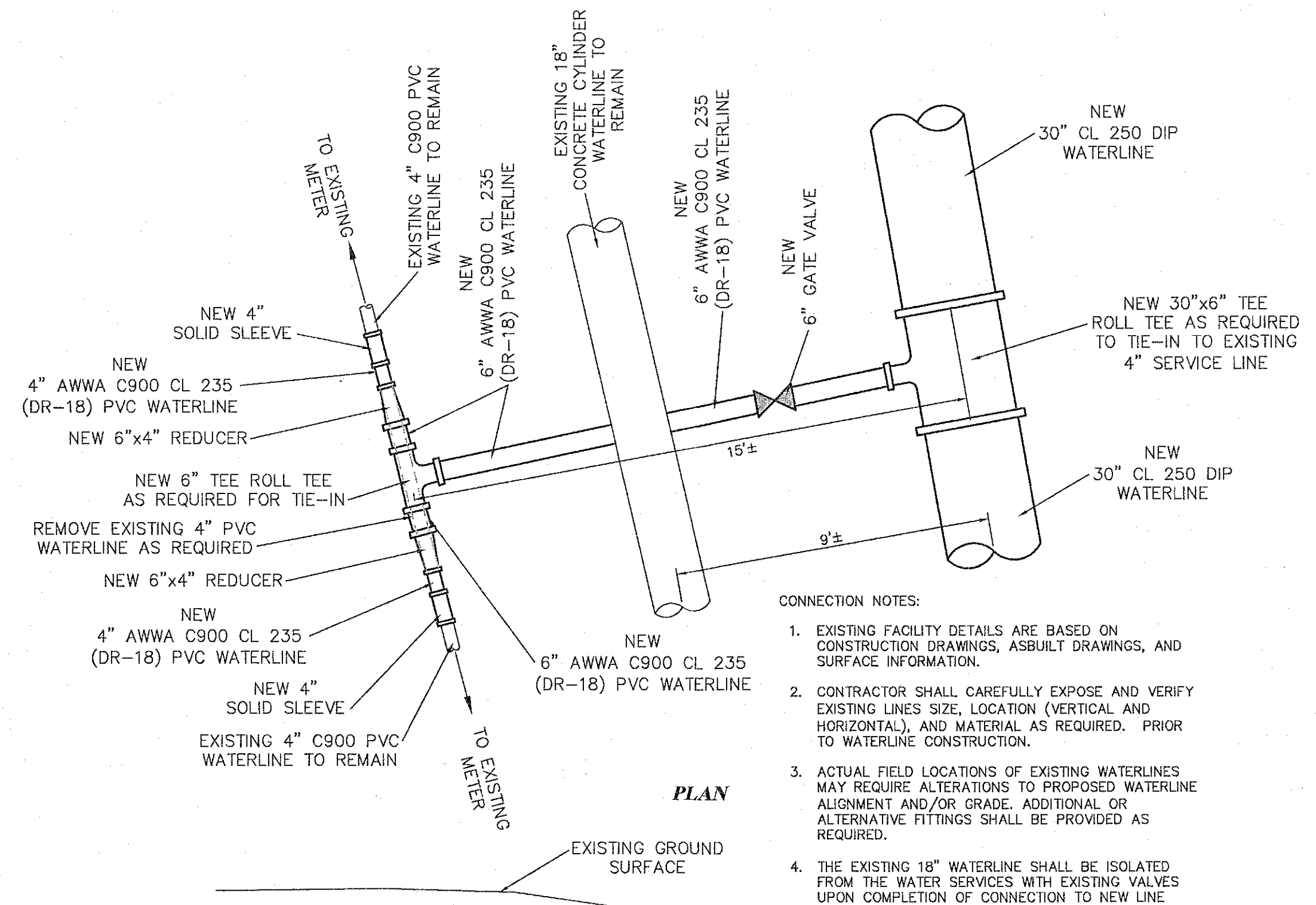
TIE-IN "B"
30" WATERLINE STA. 120+85.84
6" AND 30" WATERLINES

GENERAL TIE-IN NOTES:

1. EXISTING CONFIGURATIONS AT TIE-INS ARE BASED ON CONSTRUCTION DRAWINGS, ASBUILT DRAWINGS, AND SURFACE INFORMATION.
2. CONTRACTOR SHALL CAREFULLY EXPOSE AND VERIFY EXISTING LINES SIZE, LOCATION (VERTICAL AND HORIZONTAL), AND MATERIAL AS REQUIRED. PRIOR TO WATERLINE CONSTRUCTION.
3. ACTUAL FIELD LOCATION OF EXISTING WATERLINES MAY REQUIRE ALTERATIONS TO PROPOSED WATERLINE ALIGNMENT AND/OR GRADE. ADDITIONAL OR ALTERNATIVE FITTINGS SHALL BE PROVIDED AS REQUIRED.



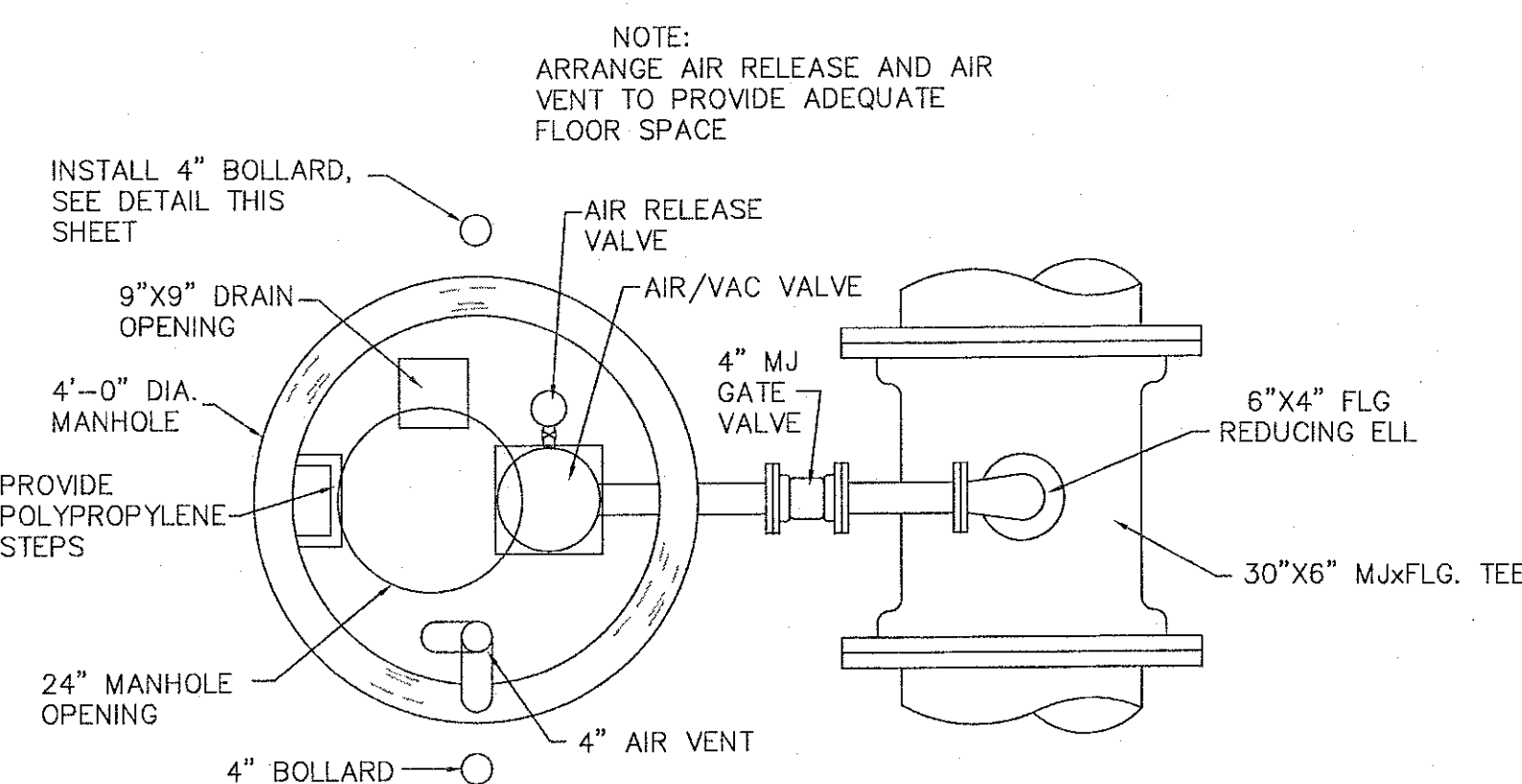
TIE-IN "C"
30" WATERLINE STA. 179+66
30" WATERLINES



WATER SERVICE CONNECTION DETAIL @ STA. 87+15.50
NTS

KEYED ARV NOTES:

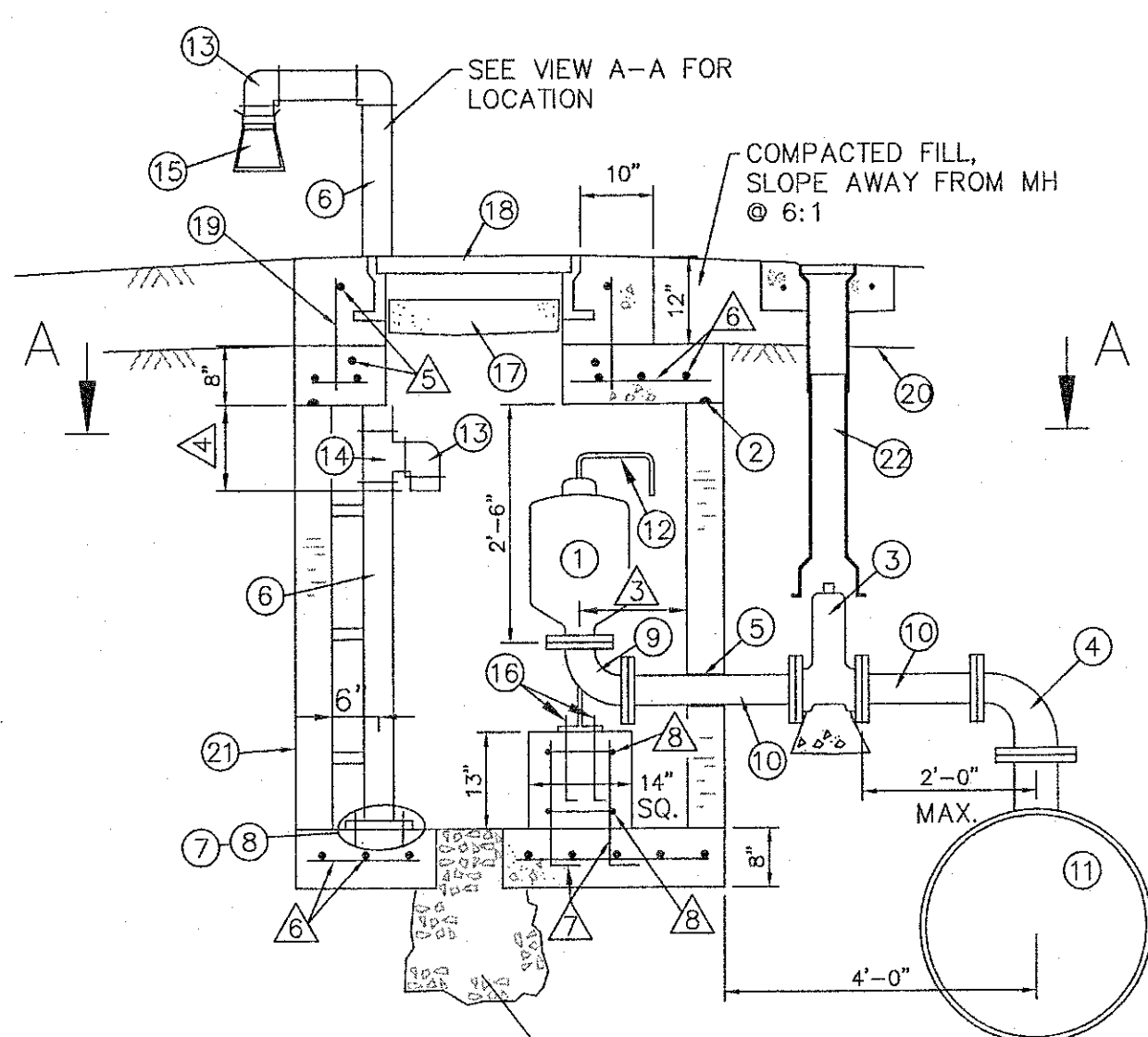
1. PIPING ON EACH SIDE OF TEE TO GRADE UP TO TEE TO PROVIDE AIR TRAP ON HILL TOPS. ARV TEES ON SLOPES MAY BE SLOPED UP TO 6°.
2. EXTRA #5 ALL AROUND COVER OR PIPE W/ 12" LAP
3. MINIMIZE DISTANCE TO PROVIDE VAULT SPACE WITHOUT COMPROMISING ACCESS TO FLANGE BOLTS ETC.
4. MINIMIZE DISTANCE
5. #5 ALL AROUND W/ 12" LAP
6. #5@6" EACH WAY, CENTER IN SLAB
7. 4-#5 'L' SHAPED REBAR
8. 2-#4 HOOPS W/ LAP



VIEW A-A

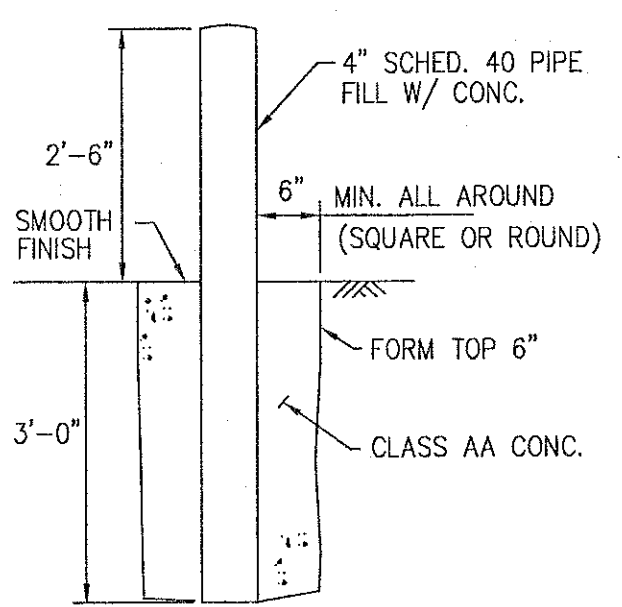
ARV FITTING SCHEDULE:

1. 4" VAL-MATIC DUAL BODY TYPE COMBINATION AIR VALVE MODEL 154/38.5 (OR EQUAL)
2. ASPHALTIC OR BUTYL ROPE SEALANT
3. 4" MJXMJ AWWA 509 RES. WEDGE GATE VALVE W/ MEGA-LUG OR EQUAL GLANDS
4. 6"x4" FLG REDUCING ELL
5. 30# FELT AROUND PIPE AND CAST IN WALL
6. 4" SCHD 40. THREADED GALV. IRON PIPE WITH MALLEABLE IRON FITTINGS
7. 4-#6 RED HEAD STAINLESS STEEL SLEEVE ANCHORS
8. 4" THREADED REDUCING FLG ATTACHED TO FLOOR
9. 4" FLG 90° BASE ELL
10. 4" MJXPE DIP W/ UPWARD SLOPE TO ARV
11. 30"x6" MJ TEE
12. 1/2" GI PIPE
13. 4" 90° THRD GI ELL
14. 4" THRD GI TEE
15. 4"x6" THRD REDUCER WRAPPED W/ SS INSECT SCREEN & GALV HARDWARE CLOTH (1/2") EACH SIDE. HOLD IN PLACE WITH SS STRAP.
16. 4-5/8" ANCHOR BOLTS (12" LONG)
17. 4" FOAM INSULATING PAD BY MUELLER OR EQUAL
18. TRAFFIC MODEL RING & COVER ENCASED IN CONC. COLLAR
19. #4 DOWELS 6" INTO CONC. TOP @ 12" ALL AROUND
20. ORIG. GRADE OR FINISH GRADE ADJACENT TO ARV
21. APPLY TWO COATS BITUMINOUS DAMP PROOFING AS HENRY HE 794 OR EQUAL
22. VALVE BOX W/ REINFORCED CONC. COLLAR



TYPE 2A AIR RELEASE STATION ON 30" MAIN

NTS

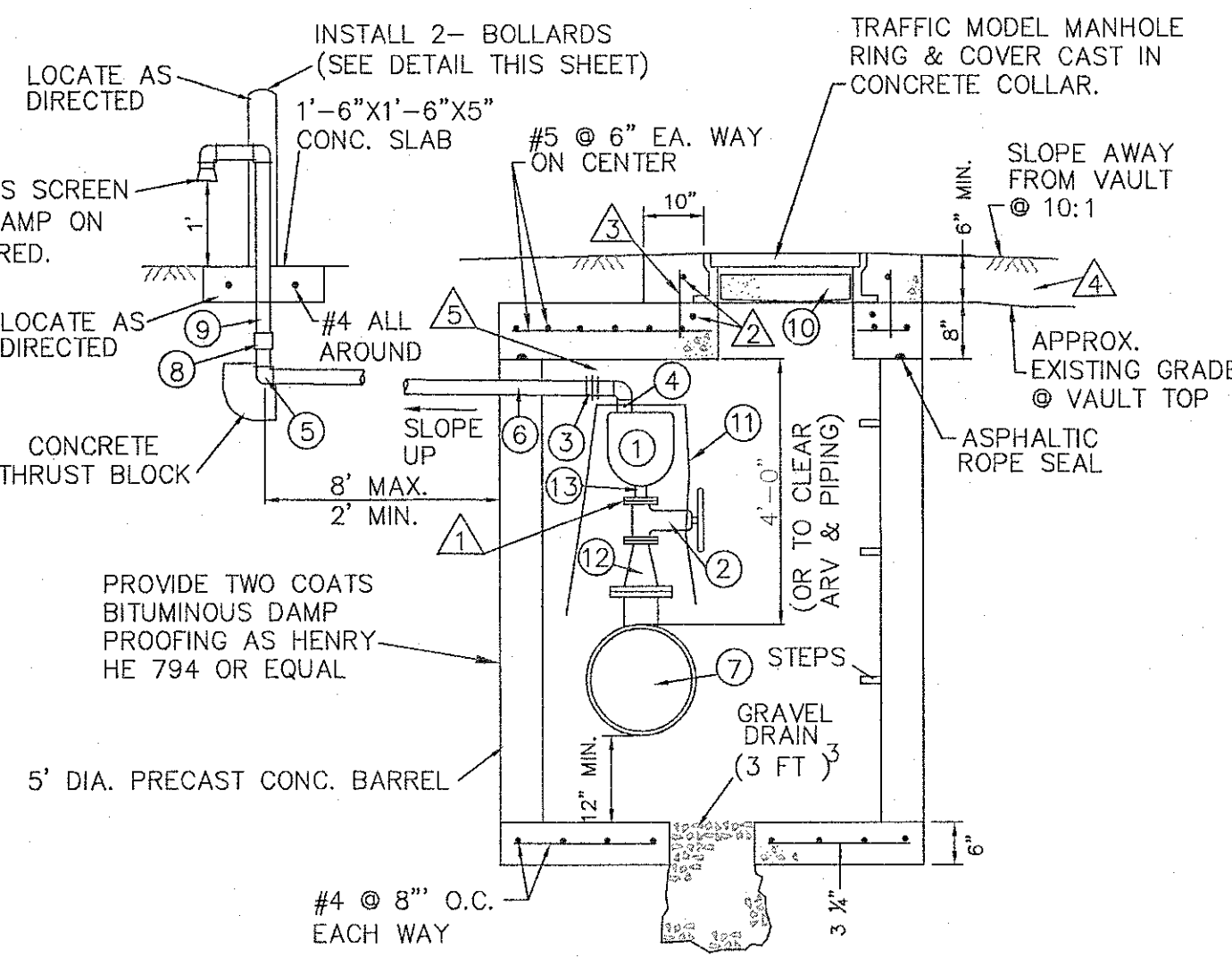


PAINT W/ TWO COMPONENT SYSTEM PER PROJECT SPECIFICATIONS

BOLLARD DETAIL
NTS

AIR RELEASE FITTING SCHEDULE:

1. 2" AIR RELEASE VALVE AS VAL-MATIC SINGLE BODY 2" COMBINATION VALVE MODEL 202C.2 OR EQUAL
2. AWWA 2" FLG.D RESILIENT WEDGE GATE VALVE
3. 2" PVC UNION
4. SCHD. 80 PVC NIPPLE
5. SCHD. 80 PVC ELL
6. 1" SCHED. 80 PVC, THREADED OR SOLVENT WELD JOINTS
7. LINE SIZE 6" M.J.X.FLG. TEE
8. 2" COUPLING
9. 2" GI PIPE WRAPPED W/ TAPECOAT BELOW GROUND
10. 4" FOAM INSULATING PAD BY MUELLER OR EQUAL
11. THERMAXX INSULATING JACKET OR EQUAL
12. 6"x2" FLG.D REDUCER
13. 2" THREADED x FLG. NIPPLE



TYPE 2 AIR RELEASE DETAIL

(FOR 18" PIPE LINE & SMALLER)

NTS

KEYED ARV NOTES:

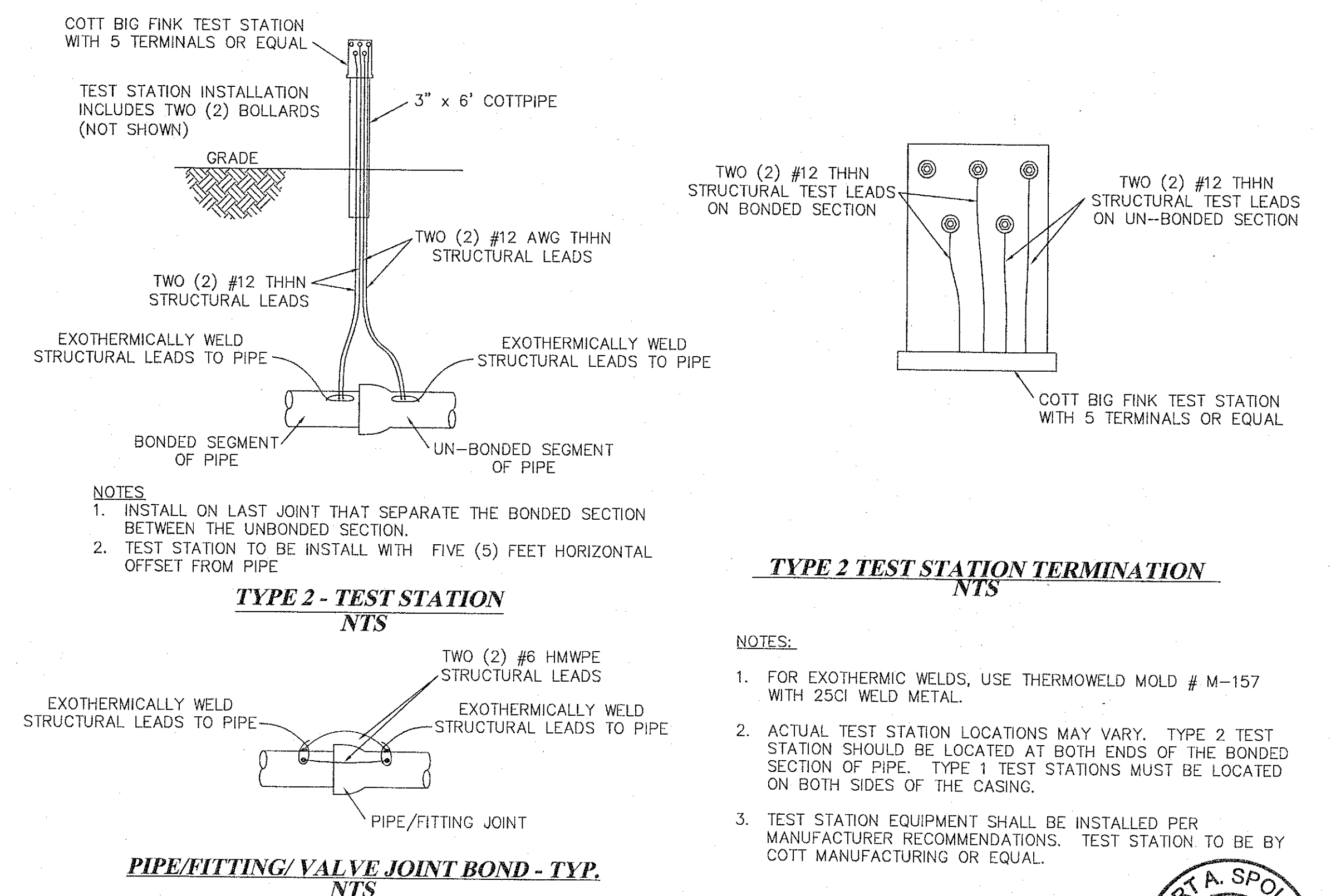
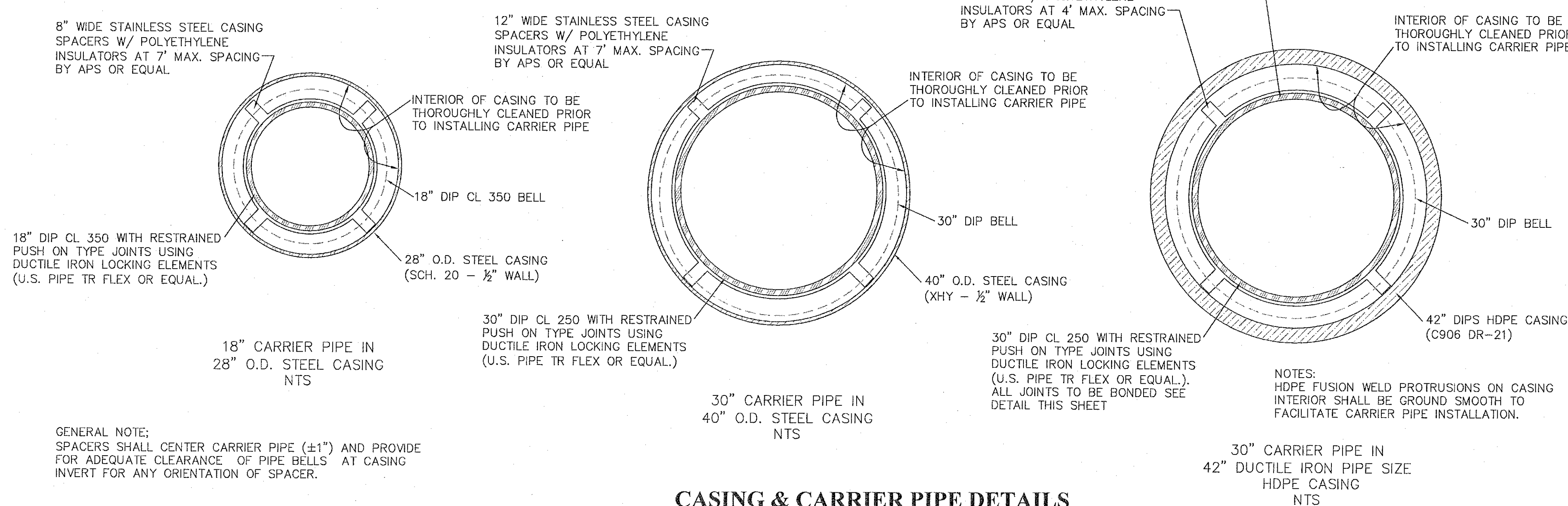
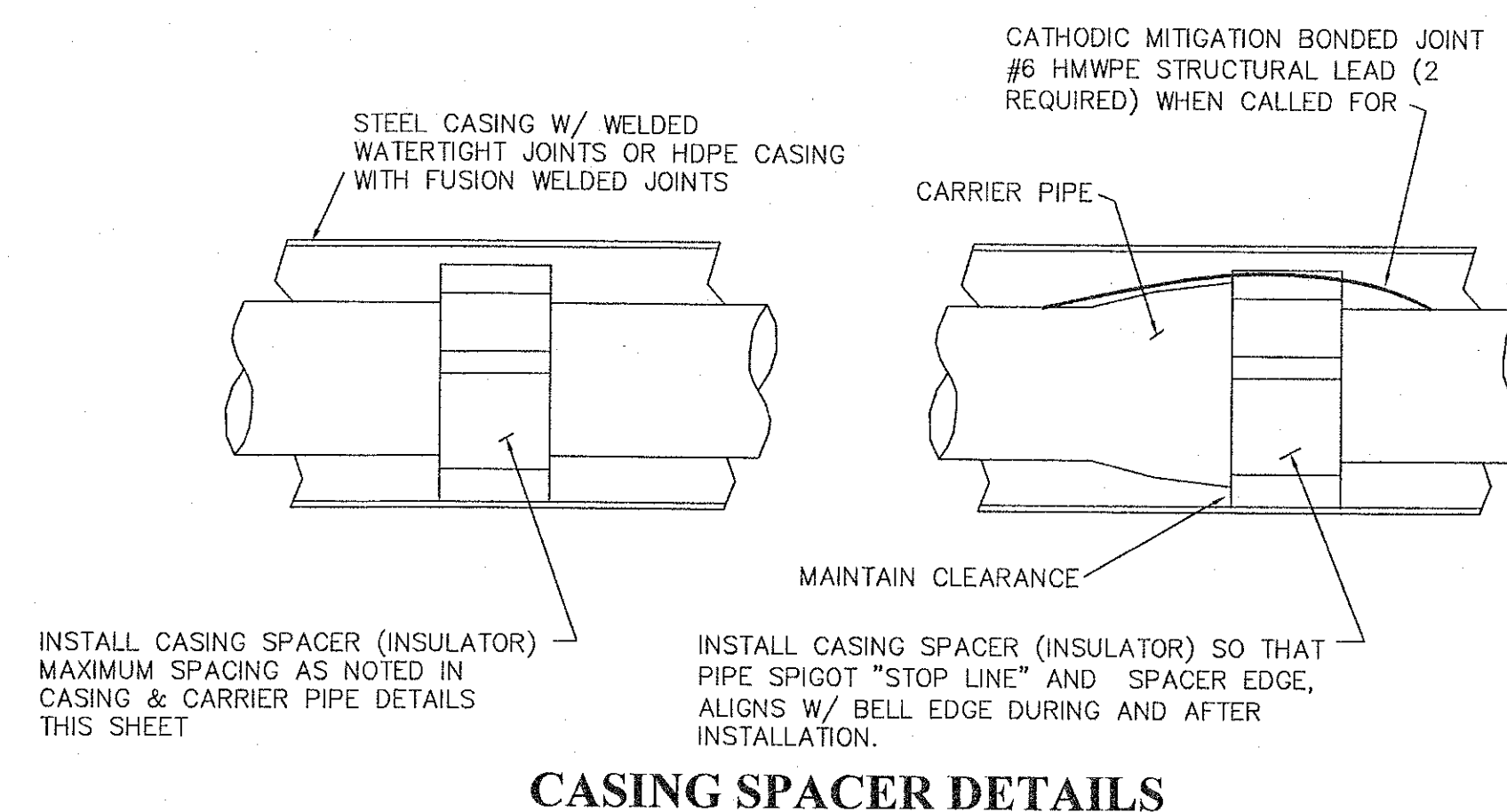
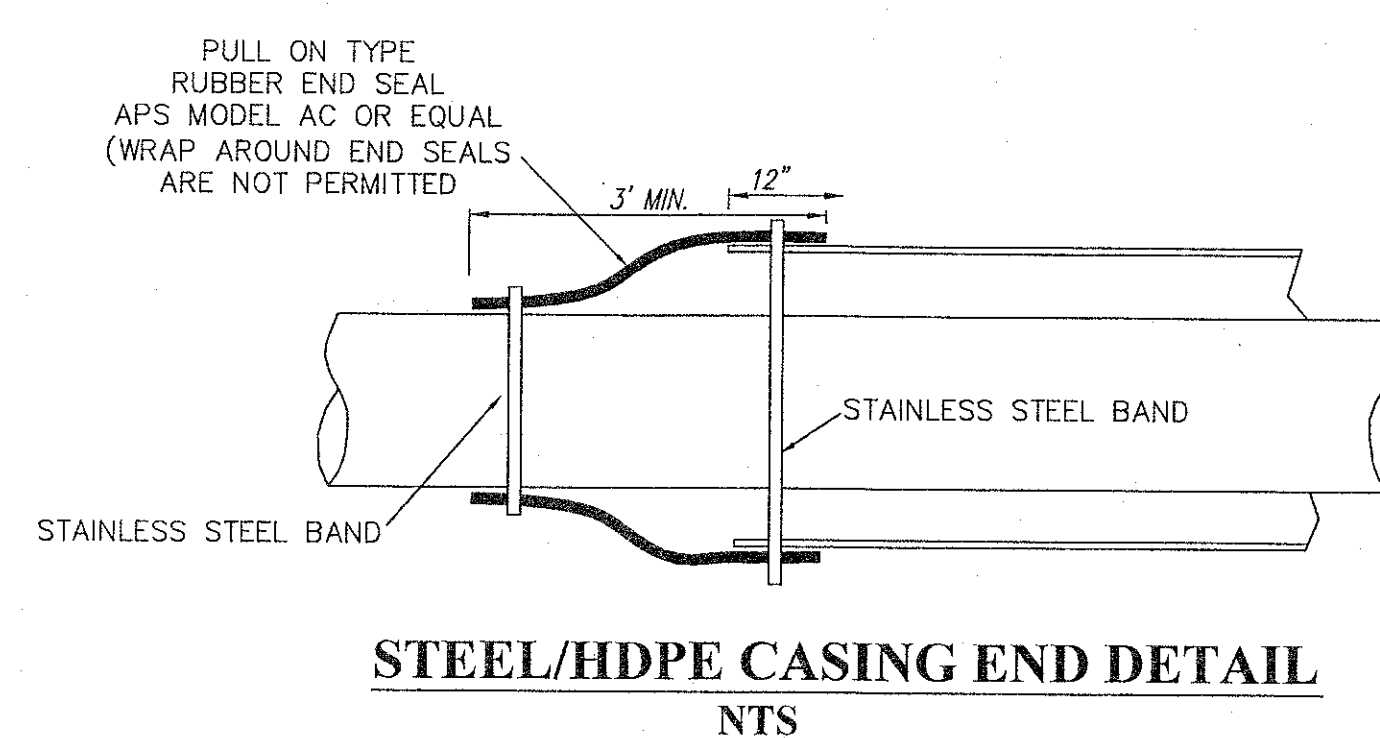
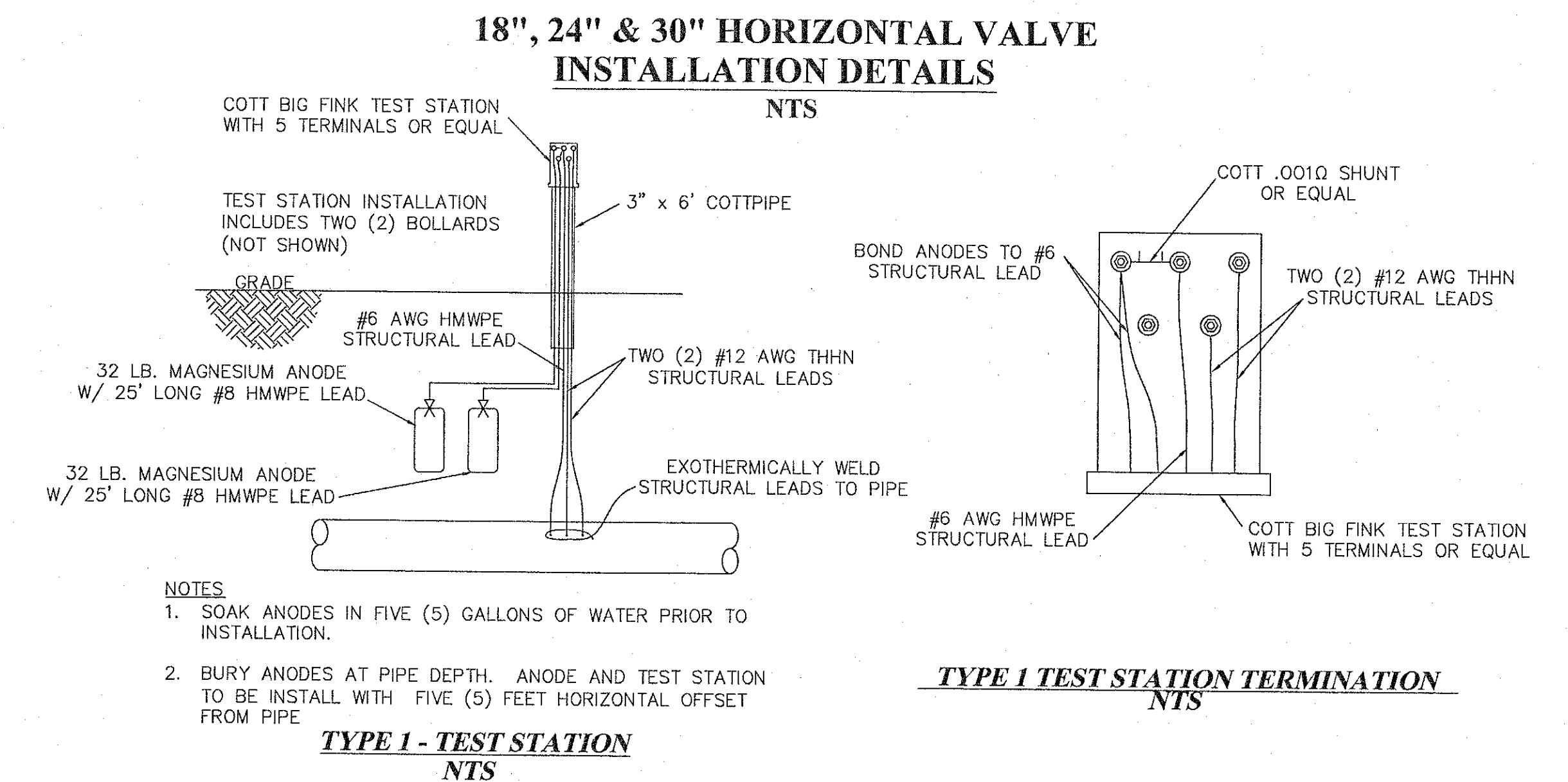
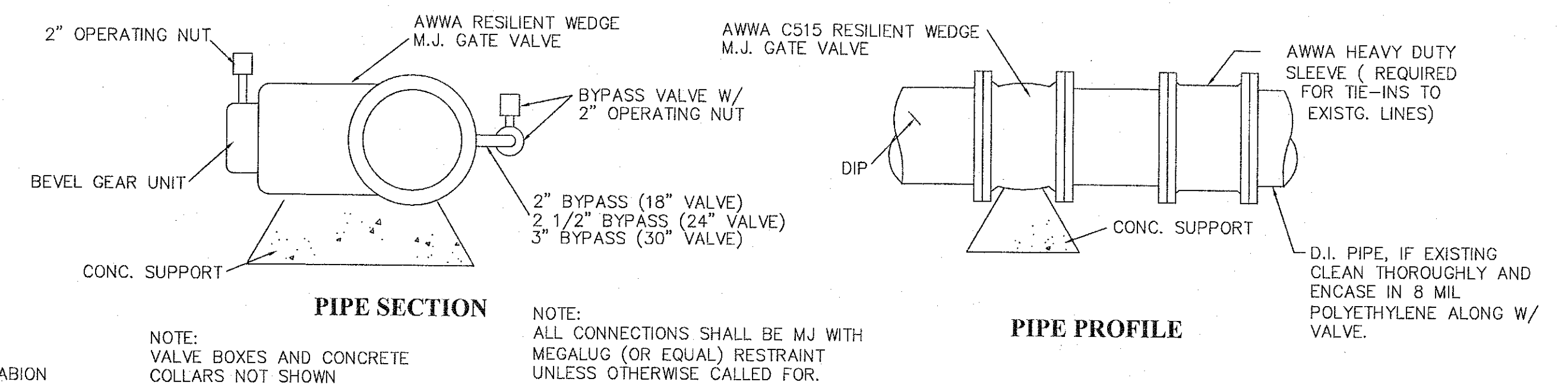
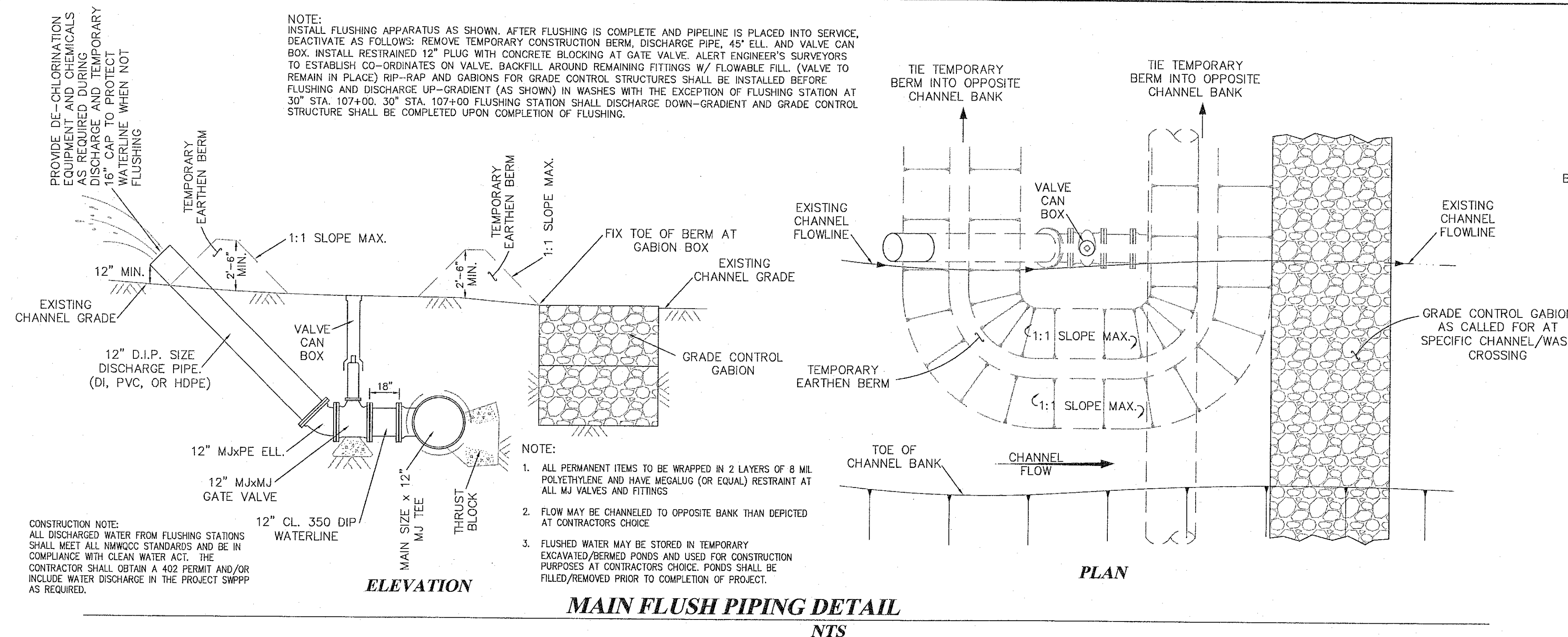
1. PIPING ON EACH SIDE OF TEE TO GRADE UP TO TEE TO PROVIDE AIR TRAP ON HILL TOPS. ARV TEES ON SLOPES MAY BE SLOPED UP TO 6° PROVIDED BEVELED FLANGE FILLERS ARE USED TO MAKE ARV STAND VERTICAL.
2. EXTRA #5 ALL AROUND W/ LAP
3. #4 BARS DRILLED INTO TOP (6") @ 12" SPACING AROUND
4. COMPACTED FILL
5. 4" MIN. CLEAR

CONSTRUCTION NOTES:

1. ALL FITTINGS, VALVES, SPECIALS, & PIPING FOR ARV SHALL BE RATED FOR 250 PSI WORKING PRESSURE
2. COMPACT FILL & BACKFILL TO 92% STANDARD PROCTOR
3. PROVIDE LIFTING LUGS OR HOLES FOR STRONG-BACKS AS REQ'D. FOR SETTING OR REMOVING VAULT LID.

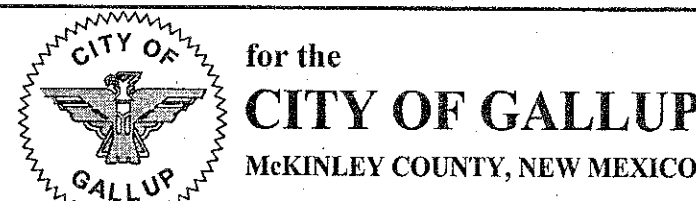
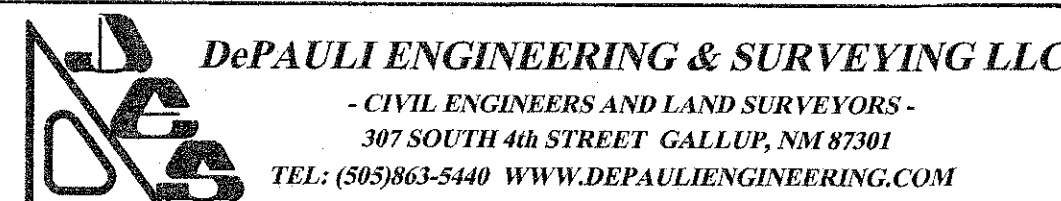
CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.



CAUTION
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811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

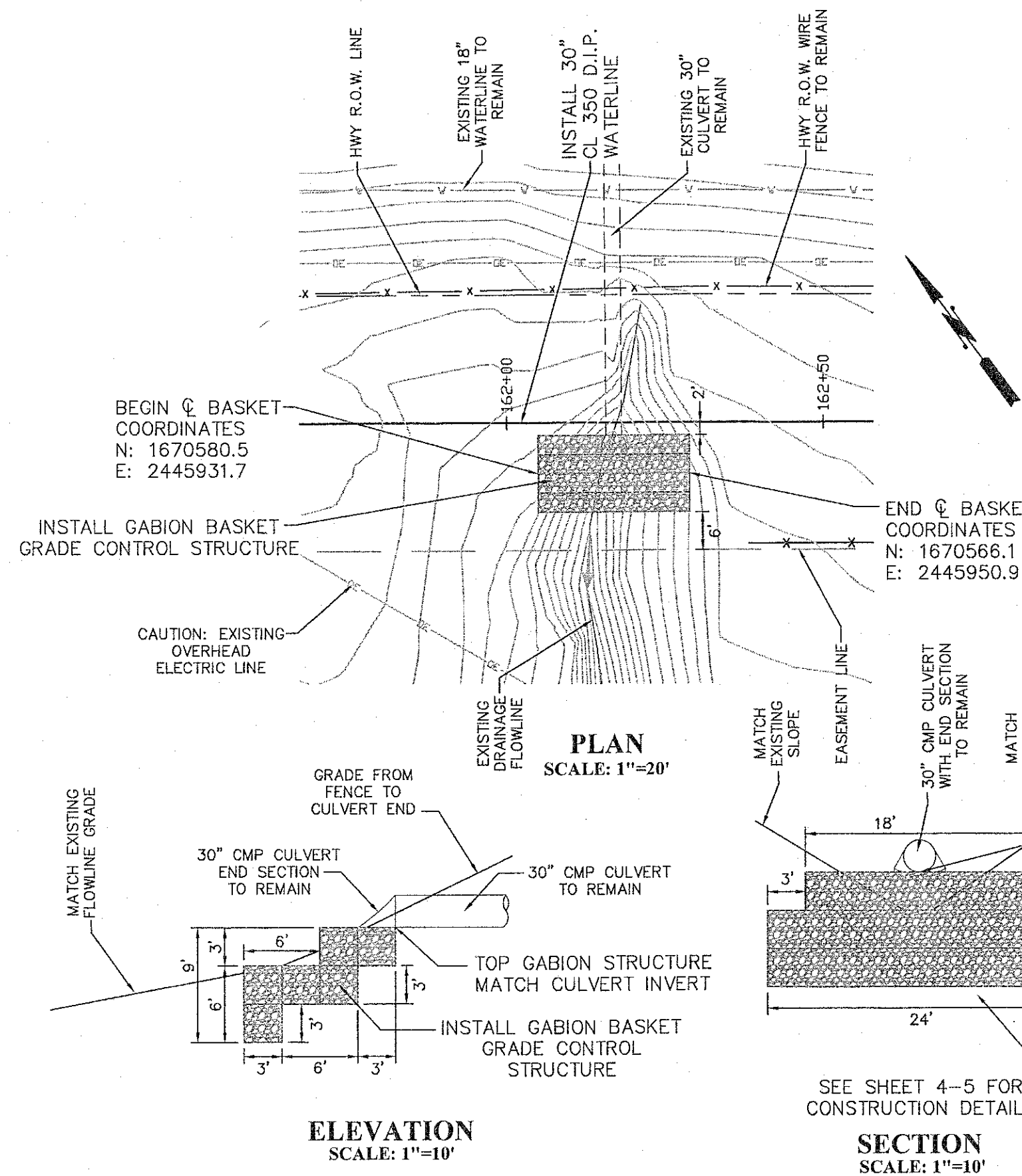


NO.	BY	DATE

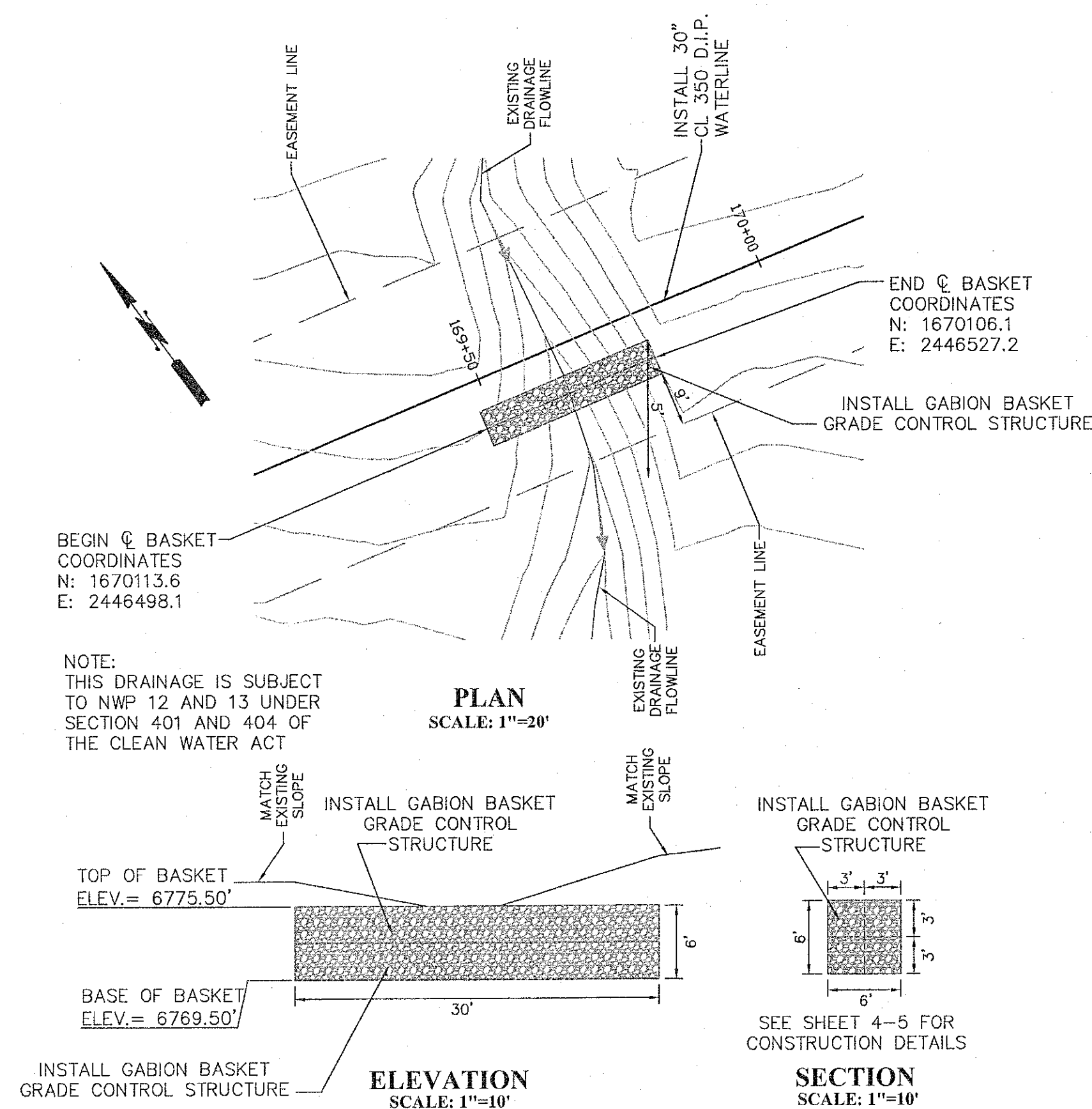
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 13
FORMAL BID NO. 1402

BORE & CASING, HORIZONTAL GATE VALVE & FLUSH PIPING DETAILS

SCALE:	SHOWN	SHEET 4-2
DATE:	MARCH 2014	
DRAWN BY:	KAS	
CHECKED BY:	MDP DS	



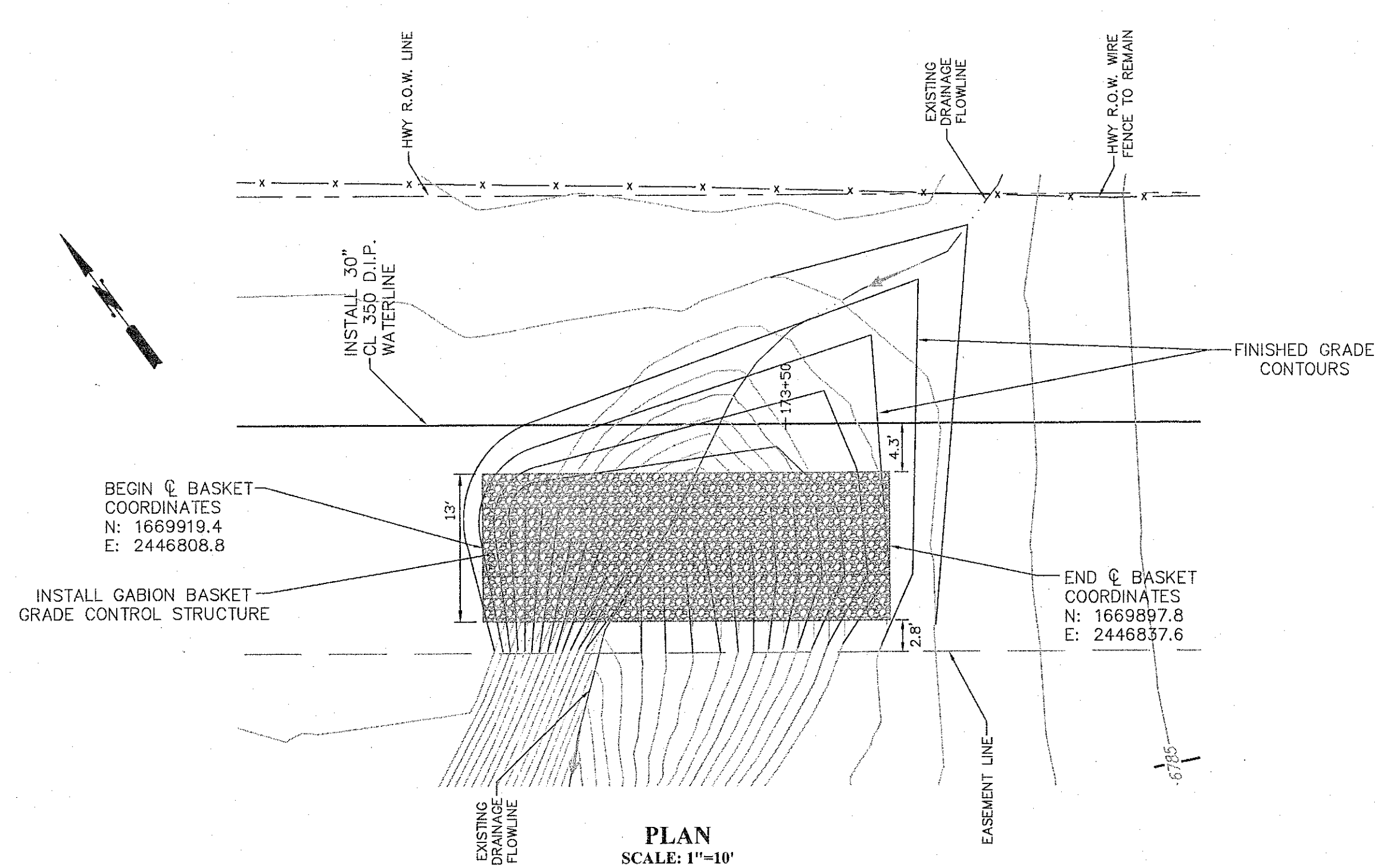
GABION GRADE CONTROL STRUCTURE @ STA. 162+17



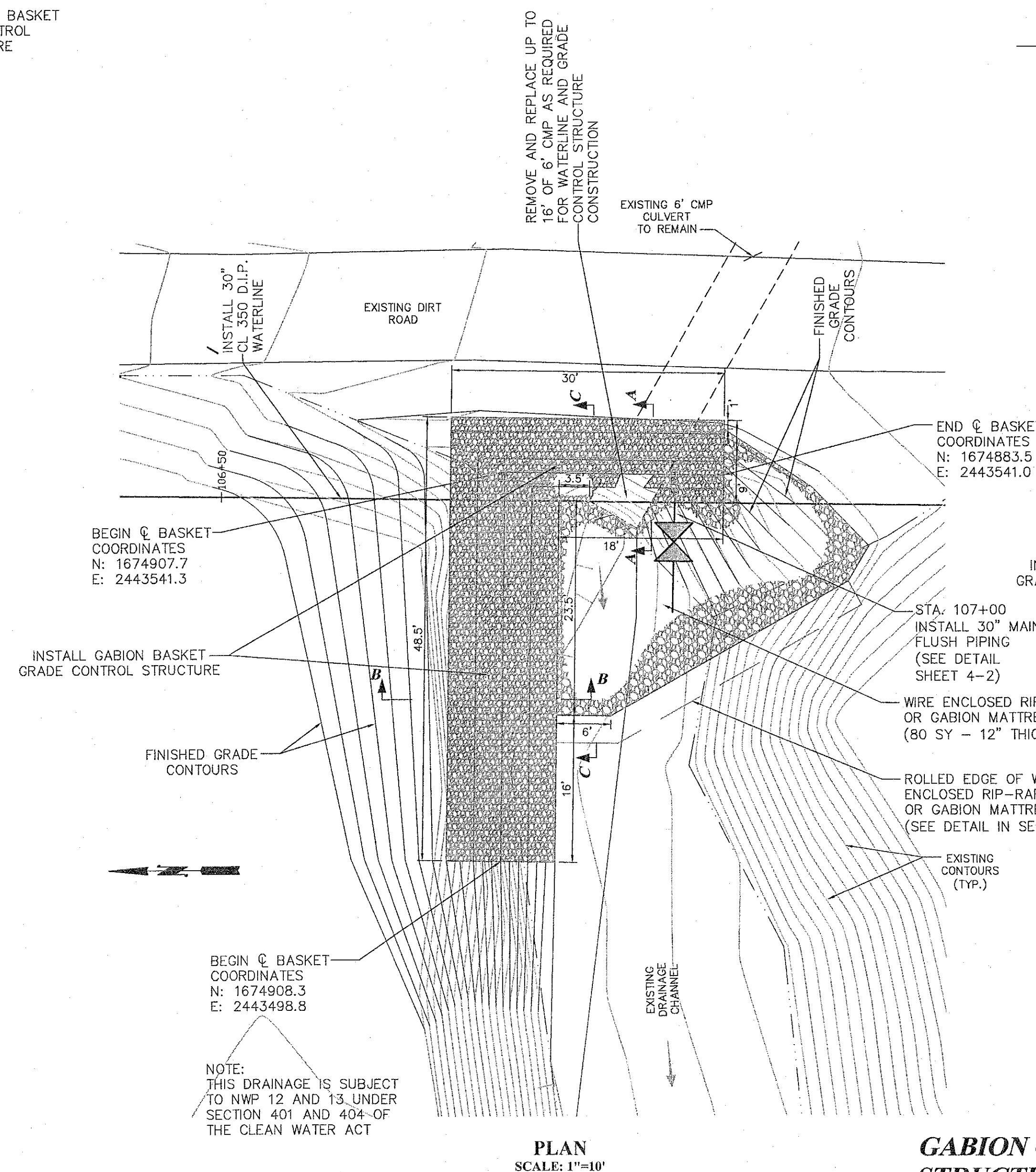
GABION GRADE CONTROL STRUCTURE @ STA. 169+63

CAUTION
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811
BEFORE YOU DIG!

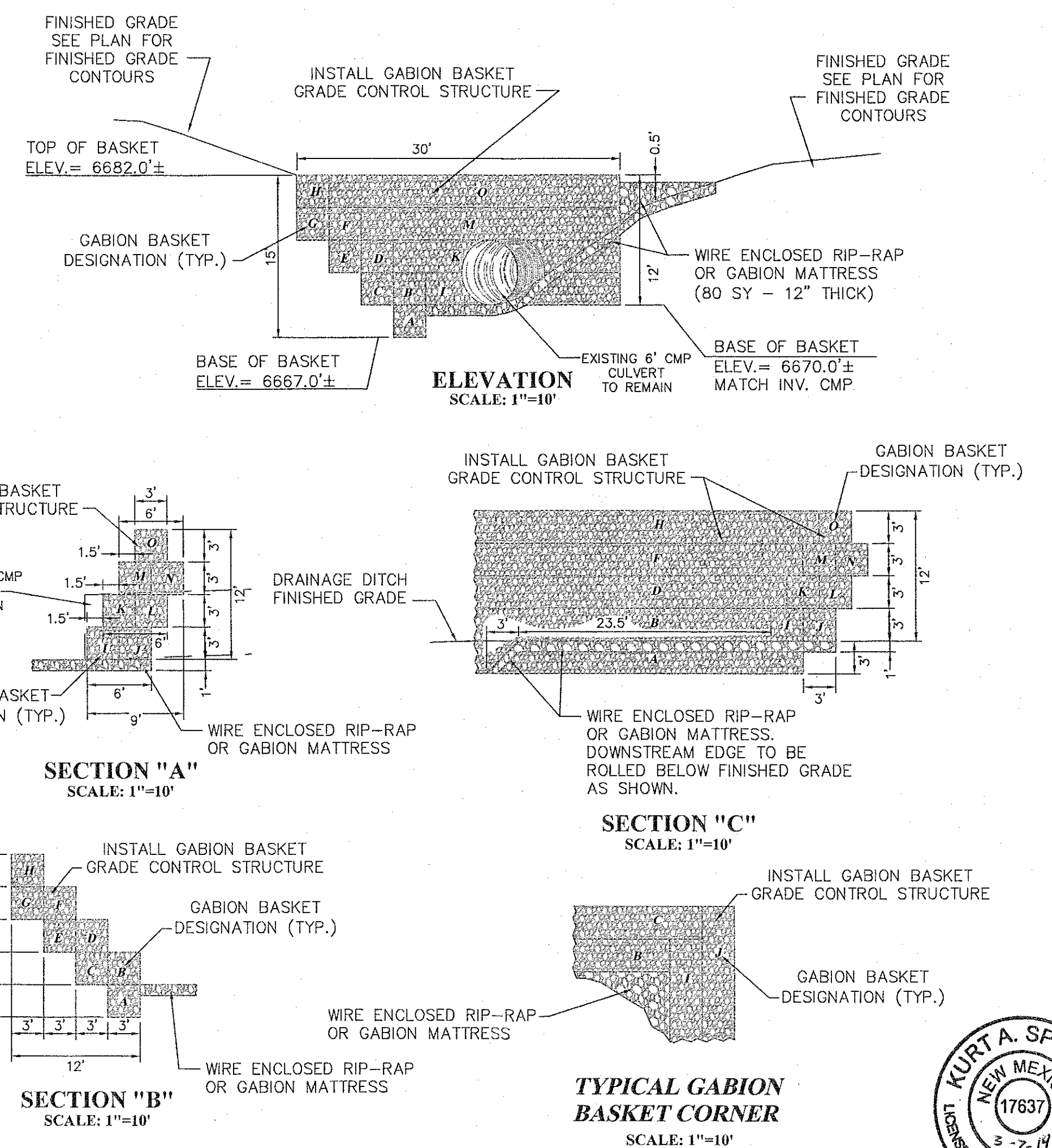
NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLIGNS THE OWNER TO MAKE PAYMENT WITHIN 60 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

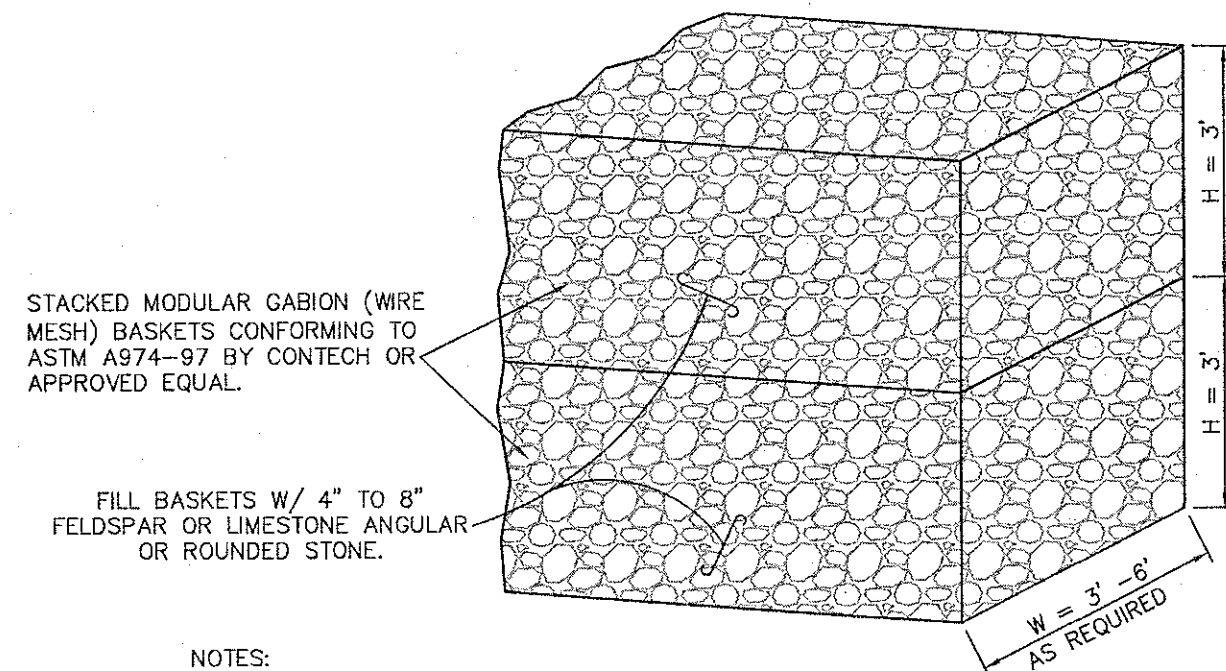


GABION GRADE CONTROL STRUCTURE @ STA. 173+41



GABION GRADE CONTROL STRUCTURE @ STA. 106+90





NOTES:

1. ASSEMBLE AND INSTALL GABION BASKETS PER MANUFACTURES RECOMMENDATIONS INCLUDING SPIRALS, CROSS TIES, LACING AND OTHER APPURTENANCES AS REQUIRED.
2. JOIN INDIVIDUAL BASKETS TO ONE ANOTHER PER MANUFACTURES RECOMMENDATIONS.
3. GEOTEXTILE FABRIC IS NOT REQUIRED FOR THIS INSTALLATION.

STACKED GABION BASKET DETAIL NTS

MODULAR GABION (WIRE MESH) BASKETS CONFORMING TO ASTM A974-97 BY CONTECH OR APPROVED EQUAL.

FILL BASKETS W/ 4" TO 8" FELDSPAR OR LIMESTONE ANGULAR OR ROUNDED STONE.

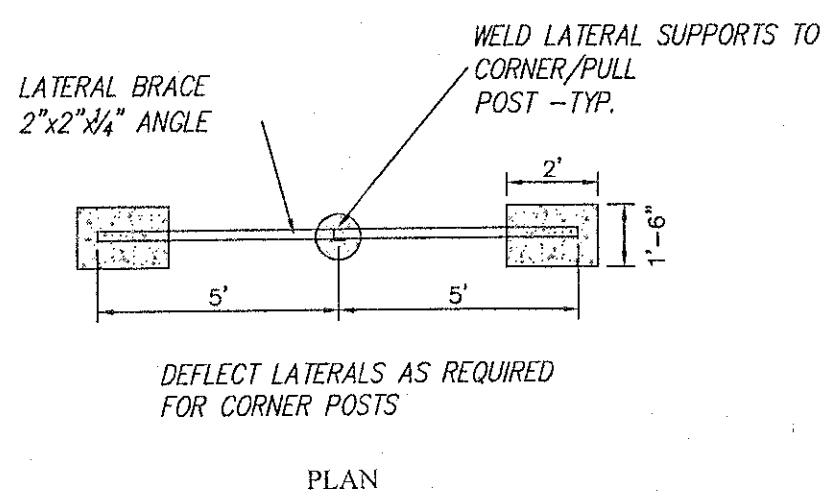
NOTES:

1. ASSEMBLE AND INSTALL GABION BASKETS PER MANUFACTURES RECOMMENDATIONS INCLUDING SPIRALS, CROSS TIES, LACING AND OTHER APPURTENANCES AS REQUIRED.
2. JOIN INDIVIDUAL BASKETS TO ONE ANOTHER PER MANUFACTURES RECOMMENDATIONS.
3. GEOTEXTILE FABRIC IS NOT REQUIRED FOR THIS INSTALLATION.

2 CELL GABION BASKET DETAIL NTS

WIRE FENCING NOTES:

1. INSTALL NEW METAL POSTS AT 10' SPACING, PULL POSTS AT 350' MAX OR CHANGE OF DIRECTION AND CORNER POSTS AT ALL CORNERS.
2. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF PAINT TO MATCH EXISTING METAL PAINT.
3. IN LIEU OF WELDING CONTRACTOR MAY AT HIS OPTION FASTEN LATERAL BRACE TO CORNER OF PULL POST WITH 1/2" GALVANIZED BOLTS INCLUDING LOCKING WASHERS AND NUTS.

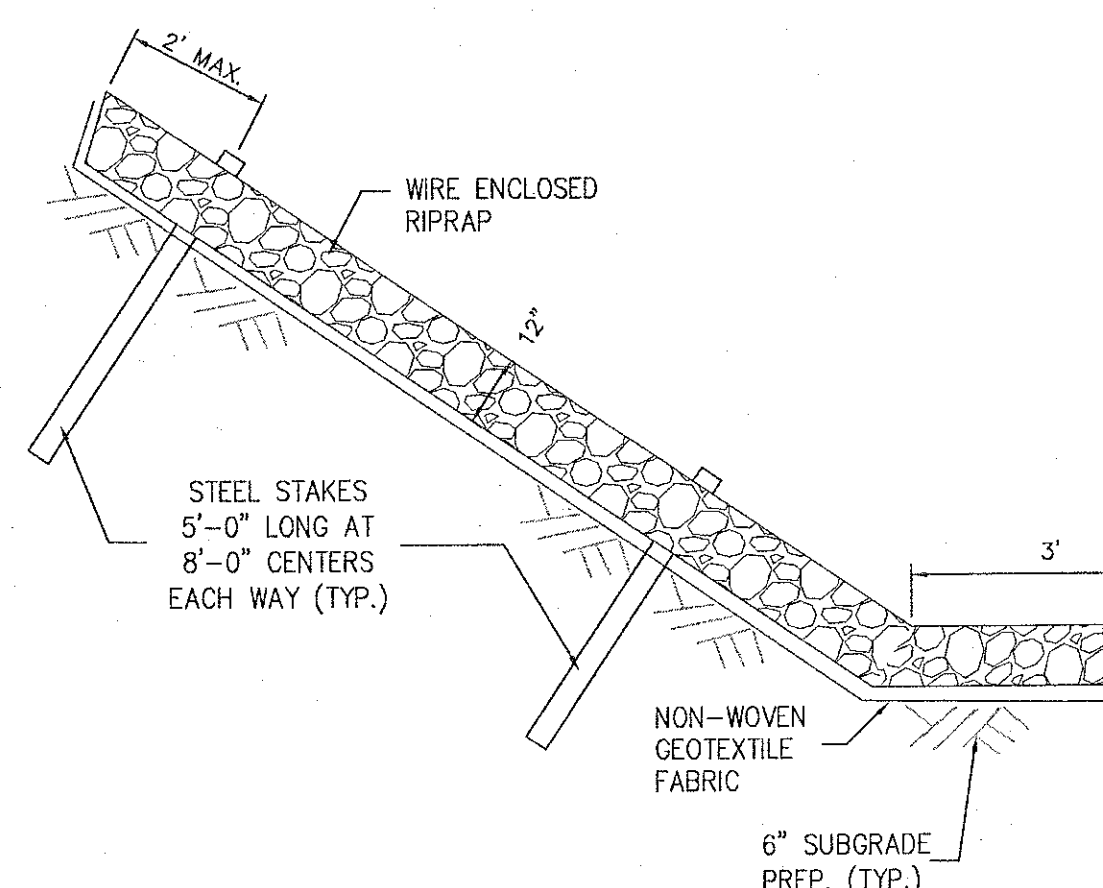


WOVEN WIRE FENCE CORNER AND PULL POST DETAIL NTS

RIP-RAP NOTES

1. WIRE FABRIC FOR RIPRAP SHALL BE "W" OR HEXAGONAL MESH MEETING THE REQUIREMENTS LISTED IN THE SPECIFICATIONS.
2. STEEL STAKES MAY BE RAILROAD RAILS, WEIGHING NOT LESS THAN 30LBS. PER YARD, 4" O.D. STANDARD STRENGTH GALVANIZED STEEL PIPE OR 4x4x3/8 STEEL ANGLES. STEEL STAKES SHALL PROJECT 3" ABOVE TOP OF RIPRAP. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK AND NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
3. IF LENGTH OF SLOPE IS 15' OR LESS, ONLY ONE ROW OF STEEL STAKES 2' FROM THE TOP EDGE OF THE RIPRAP WILL BE REQUIRED UNLESS OTHERWISE NOTED ON PLANS.
4. T-12" UNLESS OTHERWISE SHOWN ON PLANS. T-18" AT BRIDGES.
5. LONGITUDINAL SPLICES MAY BE MADE WITH ON LAP OF GALVANIZED 9 GAGE TIE WIRE, 9 GAGE GALVANIZED HOG RINGS OR 1 1/2 INTERLOCKING WIRE CLIPS.
6. 10' WIDE SECTION SHALL HAVE A MIN. TWO (20) STEEL STAKES HORIZONTALLY @ 8' VERTICALLY.

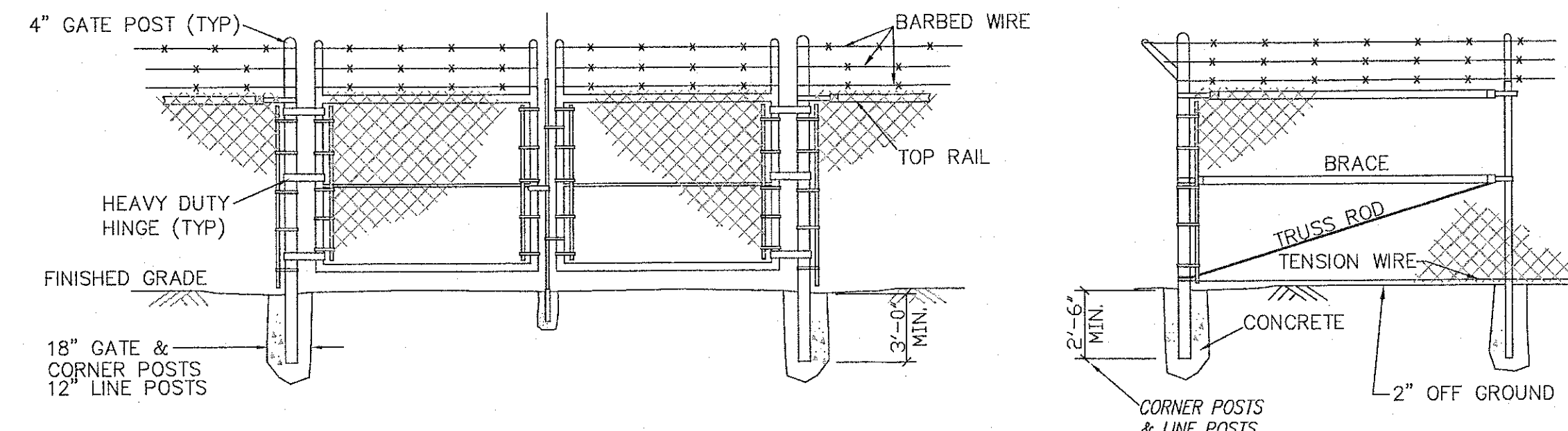
RIP-RAP DETAILS NTS



CHAIN LINK FENCING NOTES:

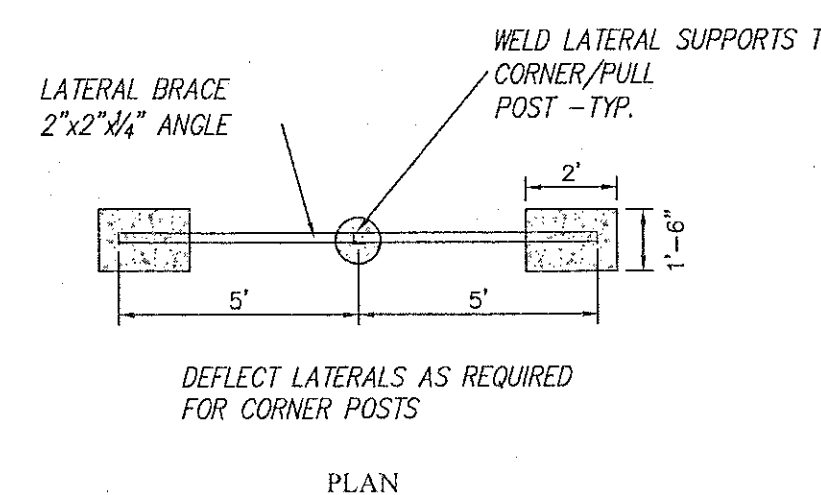
1. INSTALL 1.9" OD LINE POSTS AT 10' MAX. SPACING. CORNER POSTS TO BE 3" OD.
2. INSTALL THREE (3) 1 1/2 GAUGE BARBED WIRE STRANDS ON TOP OF FABRIC AT 6" SPACING ON OVERHANG ARMS.
3. POSTS FOR 4' AND SMALLER GATES TO BE 3" OD. POSTS FOR LARGER GATES TO BE 4" IN DIAMETER.
4. GATES FRAMES SHALL BE CONSTRUCTED WITH 1.9 O.D. TUBULAR MEMBERS WELDED AT ALL CORNERS OR ASSEMBLED WITH FITTINGS.
5. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF ZINC RICH PAINT TO MATCH EXISTING METAL.
6. WIRE FABRIC TO BE HOT DIPPED GALVANIZED #9 GAUGE 2" MESH.
7. CONTRACTOR SHALL PROVIDE THE GATE HARDWARE AS FOLLOWS:
 - STRETCHER BARS AND STRETCHER BAR BANDS AND FASTENERS FOR CHAIN LINK FABRIC.
 - LOCKING HASP, LATCH
 - EXTRACTABLE LOCKING ROD AND SLEEVE.
 - AN MISC. GATE HARDWARE REQUIRED FOR INSTALLATION.

CHAIN LINK FENCE DETAILS NTS



WIRE FENCING NOTES:

1. INSTALL NEW METAL POSTS AT 10' SPACING, PULL POSTS AT 350' MAX OR CHANGE OF DIRECTION AND CORNER POSTS AT ALL CORNERS.
2. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF PAINT TO MATCH EXISTING METAL PAINT.
3. IN LIEU OF WELDING CONTRACTOR MAY AT HIS OPTION FASTEN LATERAL BRACE TO CORNER OF PULL POST WITH 1/2" GALVANIZED BOLTS INCLUDING LOCKING WASHERS AND NUTS.

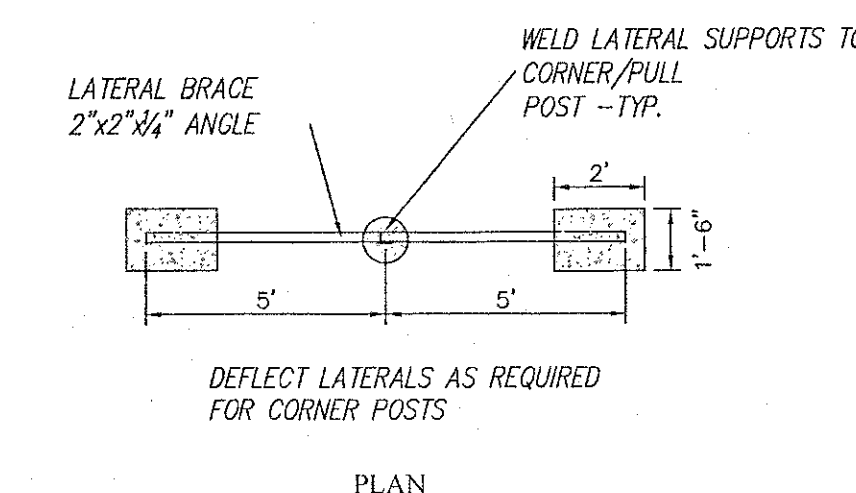


BARBED WIRE FENCE CORNER AND PULL POST DETAIL NTS

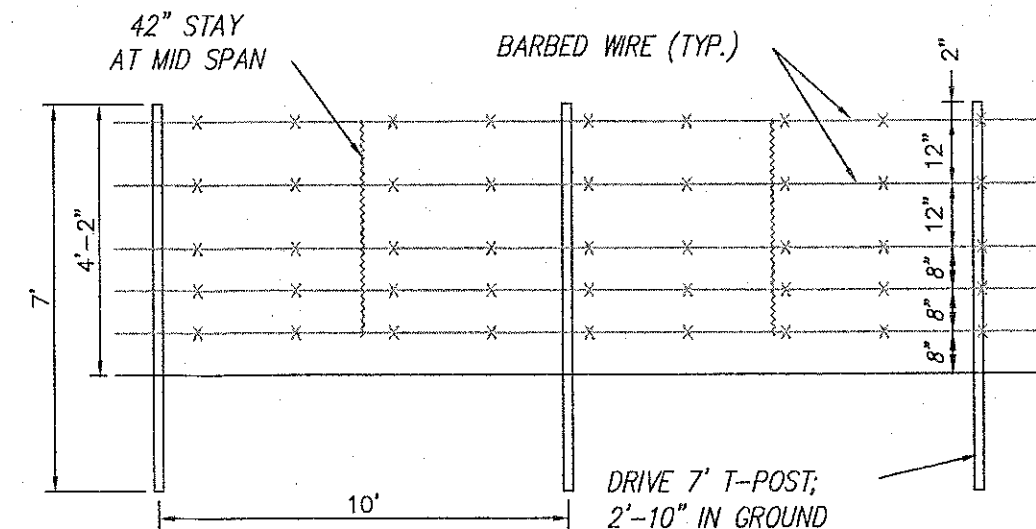
WIRE FENCING NOTES:

1. INSTALL NEW METAL POSTS AT 10' SPACING, PULL POSTS AT 350' MAX OR CHANGE OF DIRECTION AND CORNER POSTS AT ALL CORNERS.
2. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF PAINT TO MATCH EXISTING METAL PAINT.
3. IN LIEU OF WELDING CONTRACTOR MAY AT HIS OPTION FASTEN LATERAL BRACE TO CORNER OF PULL POST WITH 1/2" GALVANIZED BOLTS INCLUDING LOCKING WASHERS AND NUTS.
4. CONTRACTOR MAY PROVIDE BARBED WIRE IN LIEU OF NON-BARBED FENCING WIRE.

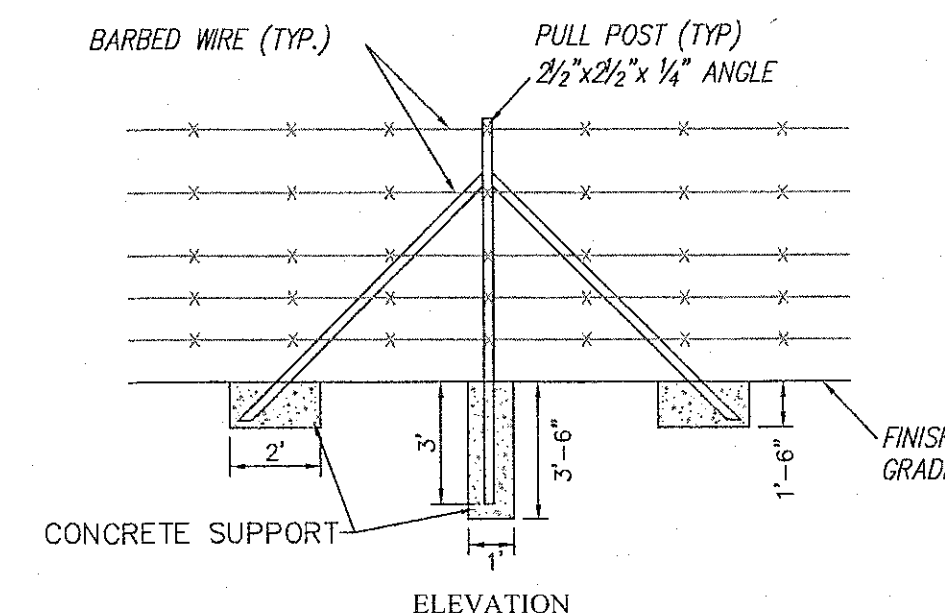
DO NOT REMOVE FOR FENCE COORDINATES AT THE THREE (3) HISTORICAL SITES AND ONE (1) CULTURAL SITE.



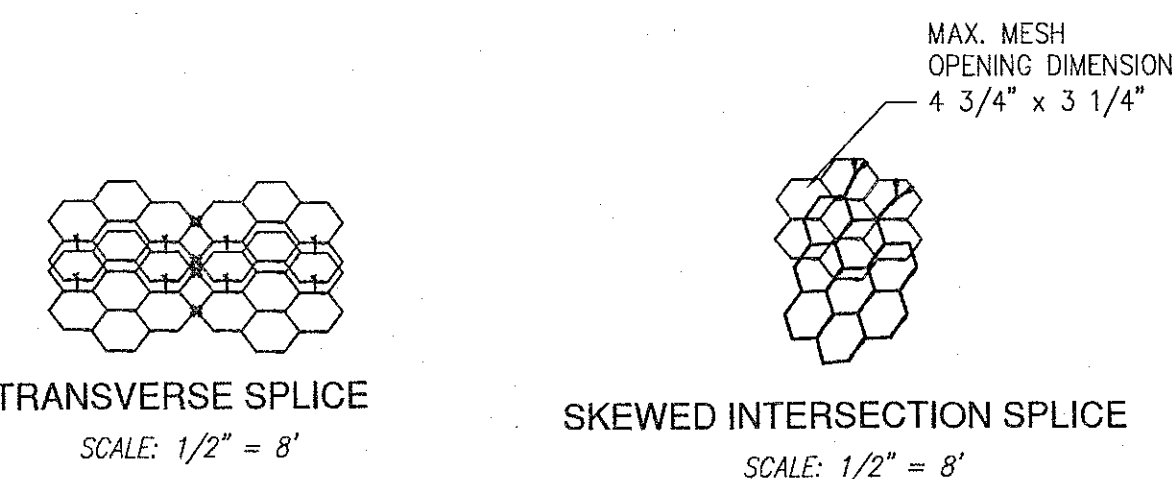
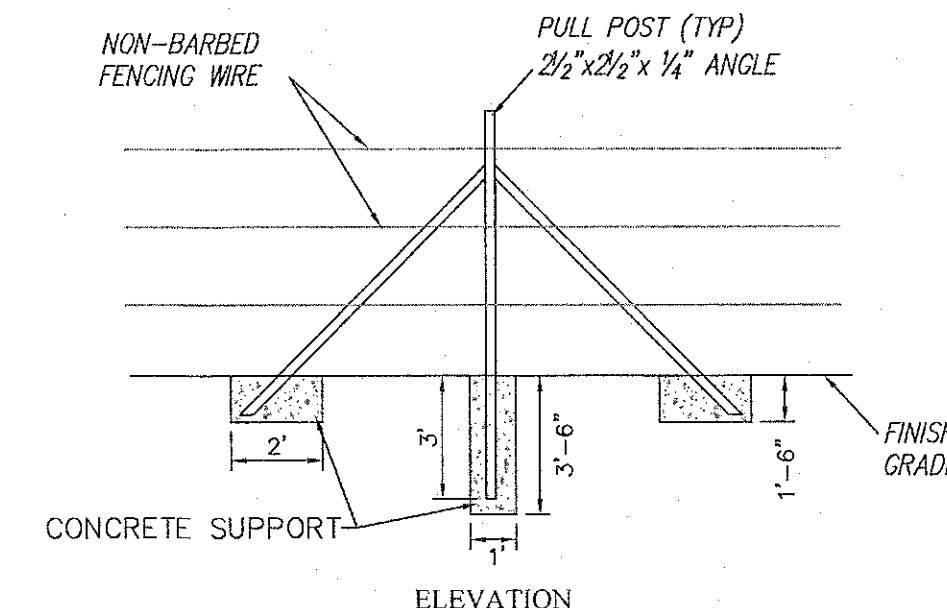
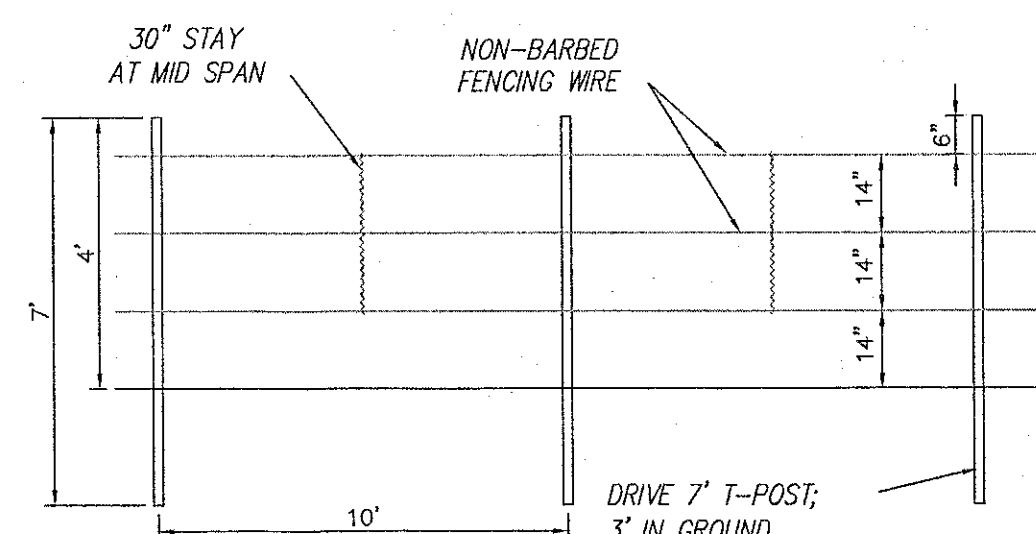
ARCHEOLOGICAL FENCE CORNER AND PULL POST DETAIL NTS



BARBED WIRE FENCE CORNER AND PULL POST DETAIL NTS



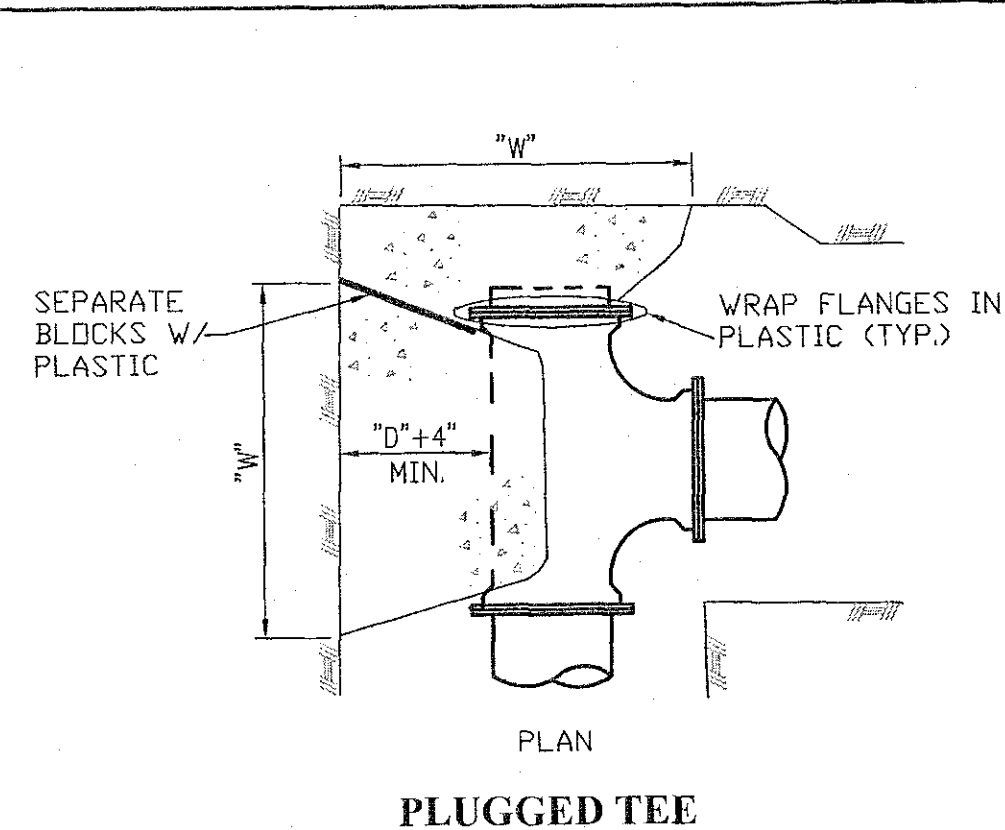
WIRE (NON BARBED) FENCE DETAIL



WIRE SPlice FOR RIP-RAP NTS

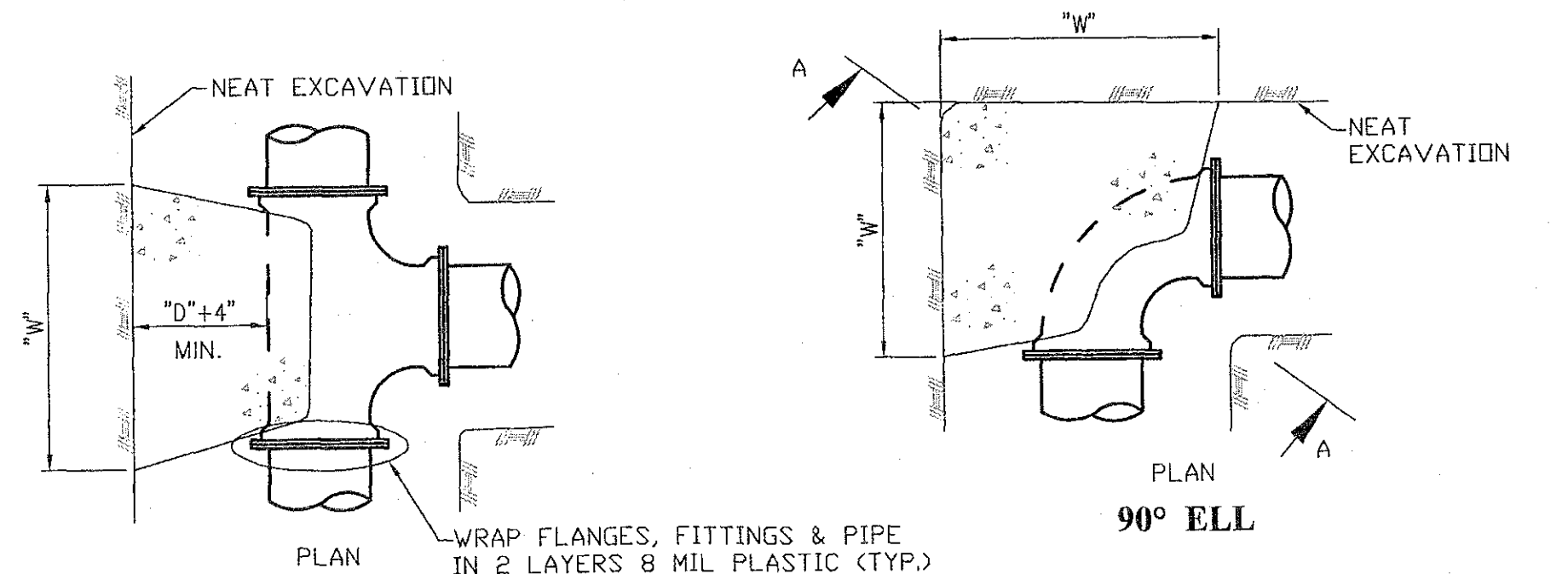
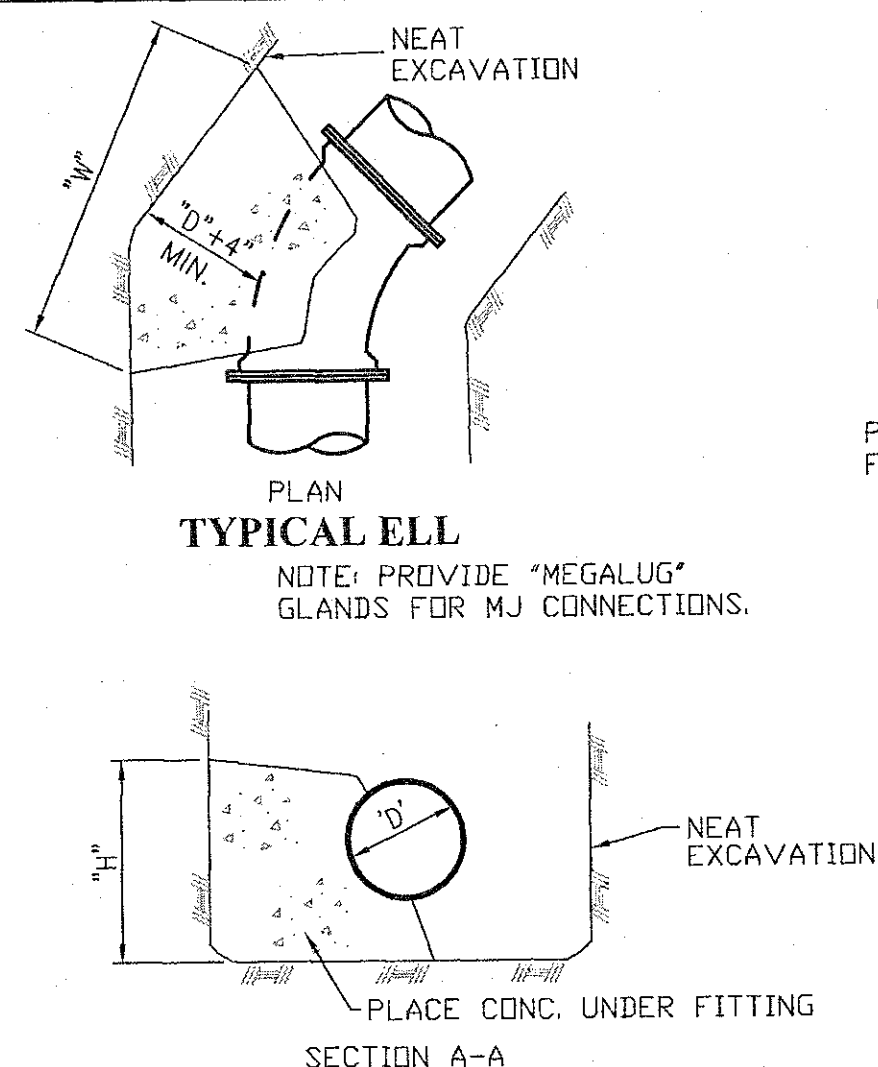
CAUTION
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811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45
DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.



NOTE: HIGHLY SATURATED OR UNCONSOLIDATED SOILS MAY REQUIRE AN INCREASE IN THRUST BLOCK SIZE. VERIFY W/ PROJECT ENGINEER.

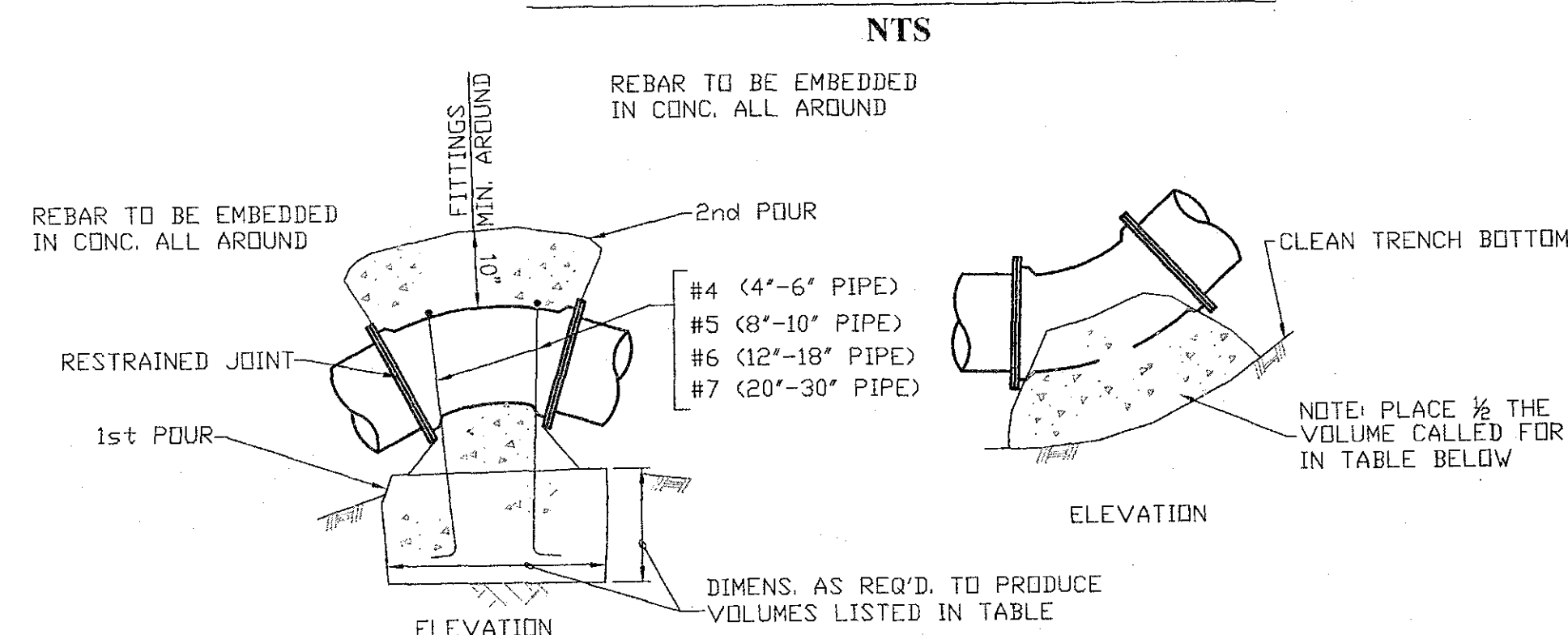
NOTE: BACKFILL SHALL NOT BE PLACED UNTIL THRUST BLOCK CONCRETE HAS FIRMLY SET.



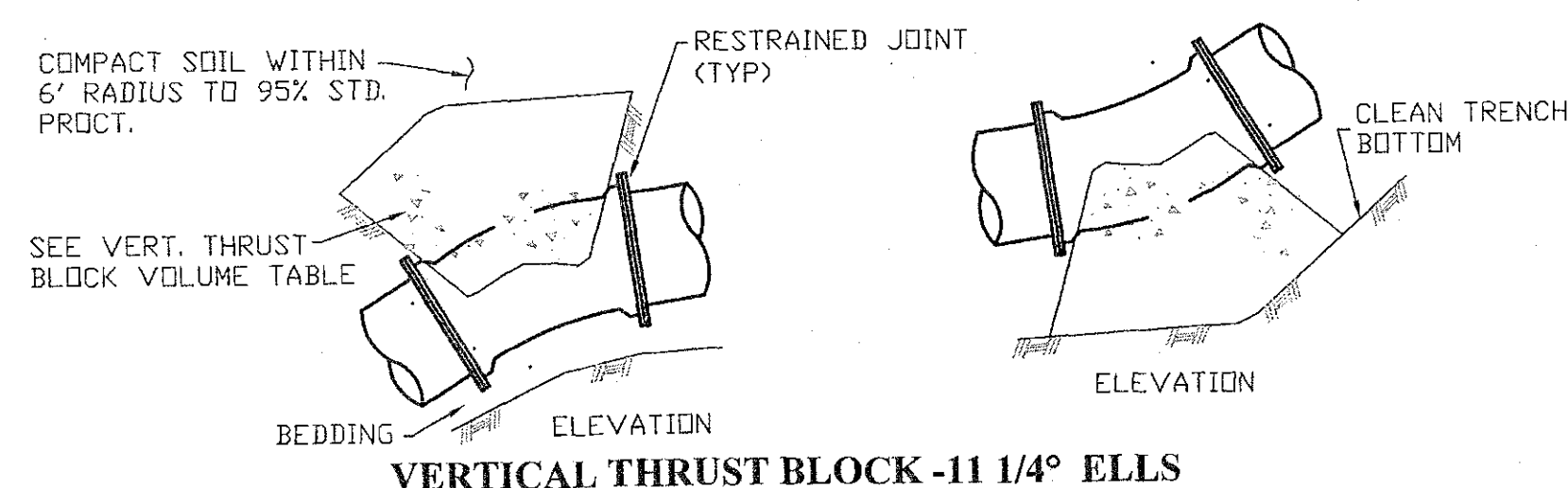
MINIMUM THRUST BLOCK DIMENSIONS FOR HORIZONTAL FITTINGS

PIPE "D"	TEE "W"	90° ELL "H"	45° ELL "H"	22 1/2° - 11 1/4° ELL "H"
4"	14"	10"	10"	12"
6"	18"	14"	14"	16"
8"	24"	16"	16"	18"
10"	30"	20"	20"	24"
12"	36"	24"	24"	28"
14"	42"	28"	28"	32"
16"	48"	32"	32"	36"
18"	54"	36"	36"	40"
24"	66"	48"	48"	54"

HORIZ. THRUST BLOCK DETAILS

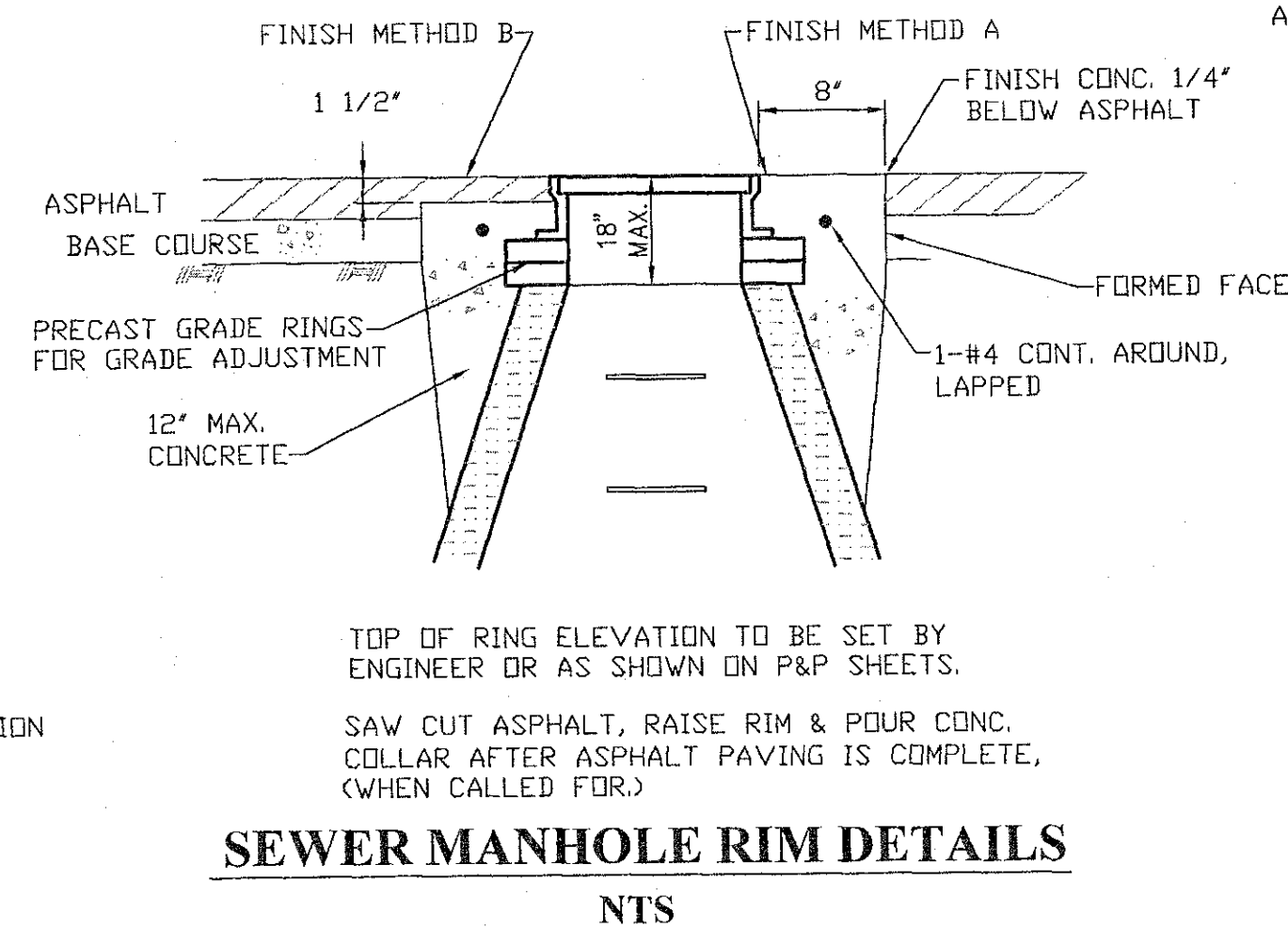


VERTICAL THRUST BLOCK - 22 1/2° & 45° ELLS

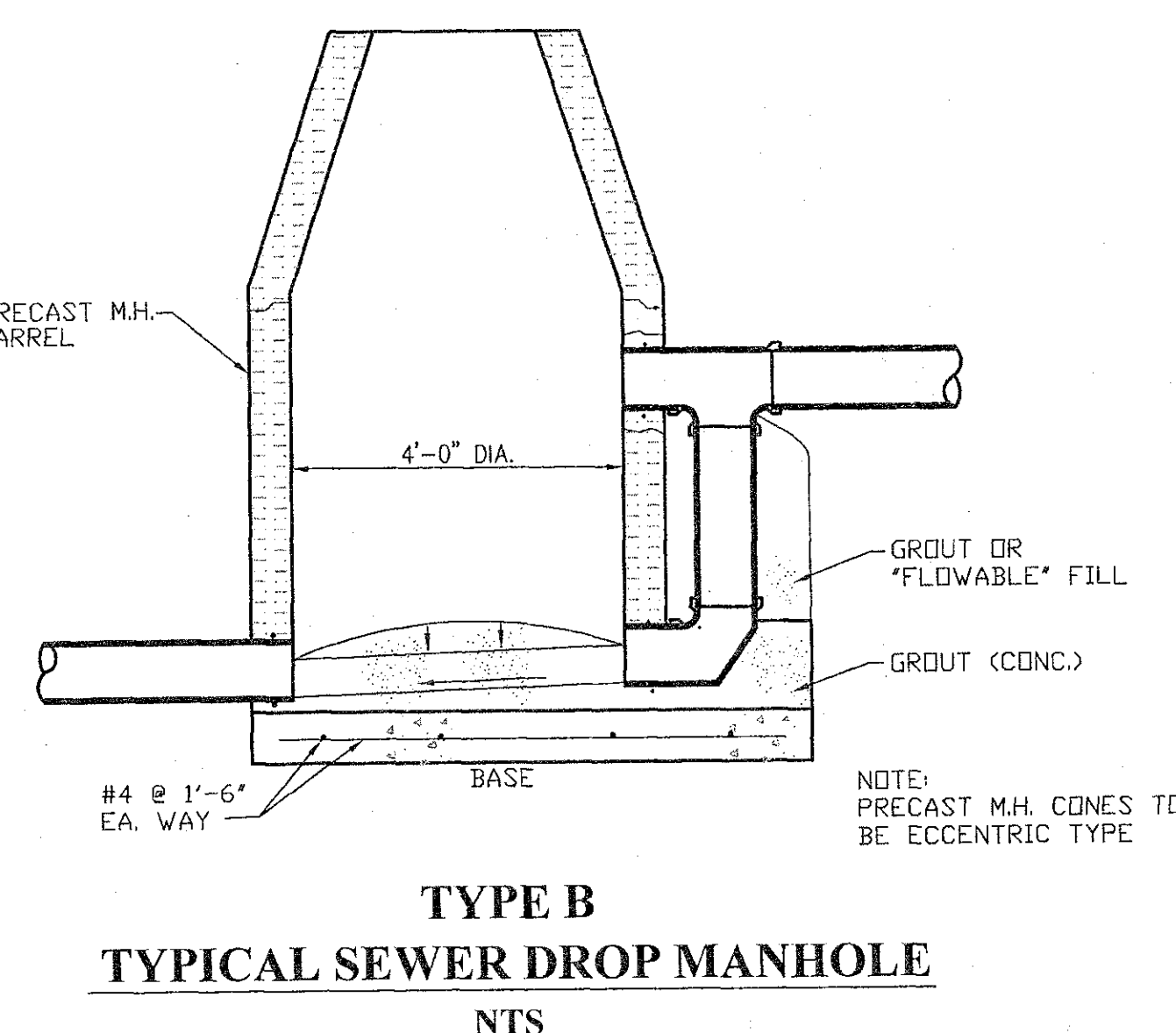


VERTICAL THRUST BLOCK VOLUMES (FT)³

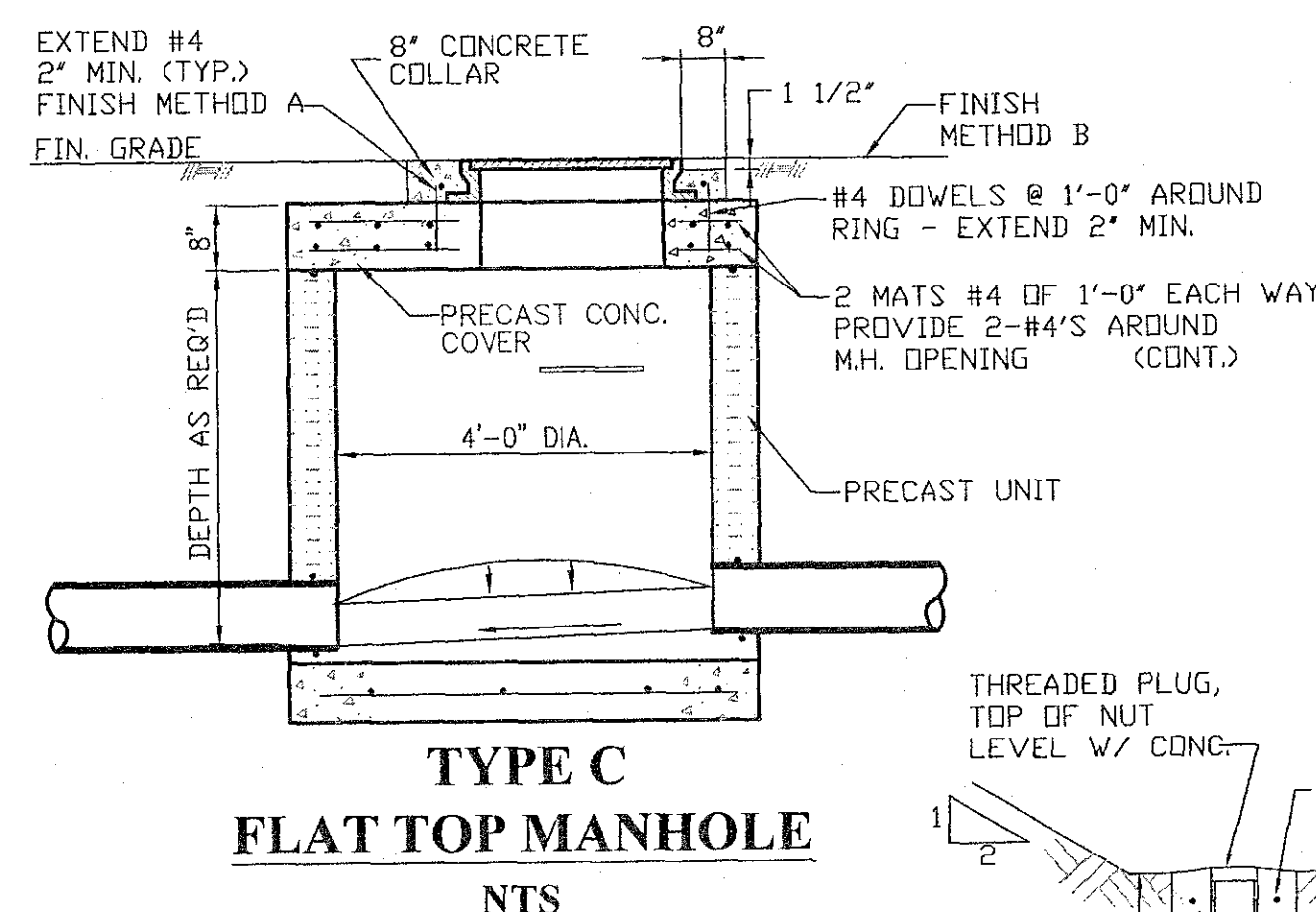
PIPE SIZE	45° ELL	22 1/2° ELL	11 1/4° ELL
4"	8	4	-
6"	14	8	-
8"	25	13	-
10"	40	21	10
12"	60	31	17
14"	85	45	26
16"	115	58	33
18"	125	64	39
24"	150	76	45
30"	180	89	55



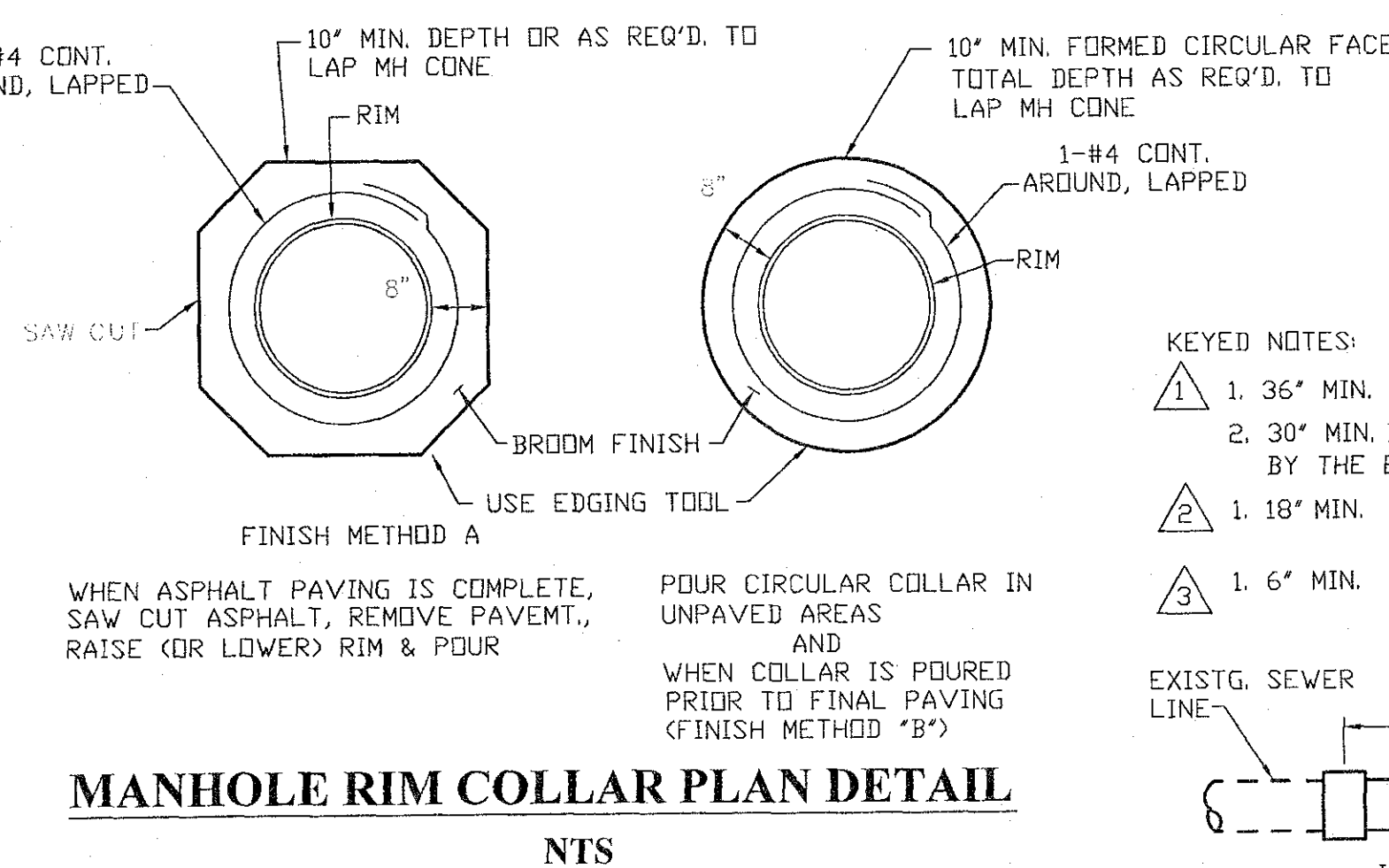
SEWER MANHOLE RIM DETAILS



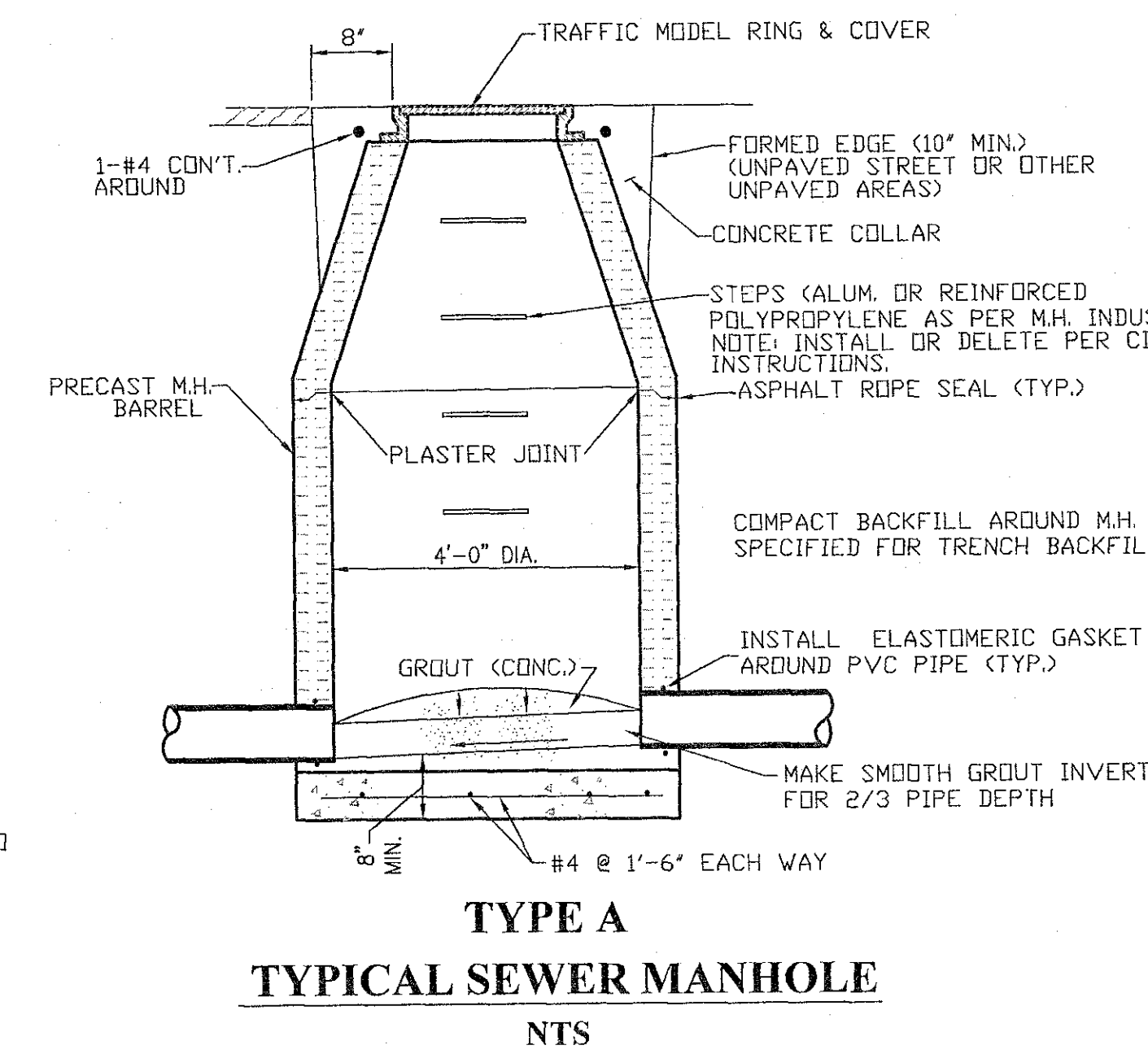
TYPE B
TYPICAL SEWER DROP MANHOLE



TYPE C
FLAT TOP MANHOLE

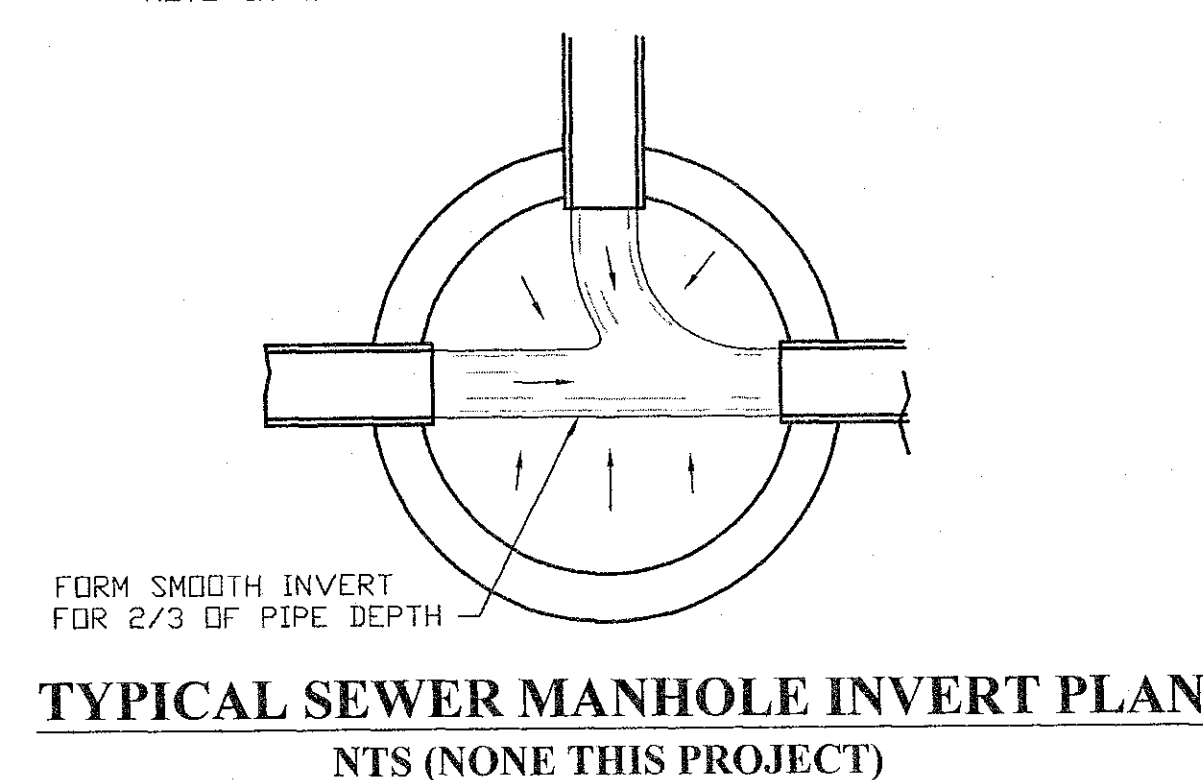


MANHOLE RIM COLLAR PLAN DETAIL



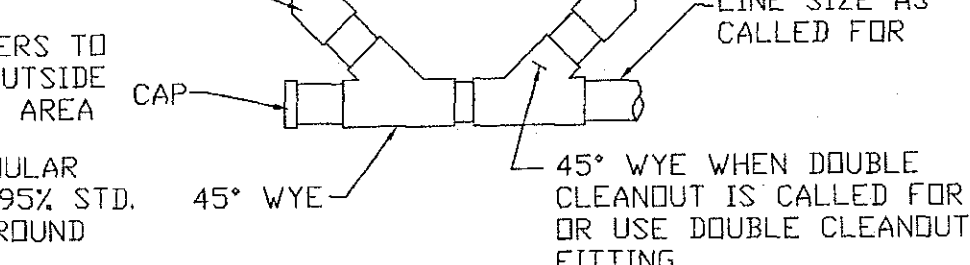
TYPE A
TYPICAL SEWER MANHOLE

NOTE: INVERT GROUT TO BE 4000 PSI CONCRETE

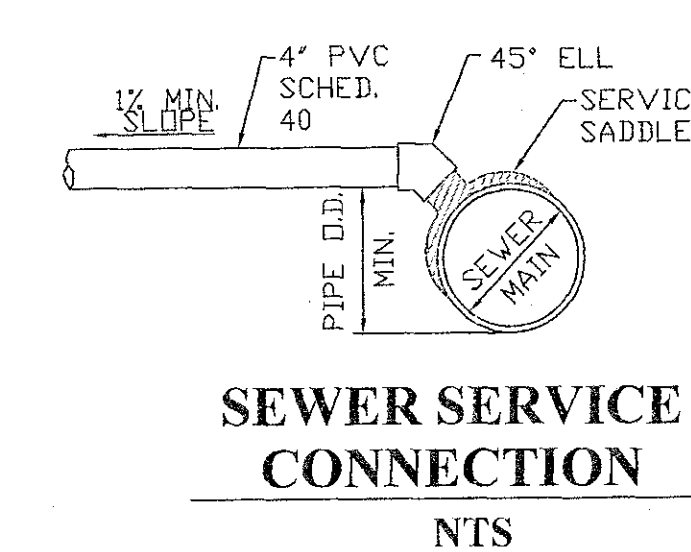


TYPICAL SEWER MANHOLE INVERT PLAN

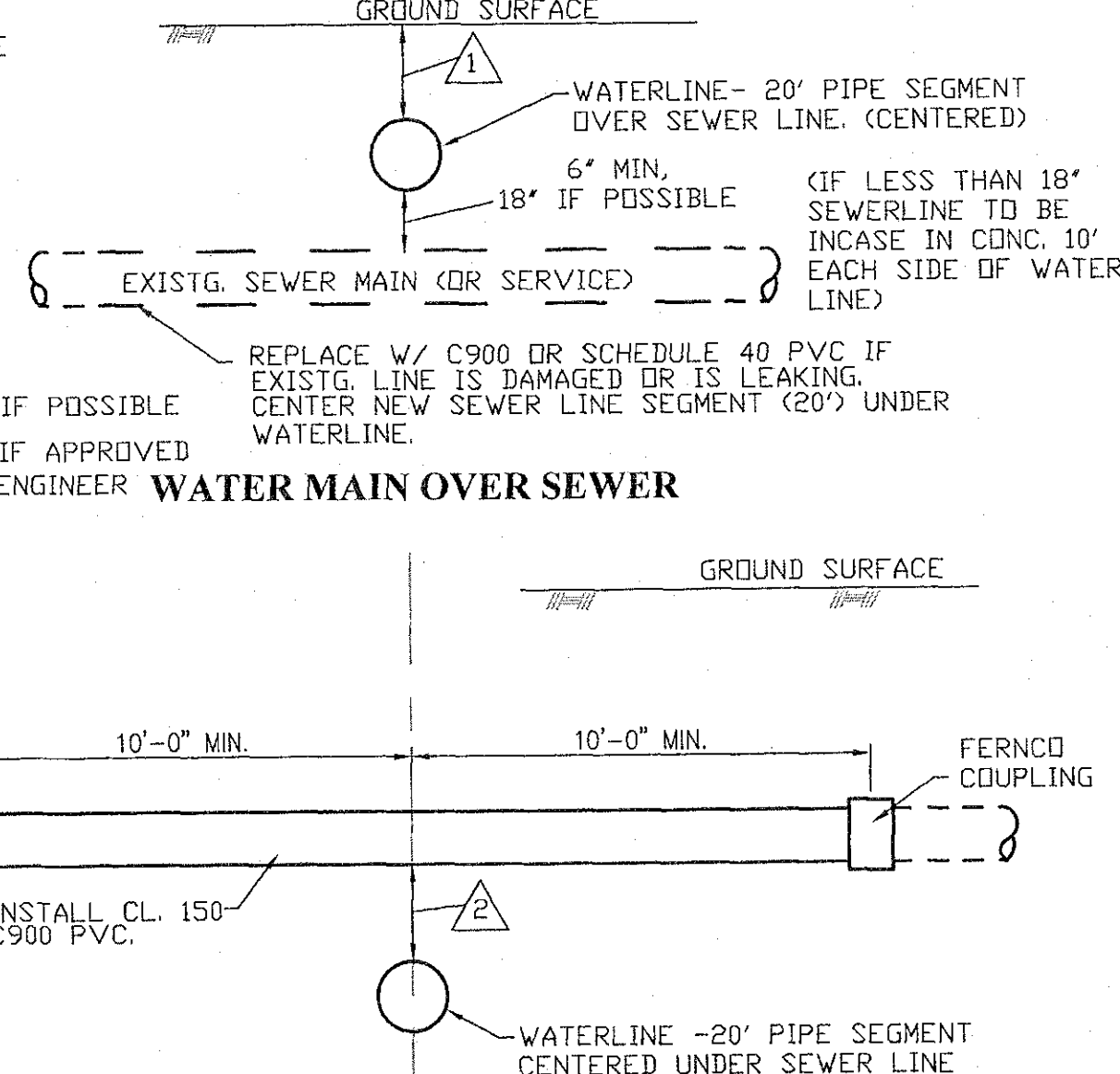
SEWER SERVICE CLEANOUT DETAILS



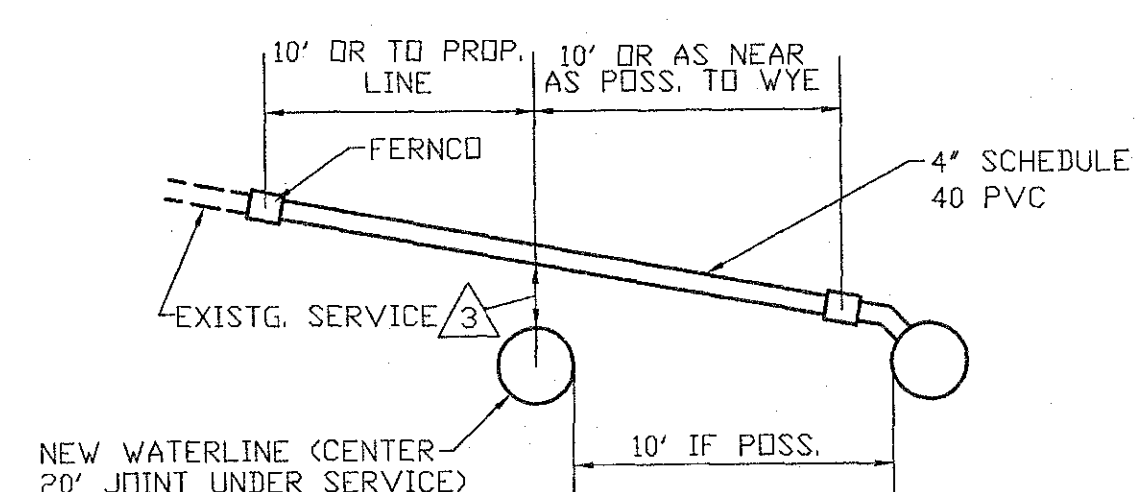
SCHED. 40 PVC



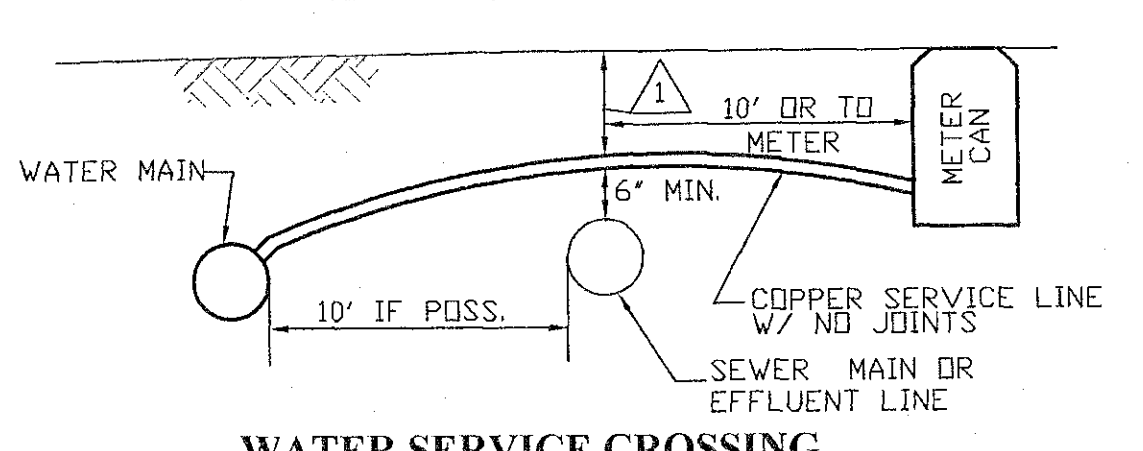
SEWER SERVICE CONNECTION



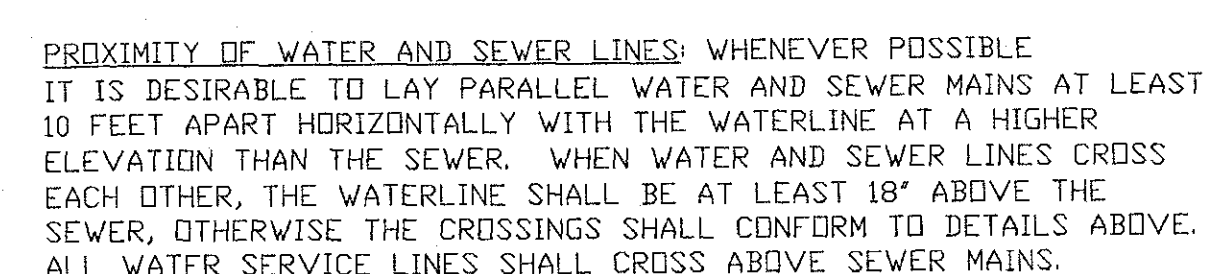
WATER MAIN OVER SEWER



WATER MAIN UNDER SEWER

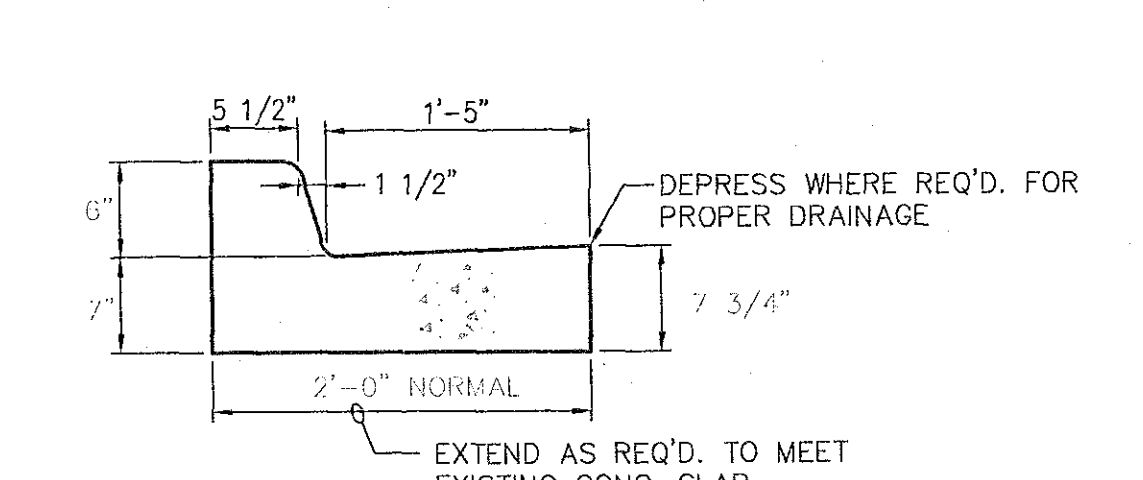


SEWER SERVICE CROSSING

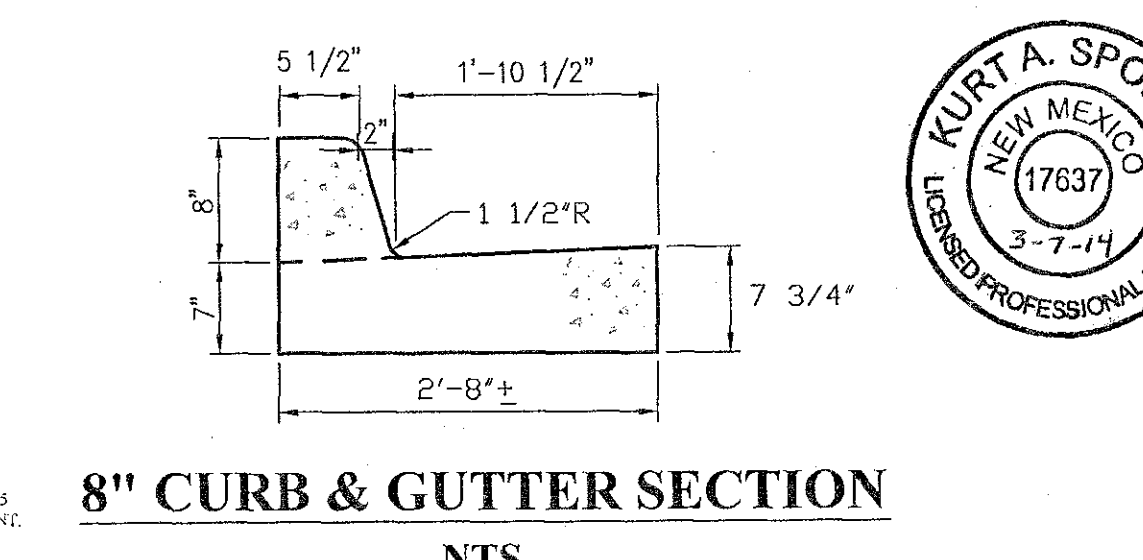


WATER SERVICE CROSSING

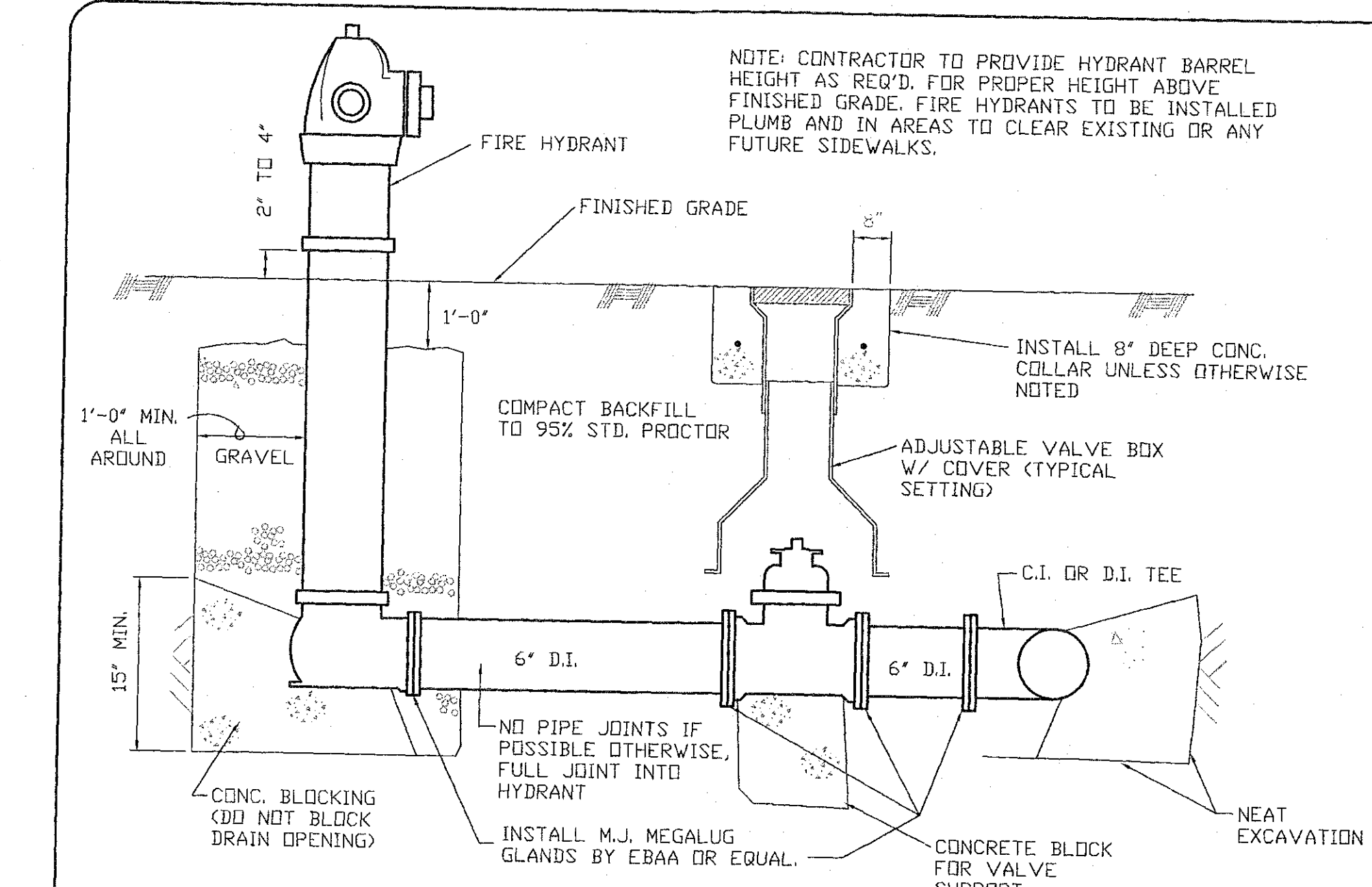
WATER & SEWER CROSSING DETAILS



6" CURB & GUTTER SECTION

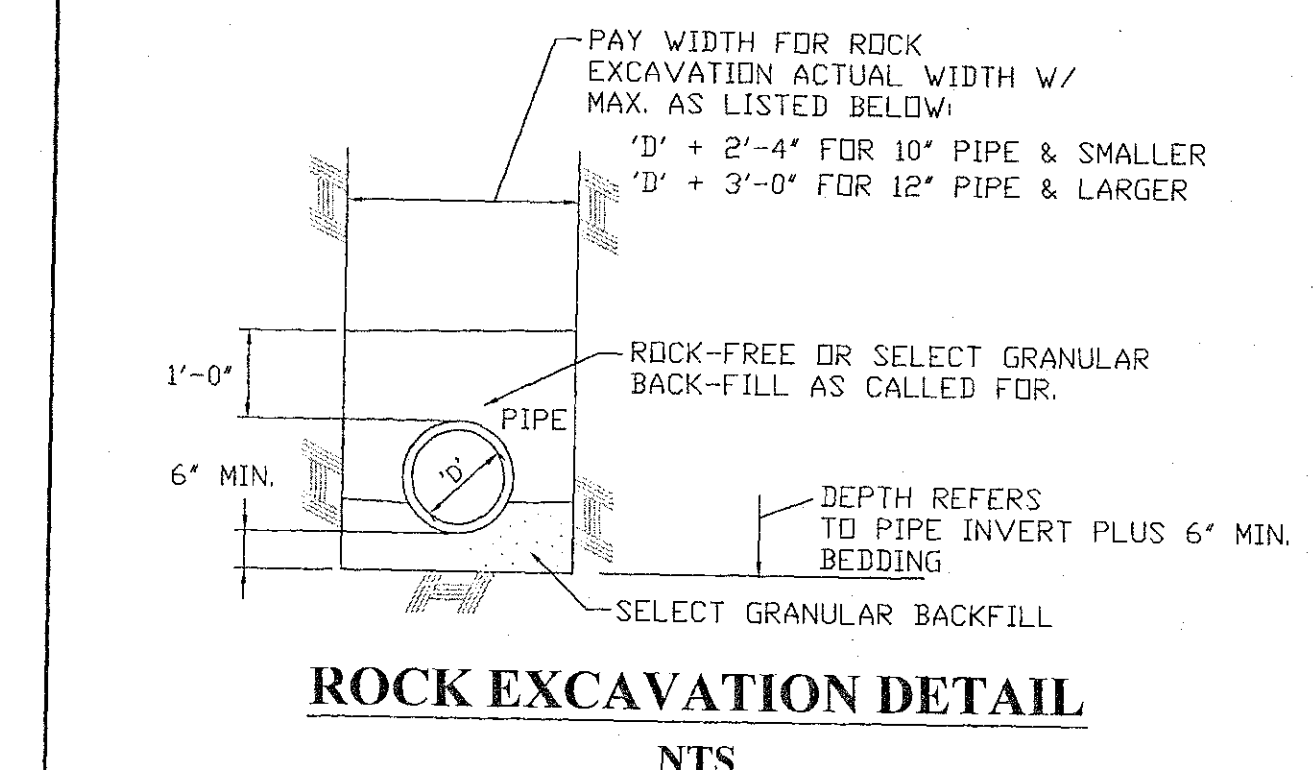


8" CURB & GUTTER SECTION

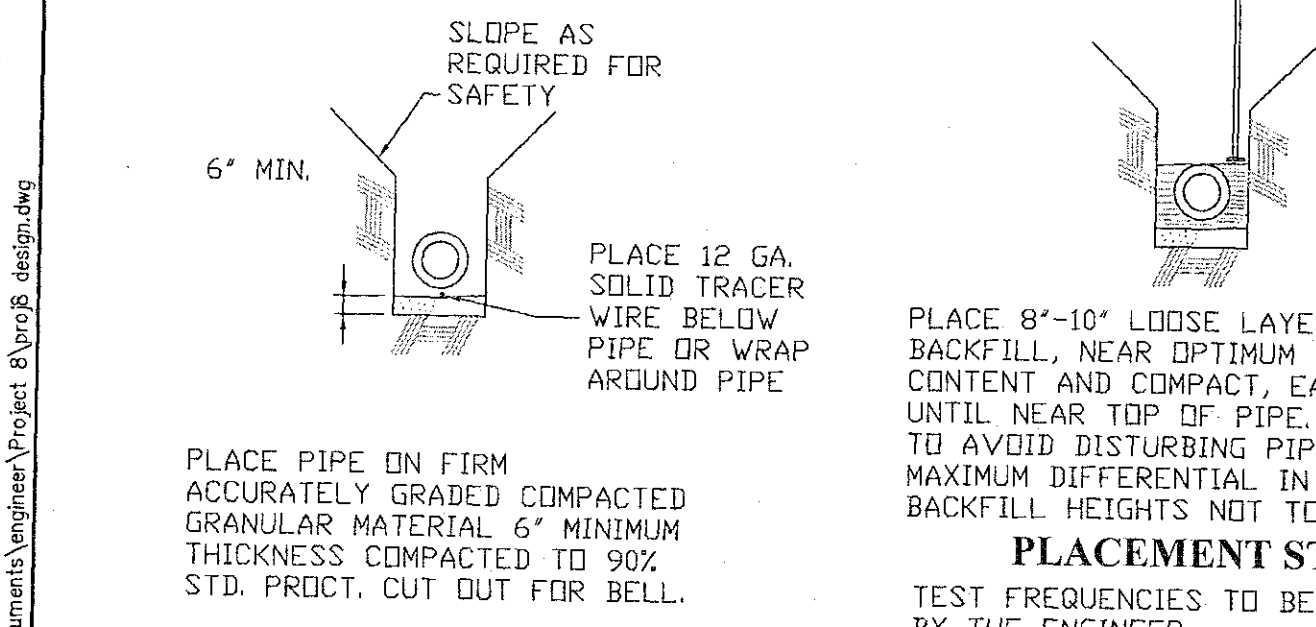


ELEVATION
FIRE HYDRANT ASSEMBLY
BID ITEM TO INCLUDE TEE,
PIPING FROM MAIN, VALVE &
BOX.

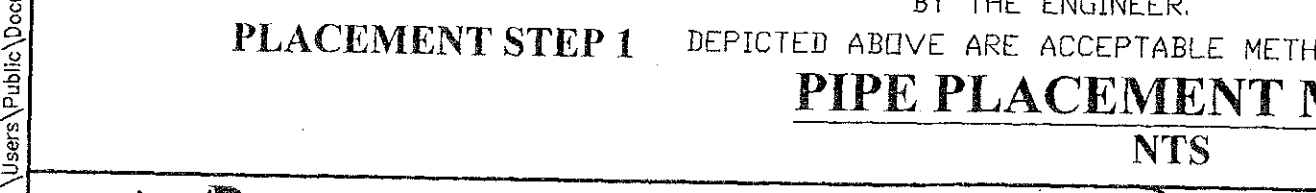
PLAN
FIRE HYDRANT DETAILS
(NOT PART OF THIS PROJECT)
NTS



ROCK EXCAVATION DETAIL
NTS



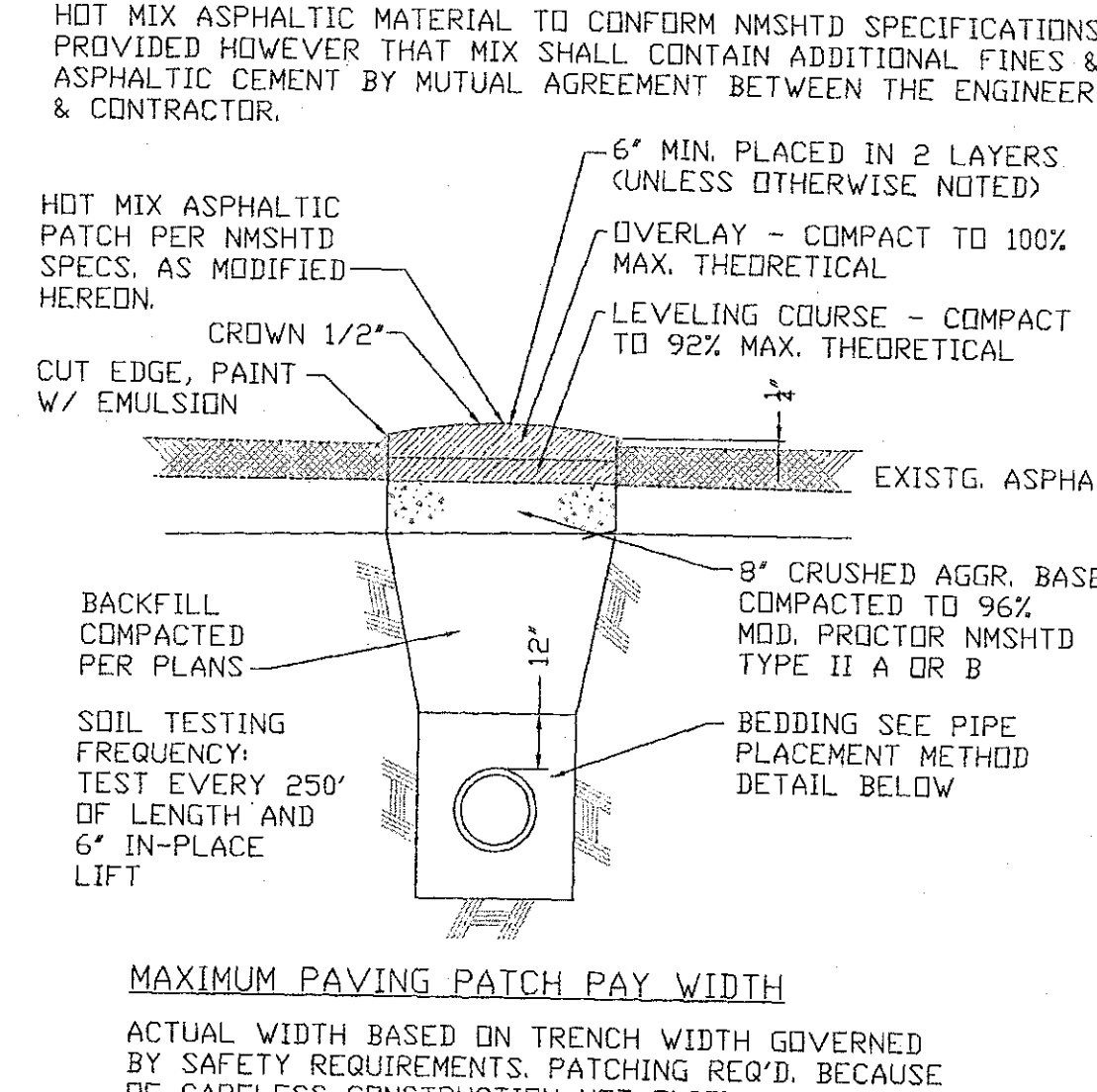
TYPICAL VERTICAL VALVE SETTING
NTS



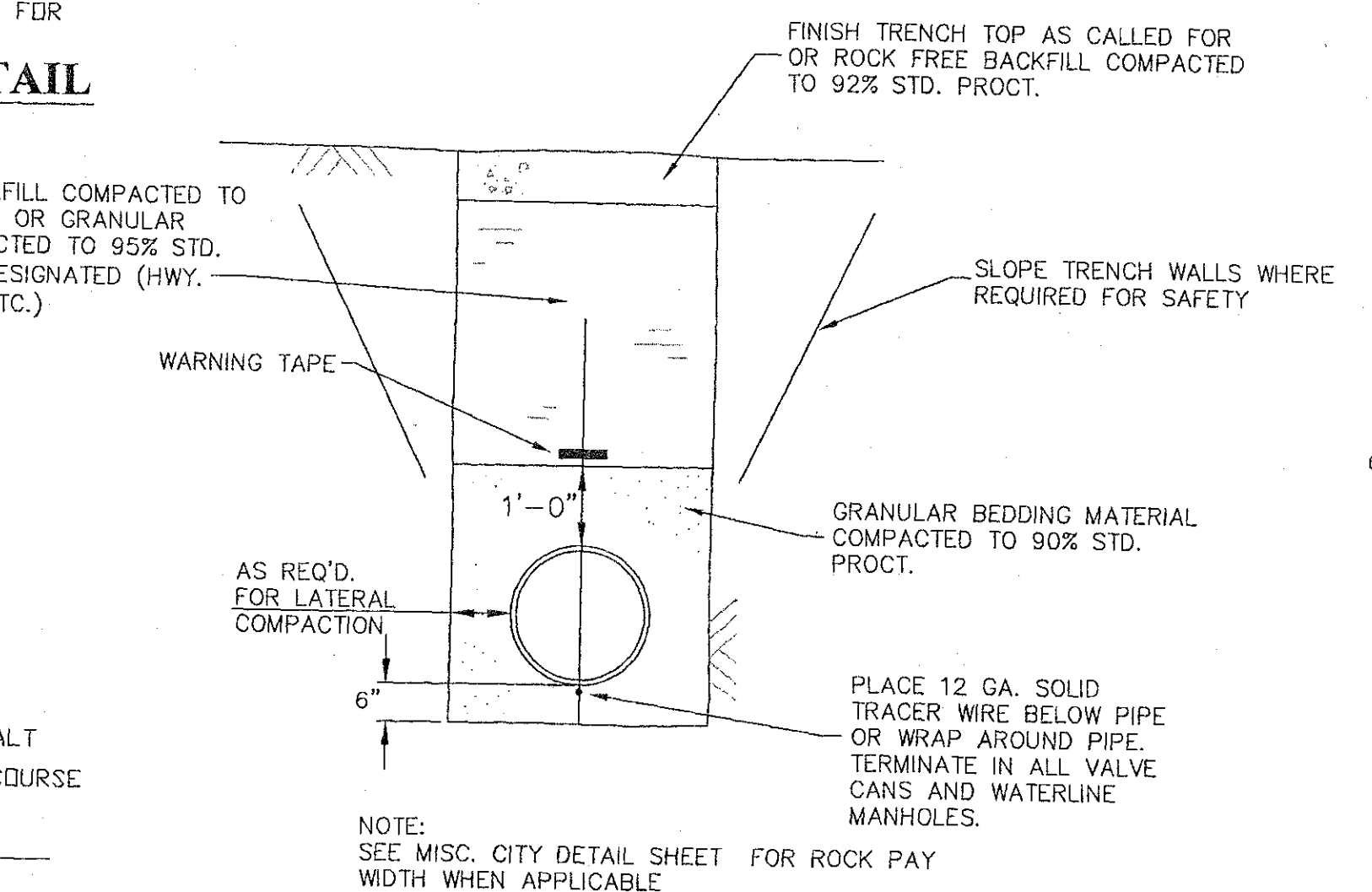
PLACEMENT STEP 1 DEPICTED ABOVE ARE ACCEPTABLE METHODS FOR PLACING PIPE
PIPE PLACEMENT METHOD
NTS



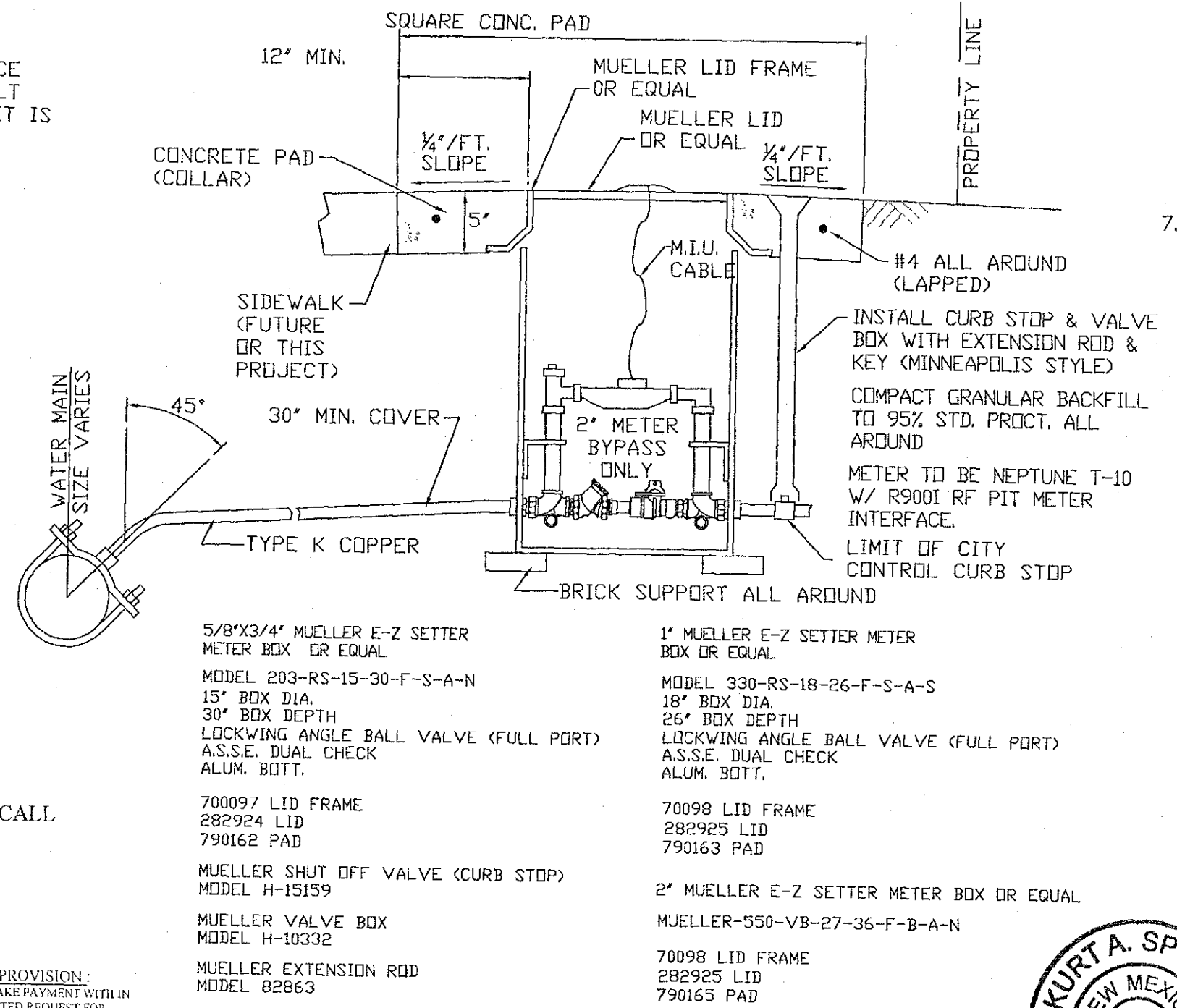
PLACEMENT STEP 3



ASPHALTIC PATCH DETAIL
NTS



TYPICAL TRENCH DETAIL
NTS



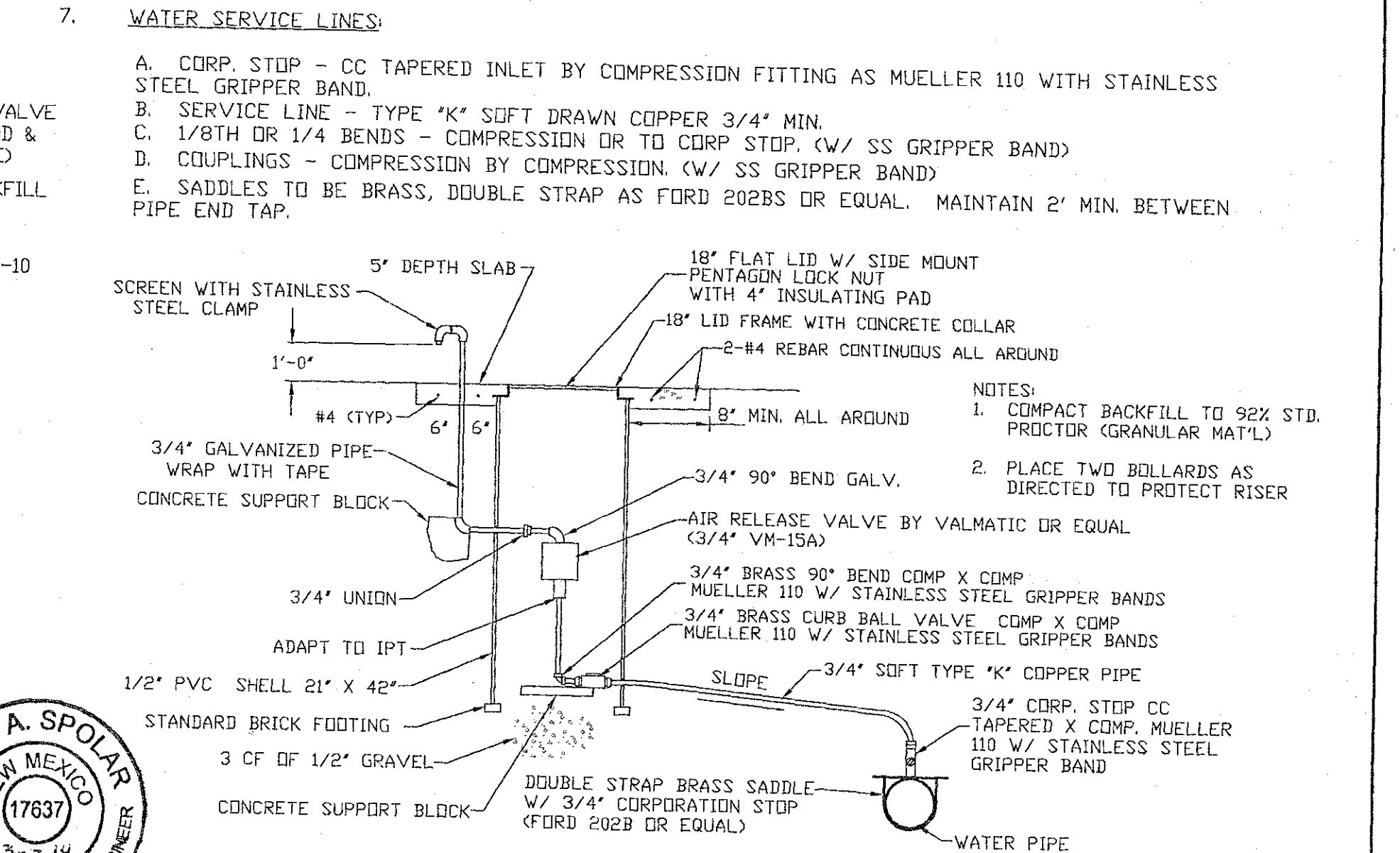
WATER SERVICE METER BOX DETAILS
5/8"x3/4"; 1" AND 2" SIZE
NTS (NONE THIS PROJECT)

WATER AND SEWER SPECIFICATIONS

- A. SANITARY SEWER LINE AND APPURTENANCES**
- PVC SEWER PIPE: PVC SEWER PIPE SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D-3034 WITH A MINIMUM SDR-35. PIPE CONNECTIONS SHALL BE BELL-SPIGOT WITH RUBBER RING AND SHALL BE WATER TIGHT AT 15 PSI HYDROSTATIC HEAD.
 - MANHOLES AND APPURTENANCES:
 - MANHOLES SHALL BE CONSTRUCTED FROM APPROVED PRECAST BARREL AND CONE SECTIONS MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
 - MANHOLE FRAMES AND COVERS SHALL BE CAST IRON, SOLID LID, TRAFFIC MODEL AND SHALL CONFORM TO ASTM A48-36C.
 - SEWER SERVICE LATERALS:
 - PVC SERVICE WYE, SDR-35 (GXGXG) - GASKET
 - PVC SADDLE TEE SDR-35 (RUBBER SEAL TO MAIN X G BRANCH) WITH STAINLESS STEEL BANDS.
 - PVC SCHD. 40 PIPE, ASTM D-1785 WITH RUBBER RING JOINTS OR SOLVENT WELD.
 - CONNECTION TO EXISTING SERVICE LINES, FERNCO ELASTOMERIC SLEEVES WITH STAINLESS STEEL BANDS.
 - HYDROSTATIC (EXFILTRATION) TESTING: COMPLETED SEWER LINES BETWEEN MANHOLES TO BE SUBJECTED TO MINIMUM 4 FT. OF HEAD FOR 2 HOUR PERIOD. LEAKAGE TO BE 1 GALLON OR LESS. MAXIMUM PERMISSIBLE LOSS IN MANHOLES FOR 2 HOUR PERIOD IS 5 GALLONS.
- B. WATER LINES AND APPURTENANCES FOR POTABLE WATER**
- DUCTILE IRON: DUCTILE IRON FOR WATER LINES SHALL BE OF THE SIZE AND CLASS SPECIFIED, CEMENT LINED AND SHALL CONFORM TO AWWA C104 AND C151. JOINTS FOR DUCTILE IRON PIPE SHALL BE RUBBER RING "PUSH-ON" OR AS SPECIFIED ON THE DRAWINGS. DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO (2) LAYER OF 8 MIL POLYETHYLENE PER AWWA C105.
 - PVC: 15" TO 30" PVC - PRODUCT STANDARD ASTM 2241, IPS SIZE, SLIP JOINT W/ SDR CLASS CALLED FOR. 4" TO 12" PVC - TO MEET AWWA STANDARD C900-07 W/ CAST IRON OD SIZE, RUBBER RING "PUSH ON" TYPE GASKET JOINTS AND DR CLASS CALLED FOR. 14" TO 48" PVC - TO MEET AWWA STANDARD C905 W/ CAST IRON OD SIZE, RUBBER RING "PUSH ON" TYPE GASKET JOINTS AND DR CLASS CALLED FOR.
 - FITTINGS AND SPECIALS: FITTINGS AND SPECIALS SHALL BE DUCTILE IRON CEMENT LINED MECHANICAL JOINT DUCTILE IRON CONFORMING TO AWWA C104 AND C110 WITH RETAINER GLANDS. FITTINGS FOR 15" TO 30" PVC IPS LINES TO BE SCHD. 80 SOLVENT WELD PVC.
 - GATE VALVES: GATE VALVES 4" AND LARGER SHALL BE EPOXY COATED, IRON BODY, RESILIENT WEDGE, NON-RISING STEM VALVES RATED FOR 250 PSI AND SHALL CONFORM TO AWWA C-509 OR C515. VALVES 2" OR LESS IN DIAMETER SHALL BE HIGH QUALITY ALL BRASS GATE VALVES OR BRASS BODY W/ SS BALL WHEN CALLED FOR. VALVE BOXES SHALL BE DUCTILE IRON, ADJUSTABLE LENGTH TYPE. CONNECTIONS FOR 4" AND LARGER GATE VALVES TO BE MECHANICAL JOINT WITH STAINLESS STEEL TRIM UNLESS OTHERWISE NOTED.
 - FIRE HYDRANTS: FIRE HYDRANTS SHALL HAVE A 6" DIAMETER INLET WITH 5 1/4" VALVE OPENING AND SHALL BE RATED FOR 150 PSI WORKING PRESSURE. CONNECTIONS FOR FIRE HYDRANTS SHALL BE MECHANICAL JOINT AND SHALL CONFORM TO AWWA C502. FIRE HYDRANTS SHALL BE MUELLER CENTURION A 423.
 - TESTING AND DISINFECTION OF WATER LINES AND APPURTENANCES:
 - TESTING OF WATER LINES: ALL WATER LINES SHALL BE TESTED AFTER INSTALLATION IN ACCORDANCE WITH AWWA SPECIFICATION C600, PROVIDED ALLOWABLE LINE LEAKAGE SHALL NOT BE MORE THAN 77400 GALLONS PER HOUR WHERE N = NUMBER OF JOINTS, D = PIPE DIAMETER IN INCHES AND P = TEST PRESSURE IN PSI.

AVERAGE TEST PRESSURE (PSI)	ALLOWABLE LEAKAGE PER 100 JOINTS (GALLONS/HR.)									
	6"	8"	10"	12"	14"	16"	18"	24"	30"	
200	1.15	1.53	1.91	2.29	2.68	3.06	3.44	4.56	5.73	
250	1.28	1.71	2.14	2.56	2.99	3.42	3.85	5.13	6.41	

- DISINFECTION OF WATER LINES: COMPLETED LINES SHALL BE TREATED WITH CHLORINE SOLUTION OF NOT LESS THAN 50 PARTS PER MILLION KEPT IN CONTACT FOR AT LEAST 24 HOURS. AFTER THE 24 HOUR PERIOD, THE LINE SHALL BE FLUSHED UNTIL THE RESIDUAL CHLORINE HAS BEEN REDUCED TO CITY OF GALLUP SYSTEM RESIDUAL. WATER IN THE NEW LINE SHALL BE SAMPLED BY THE CONTRACTOR FOR BIOLOGICAL TESTING AFTER A PERIOD OF 48 HRS. REQUIRED TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TESTS TO INDICATE COMPLIANCE WITH CITY STANDARDS PRIOR TO TYING-IN.
- DISINFECTION PROCEDURES SHALL BE IN ACCORDANCE W/ AWWA C651 SPECIFICATIONS AND AS MODIFIED HEREON.
- CHLORINE SOLUTION SHALL NORMALLY BE INTRODUCED AT THE LOWEST ELEVATION OF THE WATER LINE. THE SOLUTION SHALL BE PUMPED INTO THE LINE IN SUCH A MANNER AS TO PREVENT TRAPPING AIR. CONTRACTOR SHALL PROVIDE FILLING, SAMPLING AND AIR RELEASE TAPS AS REQUIRED. LIQUID CHLORINE CONCENTRATE OR GAS SHALL BE USED FOR CHLORINE SOLUTION. POWDER CHLORINE CONCENTRATE WILL NOT BE PERMITTED. (SEE WATER LINE FILLING AND FLUSHING METHODS)



TYPE 1 AIR RELEASE DETAIL
NTS (NONE THIS PROJECT)