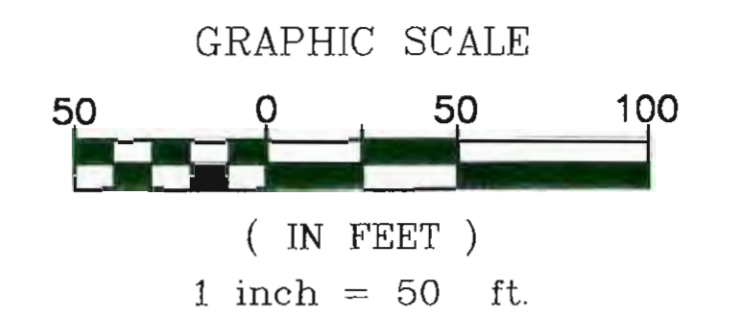


ISSUED FOR CONSTRUCTION
10/11/96

RECORD DRAWINGS
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN ANY MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.
Revisions Drawn by T.A.G. Date 7/9/1997

THIS SHEET ACCURATE FOR PIPING ONLY



TWO DAYS BEFORE YOU DIG
CALL **USA** TOLL FREE
1-800-227-2600

MANHOLE/PIPE LIST

	LOCATION	INVERT IN (NORTH)	INVERT IN (WEST)	INVERT OUT (SOUTH)	PIPE SIZE	PIPE SLOPE	APPROX LENGTH
COVER DRAIN OUTLET PIPES	JUNCTION BOX	4649.50	N/A	N/A			
	MH-1	4650.30	4650.56	4650.20	8"	0.0044	159.3'
	MH-2	4650.89	4651.32	4650.79	6"	0.005	98.8'
	MH-3	4651.30	4651.95	4651.20	6"	0.005	61.4'
	MH-4	4652.03	4653.13	4651.93	6"	0.005	126.4'
MH-5	NONE	4654.35	4652.49	6"	0.005	91.5'	
SUB-DRAIN OUTLET PIPES	DRAIN BOX	4650.73	N/A	N/A			
	MH-6	4651.63	4651.87	4651.53	8"	0.005	159.3'
	MH-7	4652.34	4652.41	4652.24	6"	0.0086	71.0'
	MH-8	4653.05	4653.12	4652.95	6"	0.0086	71.0'
	MH-9	4653.76	4653.83	4653.66	6"	0.0086	71.0'
MH-10	NONE	4654.55	4654.38	6"	0.0086	72.2'	

COORDINATE LIST

STATION	NORTHING	EASTING
DF 50+95.00	4,370,656.49	843,141.33
DF 51+33.00	4,370,639.87	843,175.50
DF 51+41.67	4,370,636.07	843,183.00
DF 52+85.90	4,370,573.00	843,313.00
DF 53+47.92	4,370,544.93	843,370.43

NOTES:

1. MANHOLES 1 THROUGH 10 ARE TYPE 1 (48"), SEE (1/16)
2. LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE TAKEN FROM SPPOC DRAWINGS. NO FIELD INVESTIGATION WAS DONE TO VERIFY THE DEPTHS OR LOCATIONS.
3. SEE SHEET 18 FOR "OF" PIPE PROFILE.
4. HDPE PIPE SUPPLIED BY LINER SUPPLIER AND INSTALLED BY CONTRACTOR.

SEA CONSULTING ENGINEERS
RENO/SPARKS, NEVADA
LAS VEGAS, NEVADA
PHOENIX, ARIZONA
SEA Job No. 0102-51-3

REVISIONS

- CHANGED 48" HDPE PIPE TO 54" AND CORRECTED TWO REFERENCE NOTES. 10-11-96
- REVISED MANHOLE/PIPE LIST BECAUSE OF CHANGE IN RESERVOIR BOTTOM ELEVATION. CHANGED LOCATION OF JUNCTION BOX AND CONNECTING BOXES TO FIT LOCATION OF EXISTING 24" OVERFLOW PIPE. 12-6-96.

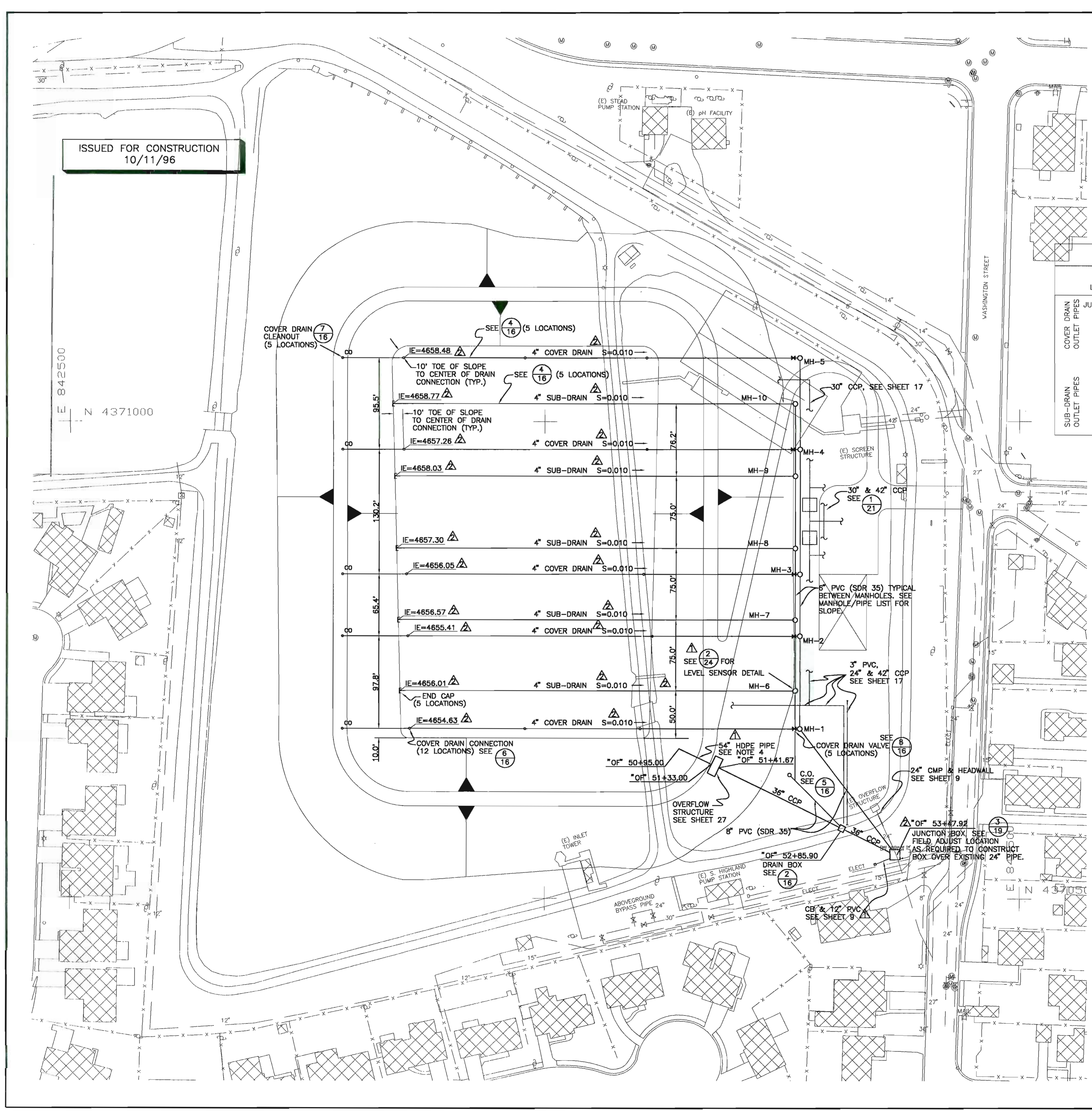
STATE ENGINEERS USE ONLY

Sierra Pacific Power Company
6100 Neil Road
P.O. Box 10100
Reno, Nevada 89520-0400

SIERRA PACIFIC POWER COMPANY
HIGHLAND RESERVOIR CONVERSION
OVERFLOW, SUB-DRAIN, AND COVER DRAIN PIPING PLAN
NE 1/4 OF SE 1/4 SEC. 3
WASHOE COUNTY T19N, R19E, M.D.B.&M. NEVADA

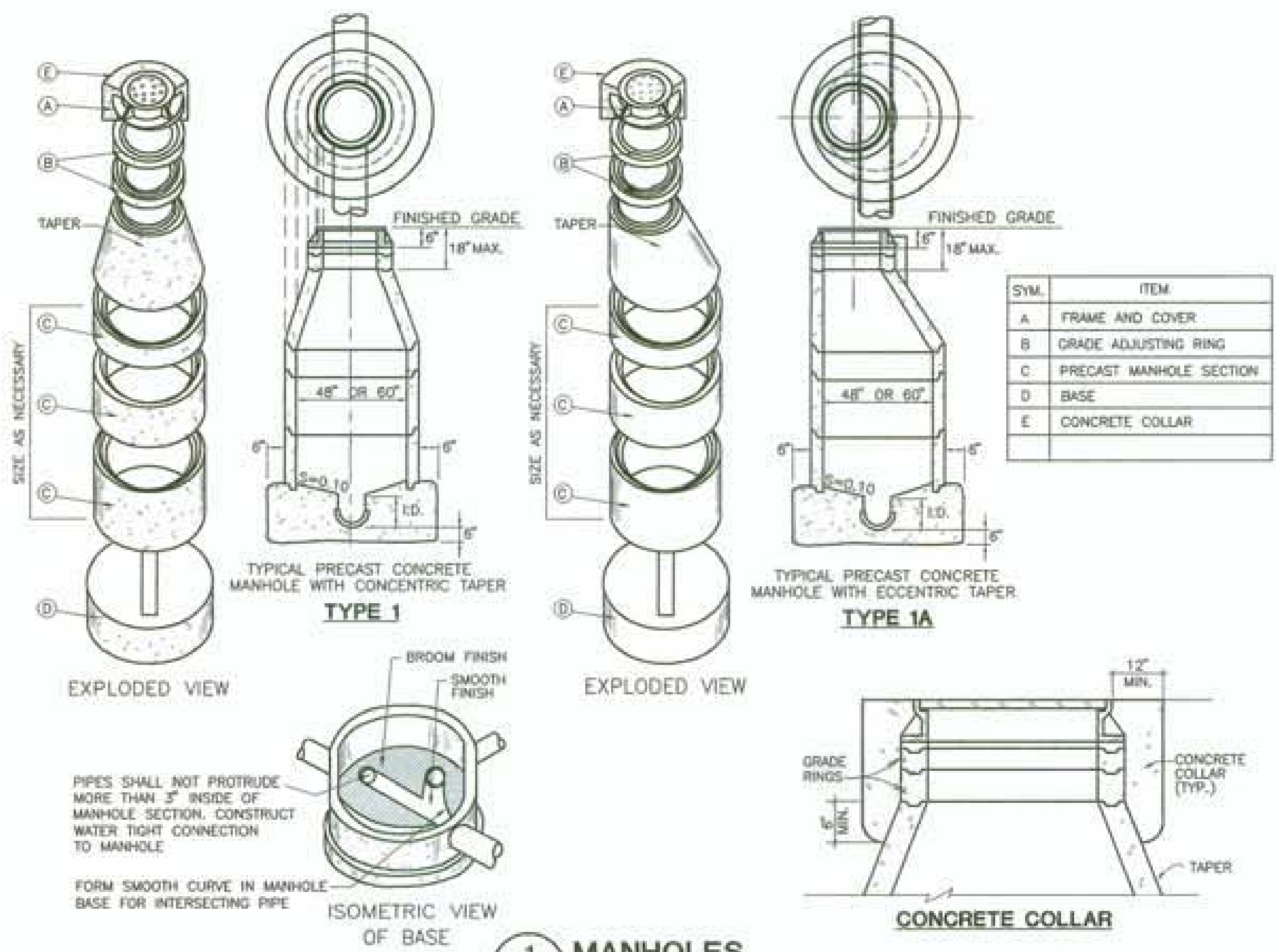
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15 27



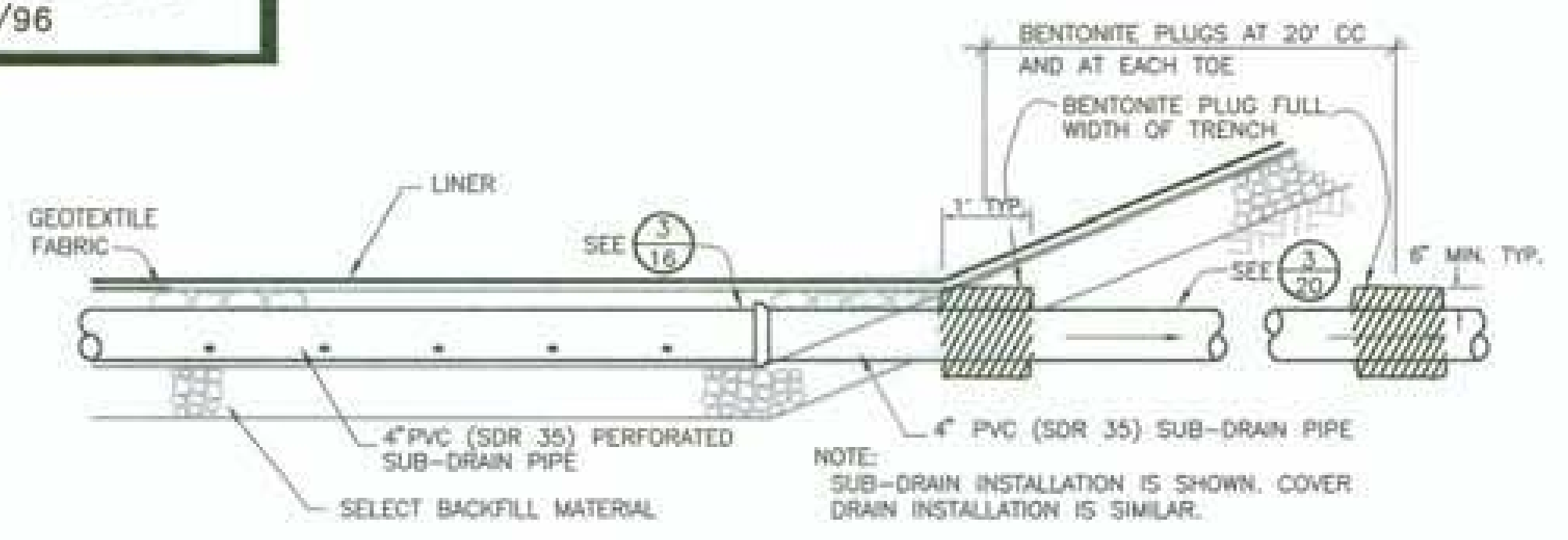
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Highland WTR Reservoir
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Facility Type: Reservoir

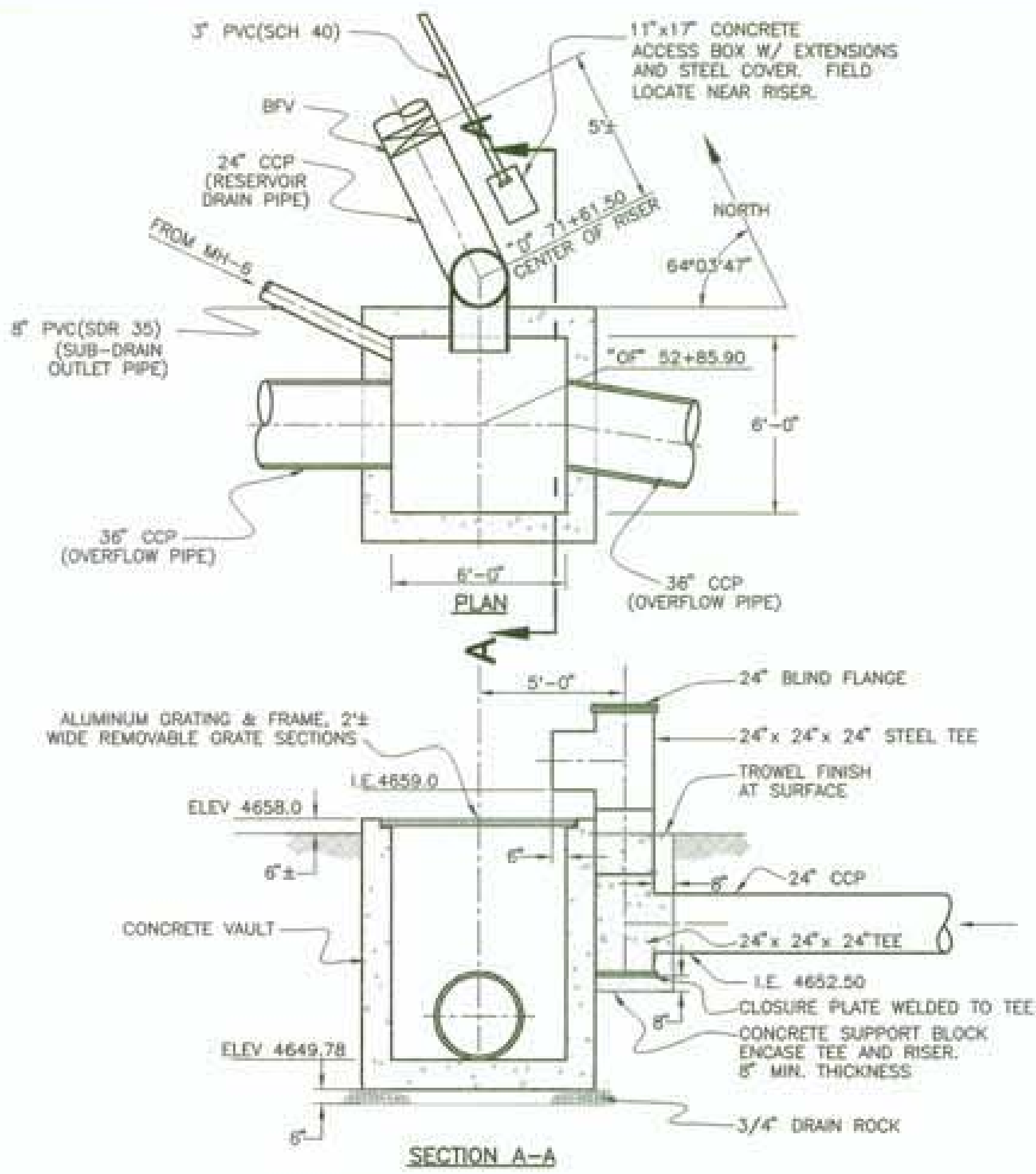


1 MANHOLES
16 N.T.S.

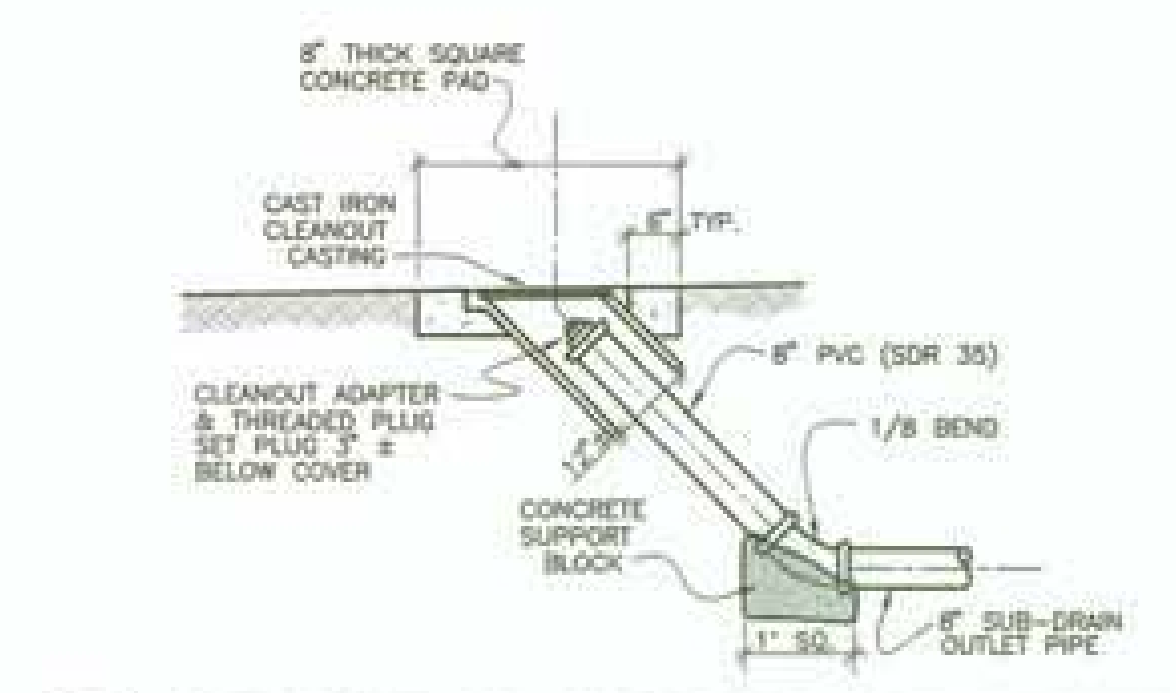
ISSUED FOR CONSTRUCTION
10/11/96



4 PROFILE VIEW OF SUB-DRAIN AND COVER DRAIN PIPE UNDER RESERVOIR FOOTPRINT
16 N.T.S.

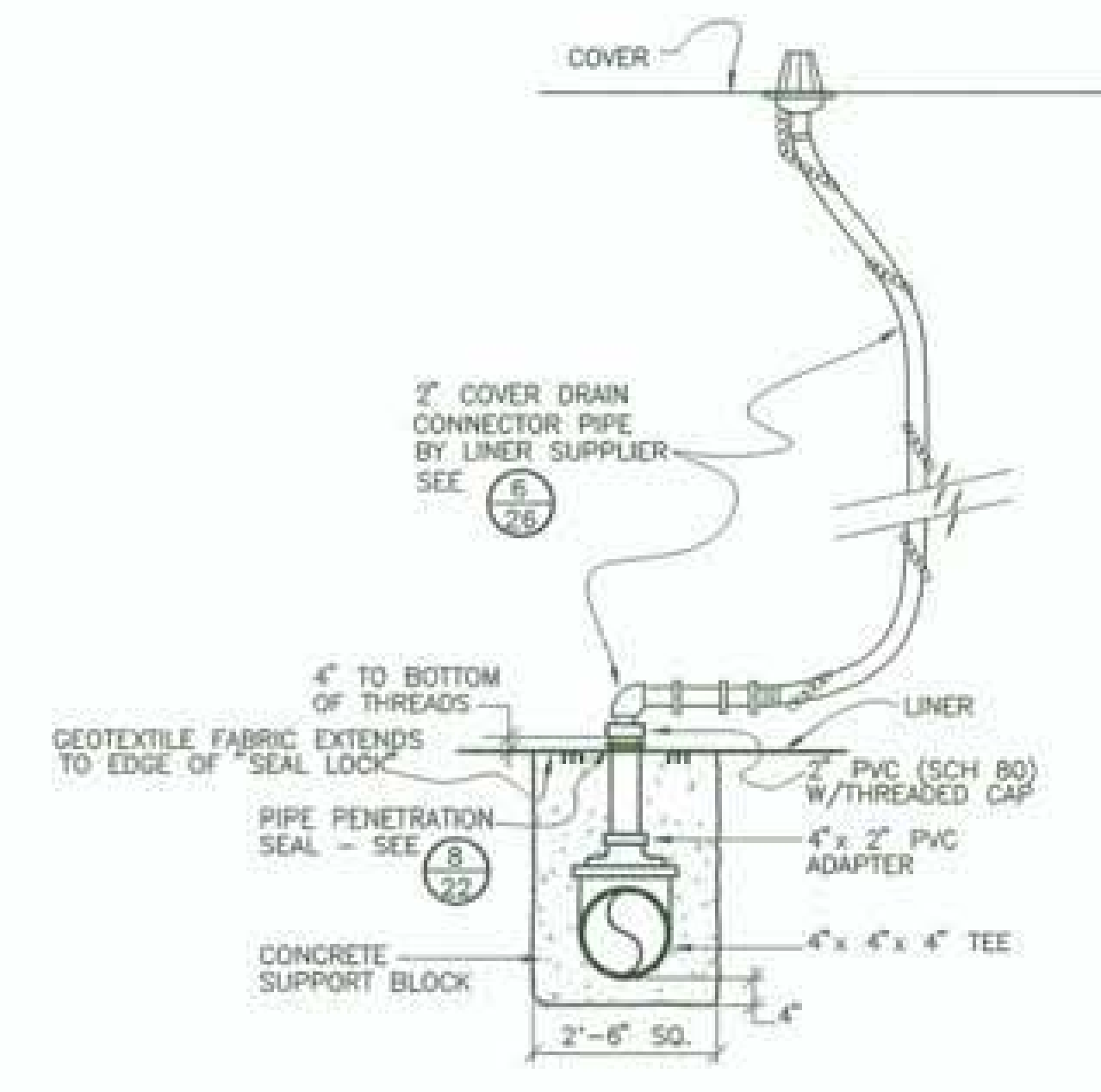


2 DRAIN BOX
16 N.T.S.

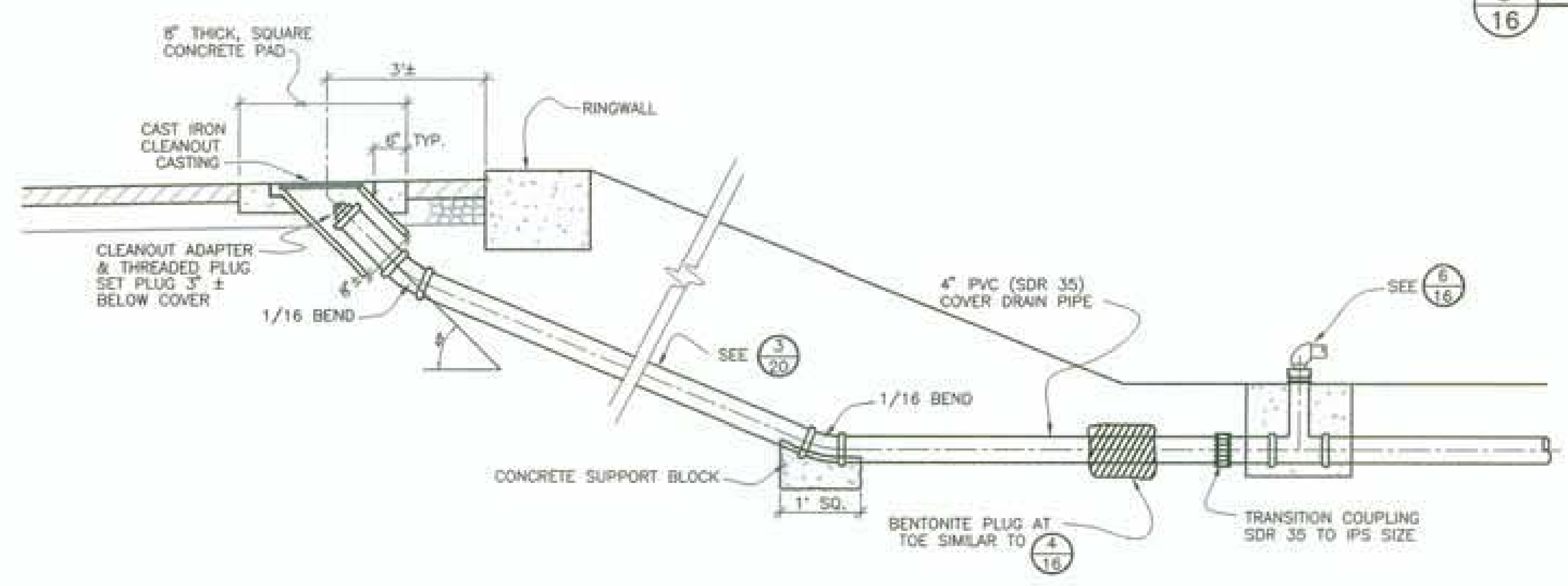


5 CLEANOUT ON SUB-DRAIN OUTLET PIPE
16 N.T.S.

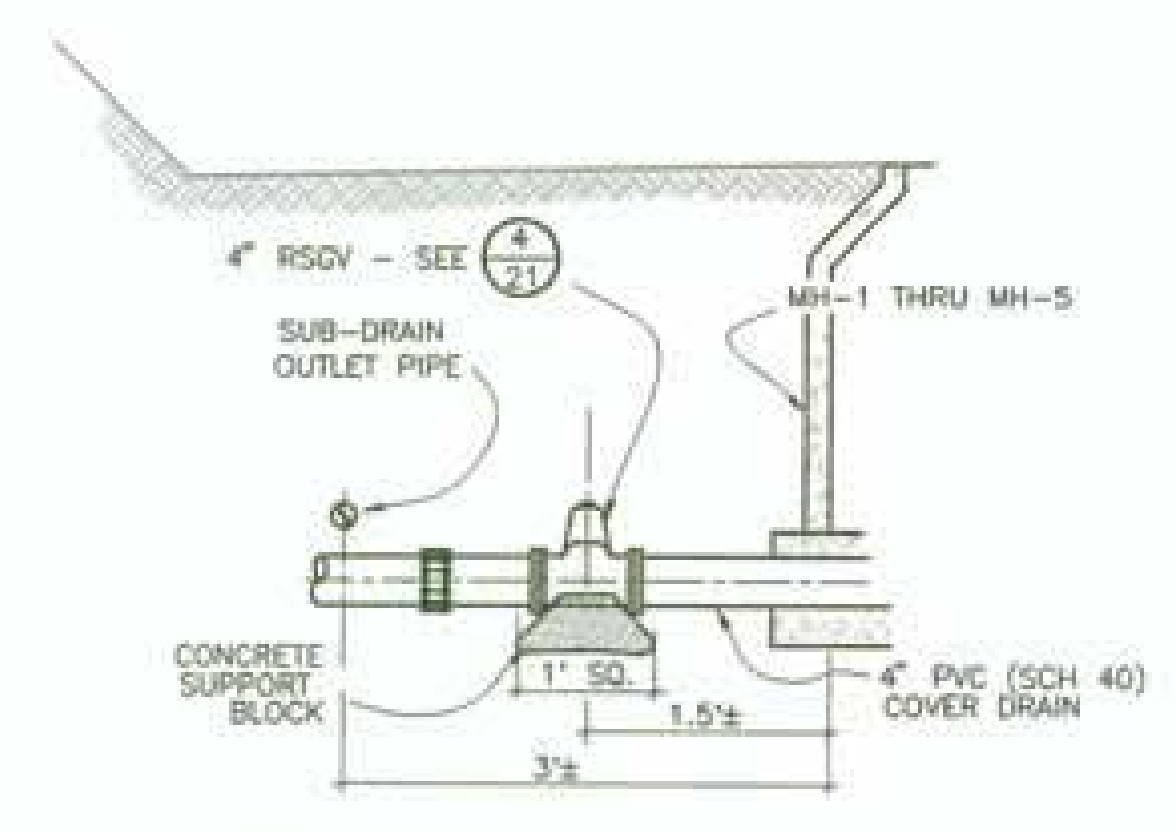
3 SUB-DRAIN AND COVER DRAIN PIPE TRENCH UNDER RESERVOIR BOTTOM
16 N.T.S.



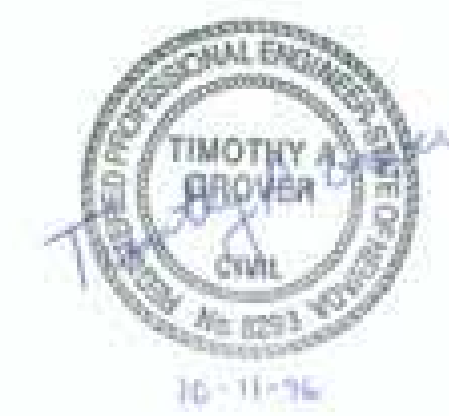
6 RESERVOIR COVER DRAIN CONNECTION DETAIL
16 N.T.S.



7 COVER DRAIN CLEANOUT INSTALLATION
16 N.T.S.

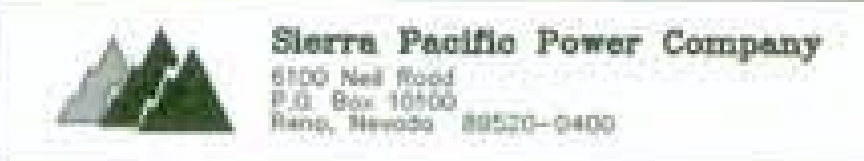


8 COVER DRAIN VALVE
16 N.T.S.



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SEA Job No. 0102-51-3
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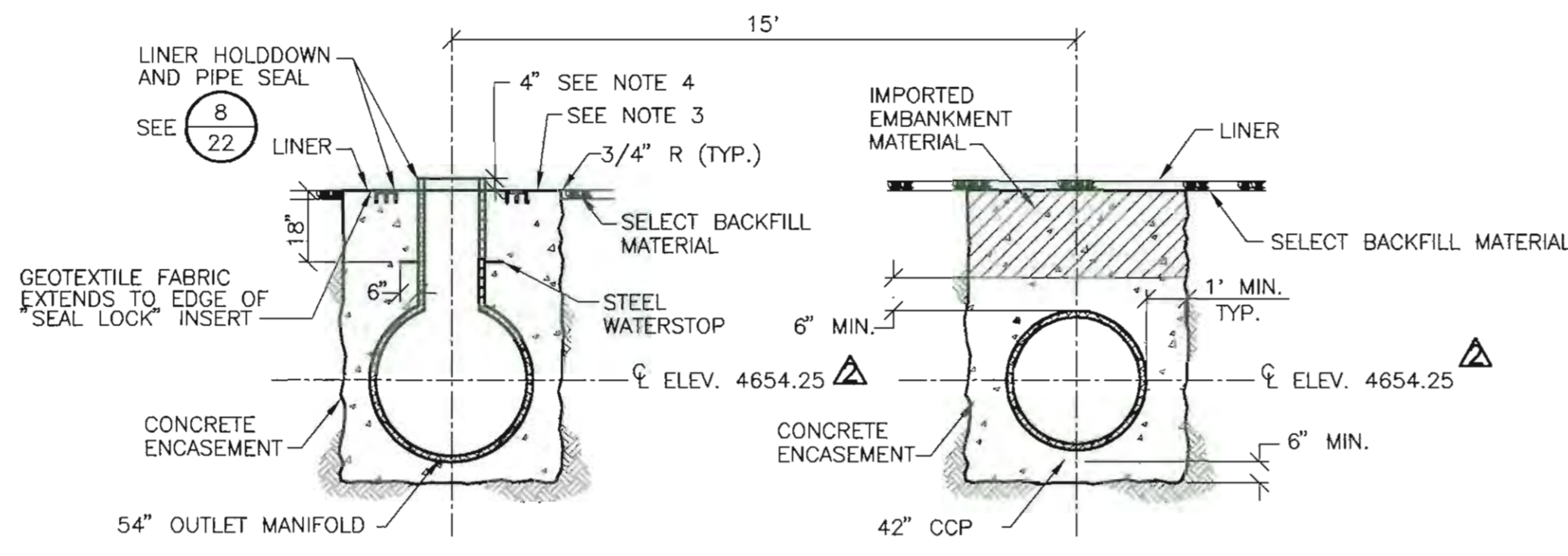
SIERRA PACIFIC POWER COMPANY
HIGHLAND RESERVOIR CONVERSION
COVER DRAIN AND SUB-DRAIN DETAILS

NE 1/4 OF SE 1/4 SEC. 3
WASHOE COUNTY T19N, R19E, M.D.B.&M. NEVADA

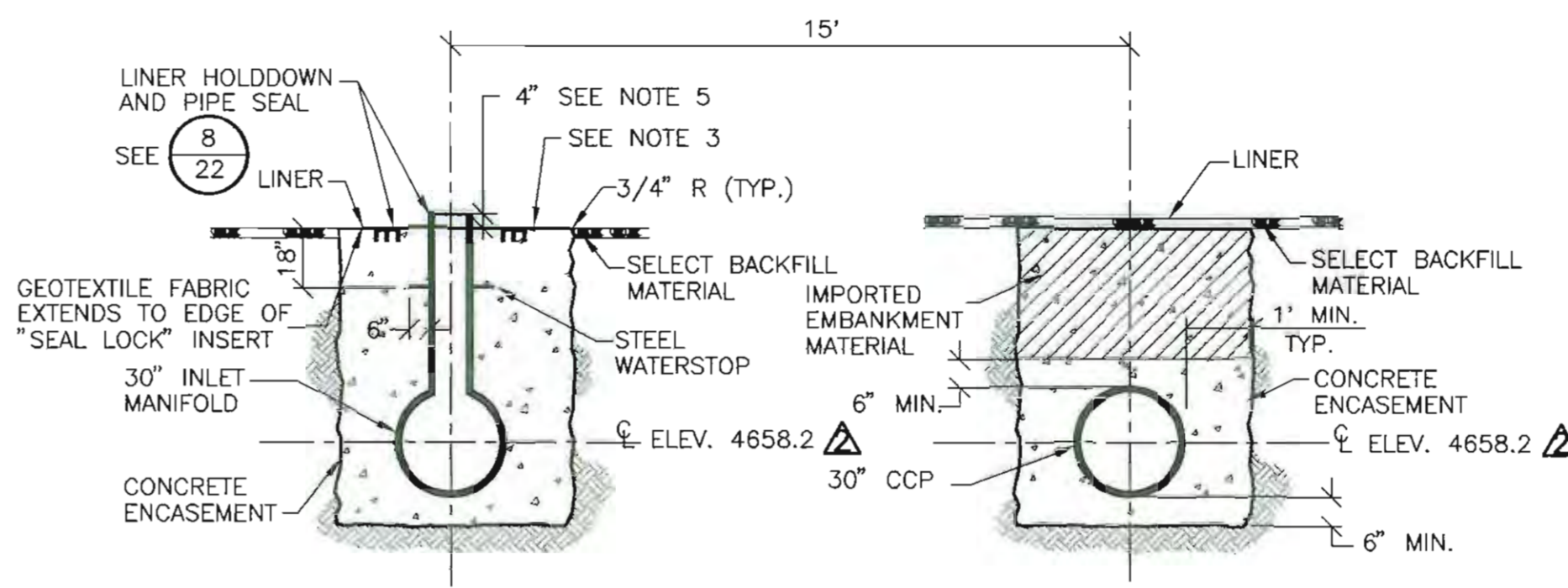
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APPROVED BY: [Signature]
DATE: 08-21-96

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Total Sheets: 171
Highland WTP/Reservoir
Facility Name: Highland
Facility Type: Reservoir

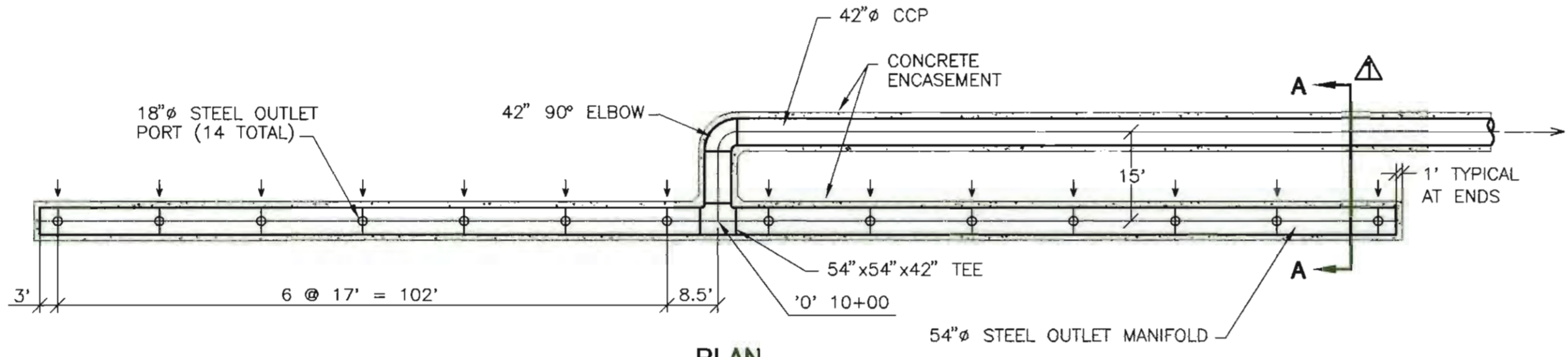
ISSUED FOR CONSTRUCTION
10/11/96



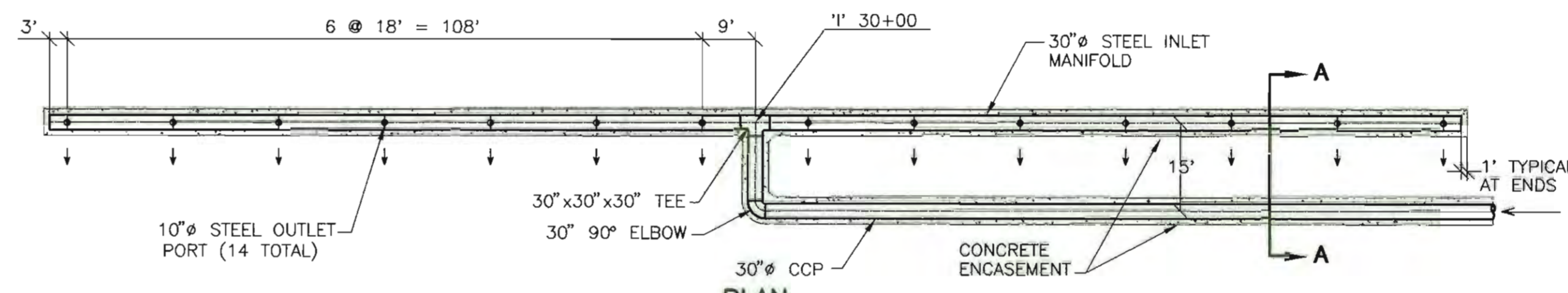
SECTION A-A
NTS



SECTION A-A
NTS



PLAN
1" = 20"



PLAN
1" = 20"

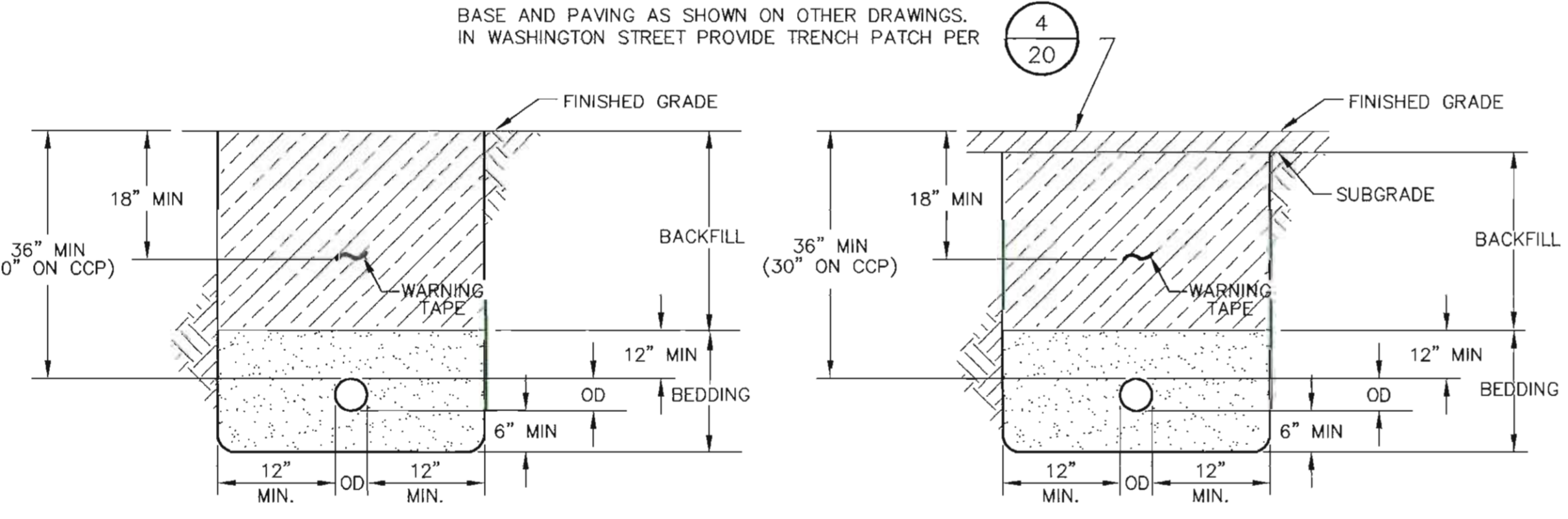
- NOTES:
1. ALL JOINTS SHALL BE WELDED.
 2. STEEL MANIFOLD SHALL BE CEMENT MORTAR LINED AND COATED, EXCEPT AS DESCRIBED IN NOTE 4.
 3. CONCRETE SURFACE AT EACH PORT SHALL HAVE A SMOOTH TROWEL FINISH.
 4. PIPE ABOVE CONCRETE ENCASUREMENT SHALL BE EPOXY COATED NOT CEMENT COATED.
 5. THE OUTLET MANIFOLD AND PIPING ARE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR. ALL OTHER ITEMS SHOWN ARE FURNISHED AND INSTALLED BY CONTRACTOR.

- NOTES:
1. ALL JOINTS SHALL BE WELDED.
 2. STEEL MANIFOLD SHALL BE CEMENT MORTAR LINED AND COATED, EXCEPT AS DESCRIBED IN NOTE 5.
 3. CONCRETE SURFACE SHALL HAVE A SMOOTH TROWEL FINISH.
 4. FOR DETAILS AND DIMENSIONS NOT SHOWN SEE OUTLET MANIFOLD DETAILS.
 5. PIPE ABOVE CONCRETE ENCASUREMENT SHALL BE EPOXY COATED NOT CEMENT COATED.
 6. THE INLET MANIFOLD AND PIPING ARE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR. ALL OTHER ITEMS SHOWN ARE FURNISHED AND INSTALLED BY CONTRACTOR.

1
20
OUTLET MANIFOLD

2
20
INLET MANIFOLD

RECORD DRAWINGS
THESE RECORD DRAWINGS HAVE BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED BY THE ENGINEER FROM VISUAL OBSERVATION AND FIELD SURVEY. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.
Revisions Drawn by T.A.G. Date 7/9/1997

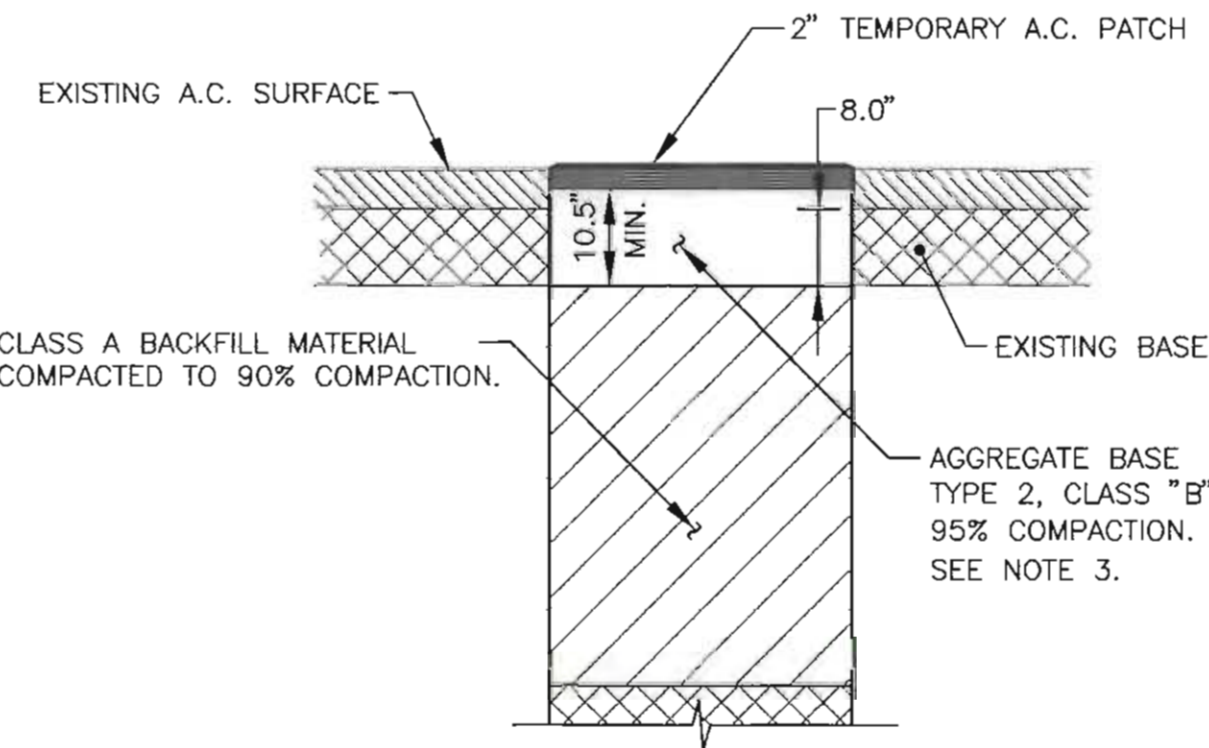


FINISHED GRADE

PAVEMENT

- NOTES:
1. ALL TRENCHES SHALL CONFORM TO APPLICABLE SPPCO, CITY, AND OSHA REQUIREMENTS.
 2. WARNING TAPE SHALL BE PLACED IN ALL TRENCHES AT LEAST 18" BELOW FINISHED GRADE OR 12" ABOVE THE PIPE.
 3. BEDDING AND BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION.
 4. BACKFILL SHALL BE IMPORTED EMBANKMENT MATERIAL (3" MINUS). BACKFILL IN WASHINGTON STREET SHALL BE CLASS A PER SECTION 200.03.02 OF THE "ORANGE BOOK."
 5. BEDDING SHALL BE SELECT BACKFILL MATERIAL.
 6. THIS DETAIL APPLIES OUTSIDE AND IN THE RESERVOIR FOOTPRINT WITHOUT MODIFICATION.
 7. THIS DETAIL APPLIES UNDER THE RESERVOIR EMBANKMENT WITH THE FOLLOWING CHANGES:
 - A. BEDDING FOR COVER DRAIN, SUB-DRAIN, AND OVERFLOW PIPES SHALL BE IMPORTED EMBANKMENT MATERIAL (3/4" MINUS).
 - B. CCP INLET AND OUTLET PIPES SHALL BE CONCRETE ENCASED.
 8. THIS DETAIL APPLIES UNDER THE RESERVOIR BOTTOM WITH THE FOLLOWING CHANGES:
 - A. BEDDING FOR COVER DRAIN PIPES SHALL BE SELECT BACKFILL MATERIAL AS SHOWN ON DETAIL 3/16.
 - B. BEDDING FOR SUB-DRAIN PIPES SHALL BE 3/4" DRAIN ROCK AS SHOWN ON DETAIL 3/16.
 - C. BEDDING MATERIAL SHALL EXTEND TO BOTTOM OF LINER FOR SUB-DRAIN AND COVER DRAIN PIPES.
 - D. CCP SHALL BE CONCRETE ENCASED AND BACKFILLED PER DETAILS 1/20 AND 2/20.
 9. CONCRETE CUTOFF WALLS SHALL BE INSTALLED ON CCP AND HDPE PIPE AS SHOWN ON THE PROFILES, SHEET 18.
 10. BENTONITE PLUGS SHALL BE USED ON SUB-DRAIN AND COVER DRAIN PIPES UNDER THE RESERVOIR EMBANKMENT PER DETAILS 4/16 AND 7/16.
 11. SET PIPES TO ELEVATIONS SHOWN ON SHEETS 15, 17, & 18.

3
20
TRENCH DETAILS
NTS



4
20
TEMPORARY TRENCH PATCH
NTS

1. PRIOR TO EXCAVATION, THE OUTLINE OF THE TRENCH SHALL BE VERTICALLY CUT FULL DEPTH THRU THE EXISTING ASPHALT SURFACE WITH A SAW, OR AN ASPHALT SPADE OR EQUIPMENT APPROVED BY THE ENGINEER.
2. CARE SHALL BE EXERCISED TO PREVENT SLOUGHING AND OVERBREAK. IF THE TRENCH SLOUGHS, THE SURFACE SHALL BE WIDENED TO ELIMINATE THE UNDERMINED SECTION OF ASPHALT.
3. TYPE 2, CLASS B, AGGREGATE BASE SHALL BE COMPACTED TO A THICKNESS OF AT LEAST 1 1/2" OR A DEPTH OF 8" BELOW THE BOTTOM OF THE EXISTING PAVEMENT, WHICHEVER IS GREATER.
4. A TEMPORARY PATCH OF COLD MIX ASPHALT CONCRETE SHALL BE PLACED AND COMPACTED. THE COMPACTED PATCH SHALL BE APPROXIMATELY 1/8" TO 1/4" ABOVE THE LEVEL OF THE ADJACENT PAVEMENT. IF NOT PATCHED WITHIN 24 HOURS AFTER BACKFILLING, THE CITY MAY PATCH AND BCK-CHARGE THE PERMITTEE FOR ALL COSTS.
5. COMPACTION OF BACKFILL, BASE, AND AC TEMPORARY PATCH SHALL BE PERFORMED WITH APPROVED MECHANICAL TAMPERS. EQUIPMENT WHEEL ROLLING IS NOT PERMITTED.
6. ENTIRE AREA SHALL BE CLEANED OF ALL DIRT, DUST, DEBRIS, ETC. BEFORE LEAVING SITE. ANY SITE LEFT UNCLEANED WILL BE CLEANED BY THE CITY AND ALL COSTS BACK-CHARGED TO THE PERMITTEE.
7. TUNNELING UNDER CURB AND GUTTER OR SIDEWALK IS NOT PERMITTED. COMPLETE REMOVAL REQUIRED TO THE NEAREST CONSTRUCTION OR EXPANSION JOINT OUTSIDE THE TRENCH WIDTH.
8. ALL EXCAVATIONS SHALL BE COMPLETE OR BACKFILLED AT THE END OF THE DAY.
9. 24 HOURS PRIOR TO TRENCH EXCAVATION, NOTIFY THE OFFICE OF THE CITY ENGINEER AT 334-2350.



RENO/SPARKS, NEVADA
LAS VEGAS, NEVADA
PHOENIX, ARIZONA

SEA Job No. 0102-51-3

REVISIONS	
△	CORRECTED DIRECTION OF SECTION ARROW.
△	REVISED MANIFOLD ELEVATION PER PROFILE REVISIONS. 12/6/96.
STATE ENGINEERS USE ONLY	
Sierra Pacific Power Company 6100 Nell Road P.O. Box 10100 Reno, Nevada 89520-0400	
SIERRA PACIFIC POWER COMPANY HIGHLAND RESERVOIR CONVERSION	
NE 1/4 OF SE 1/4 SEC. 3 WASHOE COUNTY T19N, R19E, M.D.B.&M. NEVADA	
PIPING DETAILS	
SHEET 20 OF 27	
DESIGN BY: TAG	DRAWN BY: CHW
W.D. NUMBER: 08624-80-1	APPROVED BY: DATE: 08-21-96