

SYMBOL LEGEND

EXISTING

- SBH ■ STONE BOUND WITH DRILL HOLE
- SB ■ STONE BOUND
- DHF ⊙ DRILL HOLE FOUND
- ⊙ DISK
- IPF ● IRON PIPE FOUND
- IRF ● IRON ROD FOUND
- BASKETBALL HOOP
- ⊠ AIR CONDITIONER
- ⊠ DRAIN GATE
- AREA DRAIN
- CATCH BASIN
- DRAIN MANHOLE
- NO LABEL MANHOLE
- SEWER MANHOLE
- ⊠ ELECTRIC BOX
- ⊠ ELECTRIC HANDHOLE
- ⊠ ELECTRIC METER
- ⊠ ELECTRIC MANHOLE
- ⊠ GAS RISER
- ⊠ GAS METER
- ⊠ GAS VALVE
- ⊠ CABLE BOX
- ⊠ CABLE MANHOLE
- ⊠ TELEPHONE BOX
- ⊠ TELEPHONE MANHOLE
- ⊠ WATER HANDHOLE
- ⊠ WATER MANHOLE
- ⊠ WATER GATE
- ⊠ IRRIGATION CONTROL VALVE
- ⊠ FIRE HYDRANT
- ⊠ T-POLE
- ⊠ UTILITY POLE
- ⊠ UTILITY POLE WITH LIGHT
- ⊠ UTILITY POLE WITH LIGHT AND RISER
- ⊠ UTILITY POLE WITH LIGHT, RISER AND TRANSFORMER
- ⊠ UTILITY POLE WITH TRANSFORMER
- ⊠ UTILITY WITH RISER AND TRANSFORMER
- ⊠ DECIDUOUS TREE
- ⊠ CONIFER TREE
- ⊠ SHRUB
- ⊠ SIGN (SINGLE POSTED)
- POST
- ⊠ MAILBOX
- ☆ LIGHT POLE
- ⊠ BOLLARD
- ⊠ FIRE BOX
- RIGHT-OF-WAY
- CHAIN LINK FENCE
- WOOD FENCE
- METAL/WIRE FENCE
- SEWER LINE
- DRAIN LINE
- WATER LINE
- GAS LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND CABLE
- TELEPHONE LINE
- OVERHEAD WIRES
- STONE WALL
- TREE LINE
- HEDGE
- 52----- INTERMEDIATE CONTOURS
- 50----- INDEX CONTOURS

PROPOSED

- ===== SANITARY SEWER
- ===== STORM DRAIN
- D — DRAIN SERVICE LATERAL
- W — WATER LINE
- G — GAS LINE
- ⊠ TEST PIT
- ⊠ TYPE 1 CATCH BASIN
- ⊠ TYPE 5 CATCH BASIN
- ⊠ DRAIN MANHOLE
- ⊠ SANITARY MANHOLE
- ⊠ FIRE HYDRANT
- ⊠ WATER GATE
- ⊠ REDUCER
- ⊠ FLEX COUPLING

ABBREVIATIONS

- ABND. ABANDONED
- A.G. ABOVE GRADE
- BC BITUMINOUS CURB
- BIT. BITUMINOUS PAVEMENT
- BOT. BOTTOM
- BW. BOTTOM OF WALL
- BRW. BRICK RETAINING WALL
- CB. CATCH BASIN
- CC. CONCRETE CURB
- CCDF. CONTROLLED DENSITY FILL
- CI. CAST IRON
- CLF. CENTERLINE OF TROUGH
- CLF. CHAIN LINK FENCE
- C.O. CLEAN OUT
- CONC. CONCRETE
- CRW. CONCRETE RETAINING WALL
- CS. COMBINED SEWER
- CSU. CONCRETE SEGMENTS (UNBOLTED)
- CTE. CONNECT TO EXISTING
- CTV. CABLE TELEVISION
- CU. COPPER
- DI. DUCTILE IRON
- DMH. DRAIN MANHOLE
- EG. EXISTING GRADE
- ELEV. ELEVATION
- EMH. ELECTRIC MANHOLE
- EXIST. EXISTING
- FA. FIRE ALARM
- FB. FIRE BOX
- FP. FINISHED GRADE
- FP. FLAG POLE
- FS. FLAGSTONE
- GC. GRANITE CURB
- GG. GAS GATE
- GM. GAS METER
- GRAN. GRANITE
- GV. GATE VALVE
- GW. GROUND WATER
- H.H. HAND HOLE
- HYD. HYDRANT
- I. INVERT
- IB. INFILTRATION BASIN
- LD. LEAD
- LP. LIGHT POST
- NVO. NO VISIBLE OUTLET
- P. POST
- PM. PARKING METER
- PROP. PROPOSED
- PVC. POLYVINYL CHLORIDE
- R. RIM
- RCP. REINFORCED CONCRETE PIPE
- REQ'D. REQUIRED
- R.R. REMOVE AND REPLACE
- RWS. RETAINING WALL STONE
- RWCN. RETAINING WALL CONCRETE
- S. SIGN
- SD. STORM DRAIN
- SMH. SEWER MANHOLE
- SRT. STONE RETAINING WALL
- SS. SANITARY SEWER
- SST. STAINLESS STEEL
- TBM. TEMPORARY BENCH MARK
- TC. TOP OF CURB
- TCB. TRAFFIC CONTROL BOX
- TELE. TELEPHONE
- THRESH. THRESHOLD
- TL. TRAFFIC LIGHT
- TOH. TOP OF HOOD
- T.S. TOP OF STEP
- TW. TOP OF WATER
- UNK. UNKNOWN
- UP. UTILITY POLE
- VC. VITRIFIED CLAY
- VGC. VERTICAL GRANITE CURB
- W. WATER ELEVATION
- W. WITH
- WD. WOOD
- WG. WATER GATE
- WL. WATER LEVEL
- WMH. WATER MANHOLE
- WRW. WOOD RETAINING WALL
- WW. WINDOW WELL

GENERAL NOTES

1. EXACT DEPTHS OF EXISTING PAVEMENT BASES AND SURFACE COURSES ARE NOT KNOWN AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROXIMATE DEPTHS OF EXISTING PAVEMENT BASES AND SURFACE COURSES ARE INDICATED IN THE BORING LOGS, REFER TO SHEET G-3.
2. IT IS INTENDED THAT THE EXISTING SANITARY SERVICES WILL REMAIN IN SERVICE. THE OWNER OR ENGINEER WILL DETERMINE, IN EACH CASE, IF THE EXISTING SANITARY SERVICE IS IN ACCEPTABLE CONDITION OR TO BE REPLACED TO PROPERTY LINE. EXISTING SANITARY SEWER SERVICES ARE, IN GENERAL, 6 INCHES IN DIAMETER, BUT LARGER OR SMALLER SERVICES MAY BE ENCOUNTERED. IF REPLACEMENT IS NECESSARY SANITARY SERVICES 6 INCHES IN DIAMETER AND SMALLER SHALL BE REPLACED WITH NEW 6-INCH DIAMETER PVC PIPE, AND SANITARY SERVICES LARGER THAN 6 INCHES IN DIAMETER SHALL BE REPLACED WITH AN EQUAL SIZE PVC SERVICE AS THE EXISTING.
3. DIVERSION, BYPASS, AND CONTROL OF SANITARY SEWER, STORM DRAIN AND DEWATERING FLOWS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S INTENDED DIVERSION, BYPASS, AND CONTROL, AND DEWATERING PLANS SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR REVIEW AT LEAST 7 DAYS PRIOR TO ANY EXCAVATION. WHEN PERFORMING DEWATERING, THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF SECTION 02210, SECTION 01500, SECTION 02140, AND ALL DEWATERING PERMITS.
4. THE CONTRACTOR SHALL TEMPORARILY MATCH EXISTING GRADES AND CONDITIONS WITHIN THE CONSTRUCTION AREA UNTIL FINAL RESTORATION IS COMPLETE.
5. CONTRACTOR SHALL CAP OPENINGS IN EXISTING CATCH BASINS AND MANHOLES WHEN DRAWINGS INDICATE THAT PIPES ARE TO BE REMOVED OR ABANDONED. EXISTING CATCH BASIN LATERALS WHICH ARE NOT RECONNECTED SHALL BE ABANDONED BY CAPPING BOTH ENDS. CAP SHALL BE WATERTIGHT. ABANDONMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH SPEC. SECTION 02051.
6. CONTRACTOR SHALL CUT OPENINGS IN EXISTING CATCH BASINS AND MANHOLES FOR NEW PIPES WHEN EXISTING STRUCTURES ARE TO BE INCLUDED IN THE PROPOSED COLLECTION SYSTEM. NEW CONNECTIONS SHALL BE SEALED WATERTIGHT. ALL NEW PENETRATIONS SHALL BE CIRCULAR CORED OPENINGS. SAW CUT OR HAMMERED NON-CIRCULAR OPENINGS ARE NOT ALLOWED.
7. ALL EXTERIOR SURFACES OF CONCRETE STRUCTURES SHALL BE COATED IN ACCORDANCE WITH SPECIFICATION SECTION 07160.
8. EXISTING AND PROPOSED ROADWAY CENTERLINE ELEVATIONS ARE SHOWN ON THE ROADWAY DESIGN DRAWINGS. ELEVATIONS SHOWN ON CIVIL DRAWING PROFILES ARE EXISTING CENTERLINE ELEVATION ONLY. ALL STATIONING IS TO CENTER OF STRUCTURE. DISTANCES OF "LEFT" (L) AND "RIGHT" (R) ON THE PLAN REFER TO THE ORIENTATION RELATIVE TO THE STATION LINE WHEN FACING THE POSITIVE DIRECTION. THE STATIONS AS SHOWN FOR SEWERS AND DRAINS ARE APPROXIMATE. THE EXACT STATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND RECORDED ON THE RECORD DRAWINGS.
9. CONTRACTOR SHALL REFER TO THE CAMBRIDGE WATER DEPARTMENT, CONSTRUCTION AND OPERATING PRACTICES IN THE CONTRACT SPECIFICATION FOR ADDITIONAL CONSTRUCTION DETAILS.
10. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL FIELD VERIFY THE FUNCTION (SANITARY SEWER OR STORM DRAIN) OF ALL UNKNOWN EXISTING SERVICES, AND SHALL THEN CONNECT EACH SERVICE TO THE APPROPRIATE SANITARY SEWER OR STORM DRAIN. THE COST OF THIS VERIFICATION IS CONSIDERED INCIDENTAL TO THE COST OF THE CONTRACT AND NOT ELIGIBLE FOR SEPARATE PAYMENT.
11. THE LOCATION OF EXISTING UNDERGROUND PIPES, CABLES, CONDUITS AND STRUCTURES AS SHOWN HAS BEEN COLLECTED FROM THE BEST AVAILABLE SOURCES AND THE OWNER TOGETHER WITH ITS AGENTS DOES NOT IMPLY OR GUARANTEE THE DATA AND INFORMATION IN CONNECTION WITH THE UNDERGROUND PIPES, CABLES, CONDUITS, STRUCTURES AND SUCH OTHER PARTS AS TO THEIR COMPLETENESS NOR THEIR LOCATIONS AS INDICATED. THE CONTRACTOR SHALL CONTACT UTILITY OWNERS AND REQUEST MARKING LOCATION OF ALL THEIR LINES IN THE WORK AREAS. PRIOR TO EXCAVATION THE CONTRACTOR SHALL ASSUME THAT THERE ARE EXISTING WATER, GAS, AND OTHER UTILITY CONNECTIONS TO EACH AND EVERY BUILDING ENROUTE, WHETHER THEY APPEAR ON THE PLANS OR NOT. ANY EXPENSE AND/OR DELAY OCCASIONED BY THESE UTILITIES AND STRUCTURES OR DAMAGE THERETO, INCLUDING THOSE NOT SHOWN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND AT NO ADDITIONAL EXPENSE TO THE OWNER. (SEE SPECIAL CONDITIONS).
12. FOUNDATIONS AND LINES FOR SERVICES, POLICE AND FIRE ALARM BOXES, STREET LIGHTS, AND TRAFFIC SIGNALS ARE NOT SHOWN ON THE PLANS. THE APPROPRIATE UTILITY COMPANIES OR AUTHORITIES SHOULD BE CONTACTED AND CONSULTED FOR LOCATIONS OF THE ABOVE PRIOR TO EXCAVATION.
13. THE CONTRACTOR SHALL PREMARK THE EXCAVATION AREA IN WHITE AND NOTIFY THE DIG SAFE CENTER (TEL. NO.1-888-DIG-SAFE) AT LEAST 72 BUSINESS HOURS PRIOR TO ANY EXCAVATION WORK. IN ADDITION, NOTIFICATION SHALL ALSO BE GIVEN TO ALL AFFECTED PRIVATE AND/OR PUBLIC UTILITIES TO PERMIT STREET MARKING OF THEIR LINES.
14. ALL EXISTING MANHOLE FRAMES, COVERS, CATCH BASIN FRAMES AND GRATES REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER AND THEN LATER BE SELECTED BY THE OWNER AND DELIVERED BY THE CONTRACTOR TO A LOCATION DESIGNATED BY THE OWNER. ALL REMAINING FRAMES, COVERS AND GRATES NOT SELECTED BY AND DELIVERED TO THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. BORINGS INDICATED ON SHEET G-3 WERE TAKEN FOR THE PURPOSE OF DESIGN AND INDICATE CONDITIONS AT THE LOCATION OF THE BORING ONLY. SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION MAY VARY FROM THOSE SHOWN IN THE BORING LOGS PER APPENDIX B OF THE SPECIFICATIONS. GROUNDWATER LEVELS INDICATED IN THE BORING LOGS ARE THOSE EXISTING AT THE TIME SUBSURFACE INVESTIGATIONS WERE MADE AND DO NOT REPRESENT PERMANENT GROUNDWATER LEVELS. FOR BORING LOGS, SEE THE SPECIFICATIONS.
16. TEST PITS SHALL BE EXCAVATED AT THOSE LOCATIONS INDICATED ON THE DRAWINGS AND WHERE ORDERED OR APPROVED BY THE OWNER. ALL TEST PIT EXCAVATIONS SHALL BE MADE TO DETERMINE THE LOCATIONS OF EXISTING UTILITIES OR STRUCTURES AND PERFORMED 30 DAYS IN ADVANCE OF CONSTRUCTION OPERATIONS SO THAT ANY CHANGES IN ALIGNMENT AND/OR GRADE OF THE PROPOSED WORK OR UTILITY LOCATIONS MAY BE DETERMINED. ALL DECISIONS RELATIVE TO UTILITY CONFLICTS AND RELOCATION REQUIREMENTS WILL BE MADE BY THE UTILITY OWNER. AT THOSE LOCATIONS WHERE EXPLORATORY TEST PITS ARE REQUIRED TO DETERMINE THE LOCATION OF EXISTING UTILITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES INVOLVED AT LEAST 72 HOURS PRIOR TO EXCAVATION OF THE TEST PITS.
17. WHERE TEMPORARY OR PERMANENT UTILITY RELOCATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY 30 DAYS IN ADVANCE OF CONSTRUCTION AND SHALL COORDINATE THE NEW WORK WITH THE UTILITY RELOCATION.
18. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF WATER MAINS WITH THE RESIDENT ENGINEER AND THE CITY WATER DEPARTMENT.
19. LOCATIONS OF NEW WATER, SANITARY, AND DRAINAGE SERVICE CONNECTIONS SHALL BE DETERMINED DURING CONSTRUCTION, IN CONSULTATION WITH PROPERTY OWNER AND CITY.
20. THE LIMITS OF BELOW GRADE EXCAVATIONS FOR NEW PIPELINES OR STRUCTURES ARE APPROXIMATE. ACTUAL HORIZONTAL AND VERTICAL LIMITS INCLUDING MEASUREMENT FOR THE NEW WORK SHALL BE APPROVED BY THE ENGINEER DURING CONSTRUCTION.
21. INTERRUPTIONS OF SERVICES SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES AND PROVIDE ALL TEMPORARY UTILITIES AND CONNECTIONS TO AVOID INTERRUPTIONS OF WATER, SANITARY, DRAINAGE, ELECTRIC, PHONE, GAS, FIBEROPTICS, AND CABLE SERVICES.
22. PRIOR TO BEGINNING WORK THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS INFORMATION AND REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS TO THE ENGINEER.
23. THE CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENT CONTROL DEVICES, AND SHALL NOT COMMENCE CONSTRUCTION UNTIL THESE MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER.
24. THE CONTRACTOR SHALL PROTECT ALL TRAVELED WAYS FROM DUST AND CONSTRUCTION DEBRIS AT ALL TIMES.
25. UNLESS OTHERWISE INDICATED ON THE DRAWINGS ALL AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
26. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEMOLISHED MATERIALS, RUBBISH, EXCAVATED MATERIAL AND DEBRIS, UNLESS OTHERWISE NOTED, AND IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL DISPOSAL PERMITS AT NO ADDITIONAL COST TO THE OWNER.
27. THE CONTRACTOR MAY BE ASKED BY THE OWNER TO SUSPEND CONSTRUCTION OPERATIONS TEMPORARILY TO AVOID CONFLICTS WITH LARGE PUBLIC EVENTS OR LARGE STORM EVENTS. THE CONTRACTOR SHALL NOT BE COMPENSATED FOR COSTS RELATING TO SHUTDOWNS FOR THESE REASONS.
28. THE CONTRACTOR SHALL NOT BLOCK ACCESS TO STREET AND PRIVATE PARKING IN THE VICINITY OF THE LIMITS OF CONSTRUCTION AFTER WORK HOURS AND ON WEEKENDS.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW PLOWING AND SNOW REMOVAL FROM ALL AREAS WHERE HIS PRESENCE IS MAINTAINED INCLUDING BUT NOT LIMITED TO, UNPAVED SURFACES, PARKED EQUIPMENT AREAS OR ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR STREET SWEEPING, SNOW REMOVAL FROM SIDEWALKS, TRASH REMOVAL, AND RECYCLABLE MATERIALS FROM ALL AREAS WHERE CONSTRUCTION RESTRICTS VEHICULAR OR PEDESTRIAN ACCESS TO STREETS OR SIDEWALKS AND WHERE CONTRACTOR'S PRESENCE INTERFERES WITH MUNICIPAL TRASH REMOVAL, STREET SWEEPING, OR SNOW PLOWING AND REMOVAL.
30. AREAS WITHIN THIS CONTRACT ARE SUBJECT TO THE UTILITY RELATED ABATEMENT MEASURE REGULATIONS OF THE MASSACHUSETTS CONTINGENCY PLAN 310 CMR 40.00 AND SECTIONS 02010, 02080, 02095 OF THE SPECIFICATIONS. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO ENVIRONMENTAL DATA (SOIL AND GROUND WATER) FROM BORINGS AND MONITORING WELLS AS REPRESENTATIVE OF SUBSURFACE CONDITIONS IN URBAN AREAS. THE ENVIRONMENTAL DATA ARE APPENDED TO THE SPECIFICATIONS.
31. THE CONTRACTOR SHALL NOT BE PERMITTED TO STARTUP OR OPERATE EQUIPMENT BEFORE OR AFTER ESTABLISHED WORKING HOURS OF 7:00 AM TO 4:00 PM, MONDAY THROUGH FRIDAY WITHOUT WRITTEN APPROVAL OF THE OWNER, UNLESS NOTED OTHERWISE.
32. EXISTING CONDITIONS ARE SHOWN SCREENED.
33. ALL REPLACEMENT WATER SERVICE CONNECTIONS TO BE 1-INCH COPPER UNLESS OTHERWISE NOTED.
34. ALL EXISTING SEWER AND DRAIN PIPE REPLACED BY PROPOSED SEWER AND DRAIN PIPE SHALL BE REMOVED, UNLESS OTHERWISE INDICATED ON THE DRAWINGS TO BE ABANDONED.
35. SEE APPENDIX E OF THE SPECIFICATIONS FOR A LIST OF SANITARY CONNECTIONS TO EXISTING OR PROPOSED STORM DRAINS TO BE REDIRECTED TO THE EXISTING/PROPOSED SANITARY SEWER.
36. CONTROLLED DENSITY FILL (CDF) SHALL BE REQUIRED FOR ALL UTILITY CROSSINGS WITH CLEARANCE LESS THAN 12 INCHES.
37. STRUCTURAL REPAIRS TO EXISTING PIPES SHALL BE COMPLETED PRIOR TO INSTALLATION OF NEW SEWER OR DRAIN AND NEW OR REPLACEMENT LATERAL CONNECTIONS TO THE EXISTING MAIN.
38. WHERE NEW SYSTEMS ARE TO BE LAID INTO EXISTING SYSTEMS, WHICH ARE REQUIRED TO BE SHUTDOWN TO MAKE THE TIE-IN, THE NEW SYSTEM SHALL BE FULLY PREPARED IN ANTICIPATION OF THE TIE-IN TO MINIMIZE DOWNTIME OF THE EXISTING SYSTEM. THE NEW SYSTEM SHALL BE FULLY TESTED TO THE MAXIMUM EXTENT POSSIBLE PRIOR TO THE TIE-IN. MEASUREMENTS SHALL BE TAKEN TO ENSURE THAT THE NEW SYSTEM IS OF THE CORRECT SIZE, LENGTH AND ALIGNMENT TO COMPLETE THE TIE-IN.
39. ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING AND TEMPORARY PAVING OR BY COVERING WITH STEEL PLATES WHEN APPROVED BY THE OWNER.
40. EXISTING UTILITY POLES THAT FALL WITHIN 5 FEET OF THE PROPOSED EDGE OF TRENCH SHALL BE SUPPORTED BY THE UTILITY OWNER DURING EXCAVATION OF THE TRENCH. CONTRACTOR SHALL COORDINATE SUPPORT AND BE RESPONSIBLE FOR COSTS AND FEES. WHERE EXISTING GAS, ELECTRIC AND TELECOM UTILITIES CROSS THE PROPOSED TRENCH LIMITS, CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER TO SUPPORT AND BE RESPONSIBLE FOR COSTS AND FEES. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE EXISTING UTILITY IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.
41. THE CONTRACTOR SHALL INSTALL TRENCH DAMS BETWEEN MANHOLES AND AT 300 FOOT INTERVALS ALONG ALL PROPOSED PIPING, OR AS DIRECTED BY THE OWNER. CONTROLLED LOW STRENGTH MATERIAL SHALL NOT BE USED AROUND WATER VALVES OR VALVE BOXES. PROVIDE ACCEPTABLE PROTECTIVE LAYER BETWEEN DUCTILE IRON AND CONTROLLED LOW STRENGTH MATERIAL OR USE A NON-FLY ASH MATERIAL APPROVED BY THE ENGINEER.
42. ALL CONSTRUCTION SHALL BE CARRIED OUT PER SPECIFICATION SECTION 01063-SEQUENCING OF WORK.

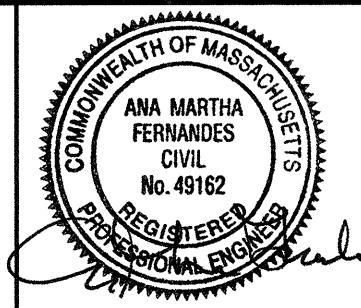
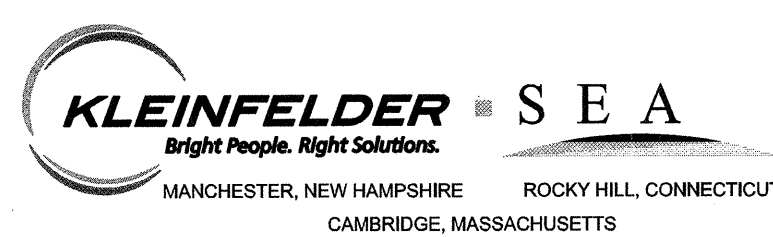
SURVEYING NOTES

1. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
2. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO EXCAVATING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
3. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
4. PROPERTY LINES OF PRIVATE OWNERSHIP HAVE BEEN TAKEN FROM CITY OF CAMBRIDGE ASSESSOR MAPS AND SHOULD BE CONSIDERED APPROXIMATE.

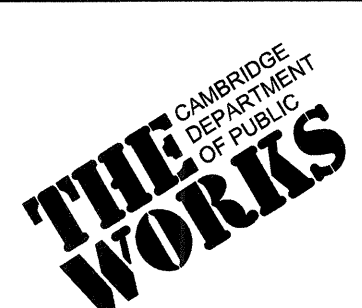
SPECIAL NOTES FOR TREE PROTECTION

1. REFER TO "CITY OF CAMBRIDGE DEPARTMENT OF PUBLIC WORKS-DIVISION OF URBAN FORESTRY, TREE PROTECTION DURING CONSTRUCTION" IN THE CONTRACT DOCUMENTS. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH MASSACHUSETTS STATE LAW CHAPTER 87, SECTION 12.
2. A MASSACHUSETTS OR INTERNATIONAL CERTIFIED ARBORIST SHALL BE SUB-CONTRACTED BY THE CONTRACTOR TO PROVIDE A TREE PROTECTION PLAN AND PERFORM SPECIFIED WORK.
3. ALL TREES SHALL BE PRUNED PRIOR TO CONSTRUCTION.
4. ALL TREES NOT IDENTIFIED FOR REMOVAL SHALL BE PROTECTED AGAINST CONSTRUCTION AND TRUCKING RELATED DAMAGE TO THEIR TRUNKS, ROOTS, AND LIMBS. TREE TRUNKS SHALL BE WRAPPED AND/OR BARRICADED FOR PROTECTION IF NECESSARY. TREE LIMBS SHALL BE TEMPORARILY SUPPORTED TO AVOID DAMAGE AND/OR PROFESSIONALLY PRUNED IF THEY CAN NOT BE AVOIDED. BREAKAGE OF THE LIMBS SHALL NOT BE PERMITTED. IN ADDITION TO THE "CONSTRUCTION PRUNING" SPECIFICALLY IDENTIFIED, ALL TREES WITHIN THE PROJECT AREA AND ALONG TRUCK ROUTE, SHALL BE PROTECTED FROM DAMAGE OR PROFESSIONALLY PRUNED. "CONSTRUCTION PRUNING" SHALL CONSIST OF SQUARELY CUTTING LIMBS ONLY WHERE THEY CANNOT BE AVOIDED BY TRUCKS OR EQUIPMENT (RAISE PRUNING).
5. ALL TREE PROTECTION MEASURES AND OPERATIONS AND ALL ROOT PRUNING, TREE REMOVAL, AND TREE PRUNING SHALL BE SUBJECT TO REVIEW, APPROVAL OR CHANGE BY THE CITY ARBORIST.
6. AT THE OWNER'S DISCRETION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL ANY TREE DAMAGED BY CONSTRUCTION OR TRUCKING OPERATIONS, REMOVAL OF THE STUMP, AND REPLACEMENT OF THE TREE IN KIND AT NO ADDITIONAL COST TO THE OWNER. ADDITIONAL FINES MAY ALSO BE IMPOSED FOR DAMAGE AS PER CONTRACT SPECIFICATIONS.
7. BREAKAGE OF TREE ROOTS SHALL NOT BE PERMITTED AND ROOT PRUNING SHALL BE MINIMIZED. TREE ROOTS THAT CANNOT BE AVOIDED DURING CONSTRUCTION SHALL BE PRUNED IN ACCORDANCE WITH THE SPECIFICATIONS AND UNDER SUPERVISION OF THE CITY ARBORIST, INCLUDING ROOT TREATMENT IF REQUIRED.
8. THE CONTRACTOR SHALL COORDINATE WITH DIG SAFE PRIOR TO REMOVING ANY STUMPS. DAMAGE TO EXISTING SIDEWALKS AND UTILITIES SHALL BE REPAIRED AS SPECIFIED AFTER REMOVING STUMPS.
9. TREES AND STUMPS REMOVED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW TREES AS DIRECTED. STUMP REMOVAL SHALL BE SUFFICIENT TO ALLOW PLANTING OF NEW TREE.

CONFORMED SET

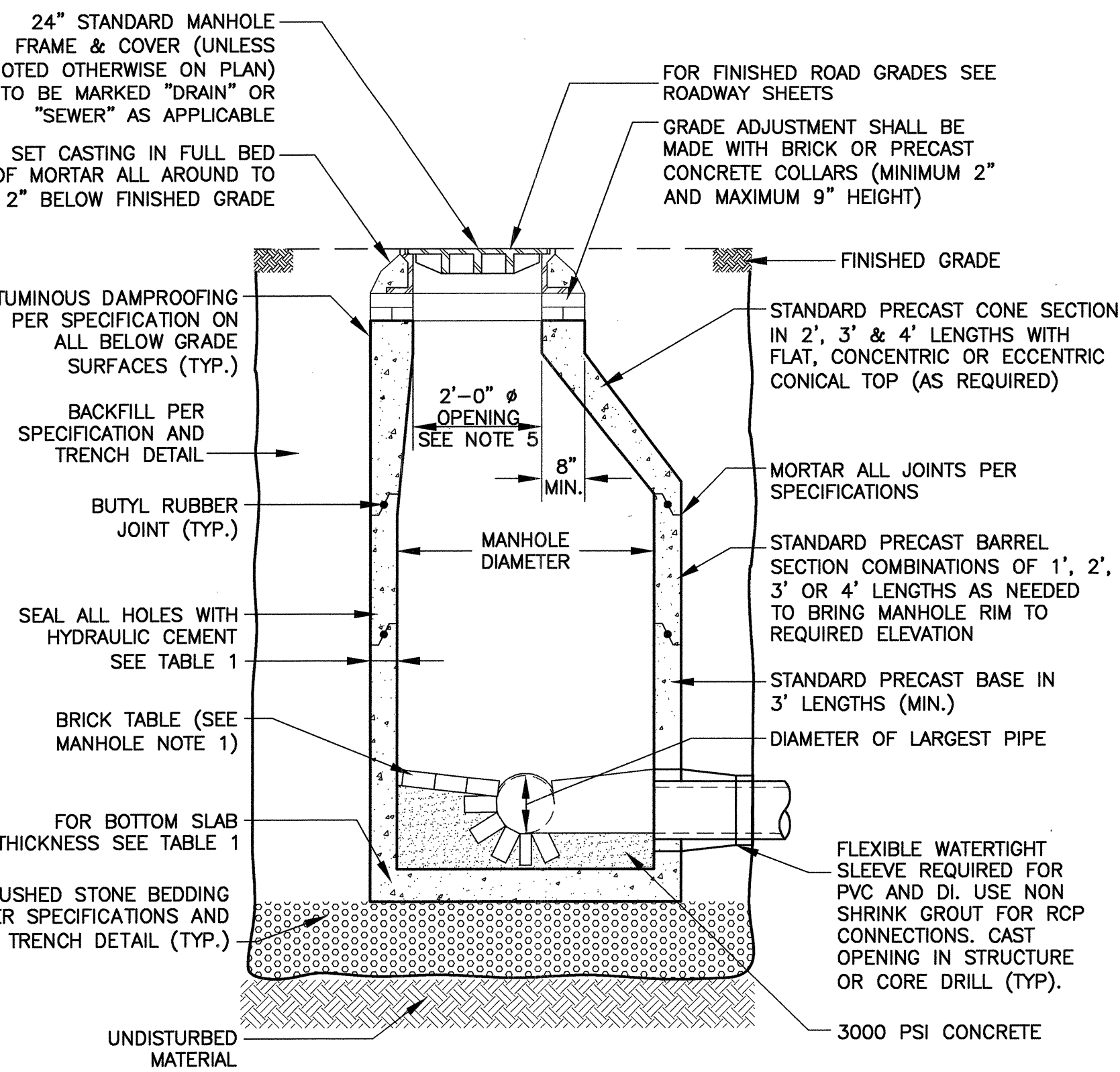
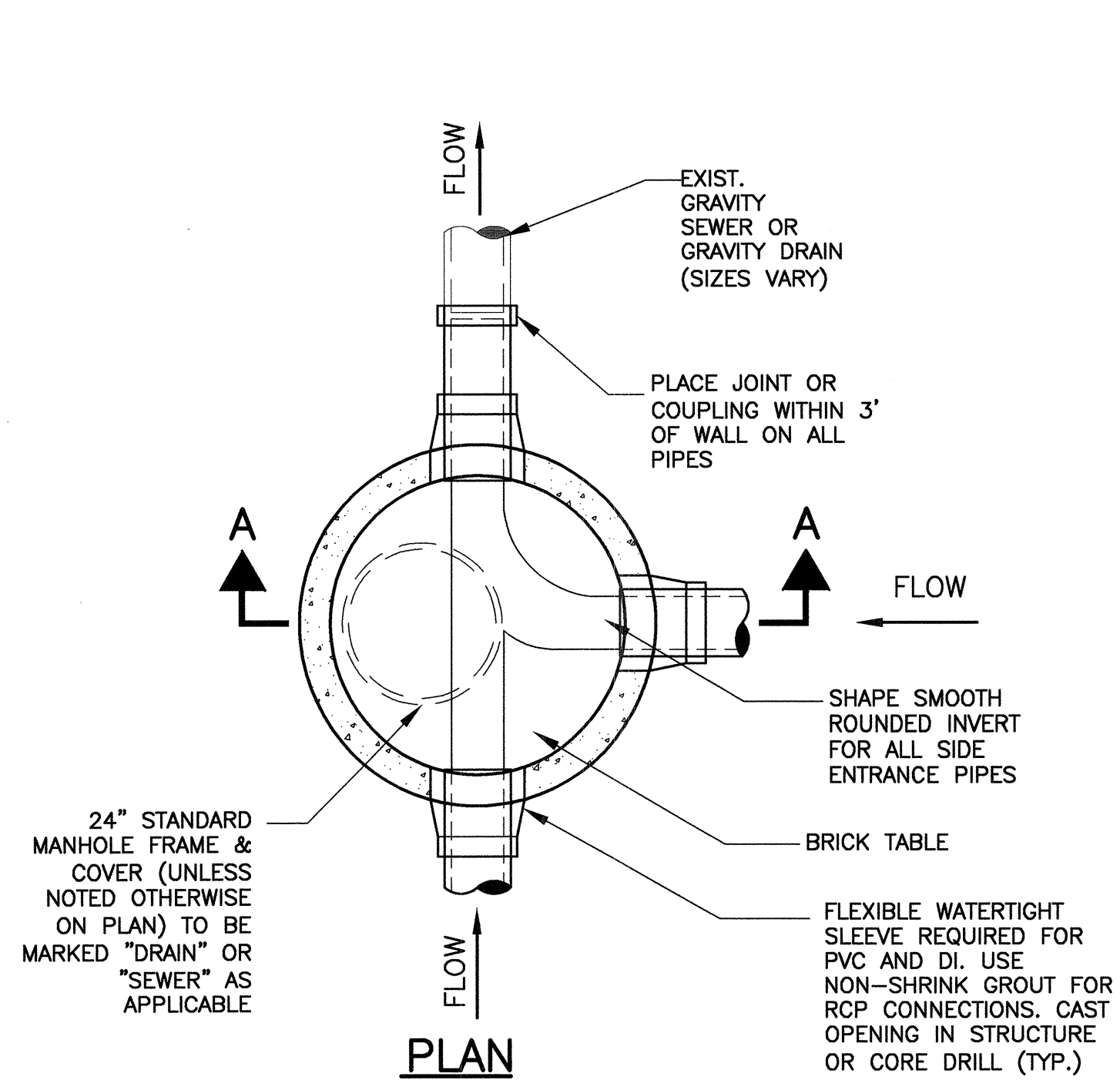


Scale	NOT TO SCALE			
Date	SEPTEMBER 2012			
Job No.	1010691			
Designed by	AMF			
Drawn by	ZSH			
Checked by	BFR	No.	Description	Date
Approved by	AMF		REVISIONS	



CITY OF CAMBRIDGE, MASSACHUSETTS	
HURON A SEWER SEPARATION PROJECT	
CONTRACT NO. 8A	
CIVIL GENERAL	
LEGEND, GENERAL NOTES & ABBREVIATIONS	

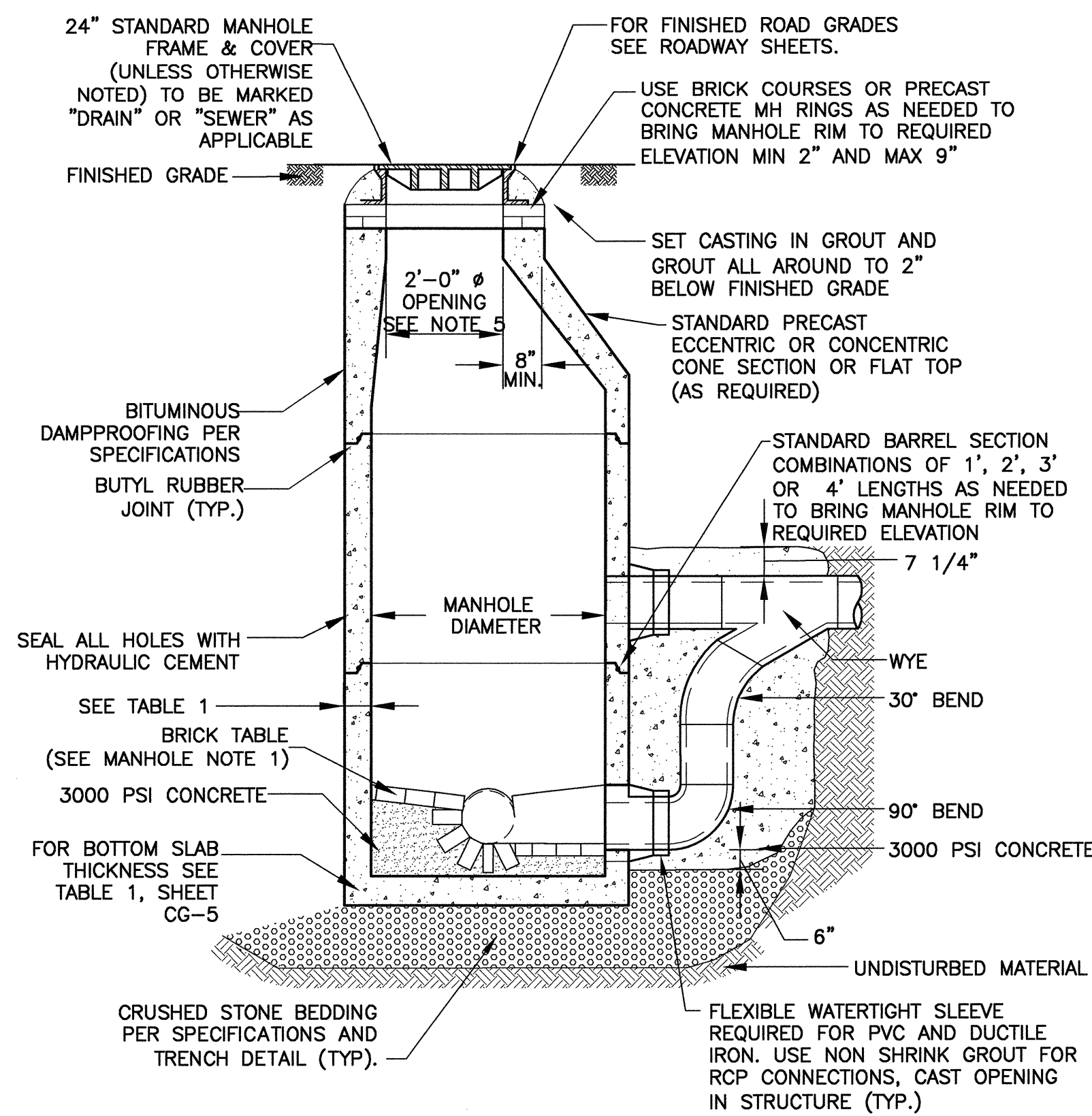
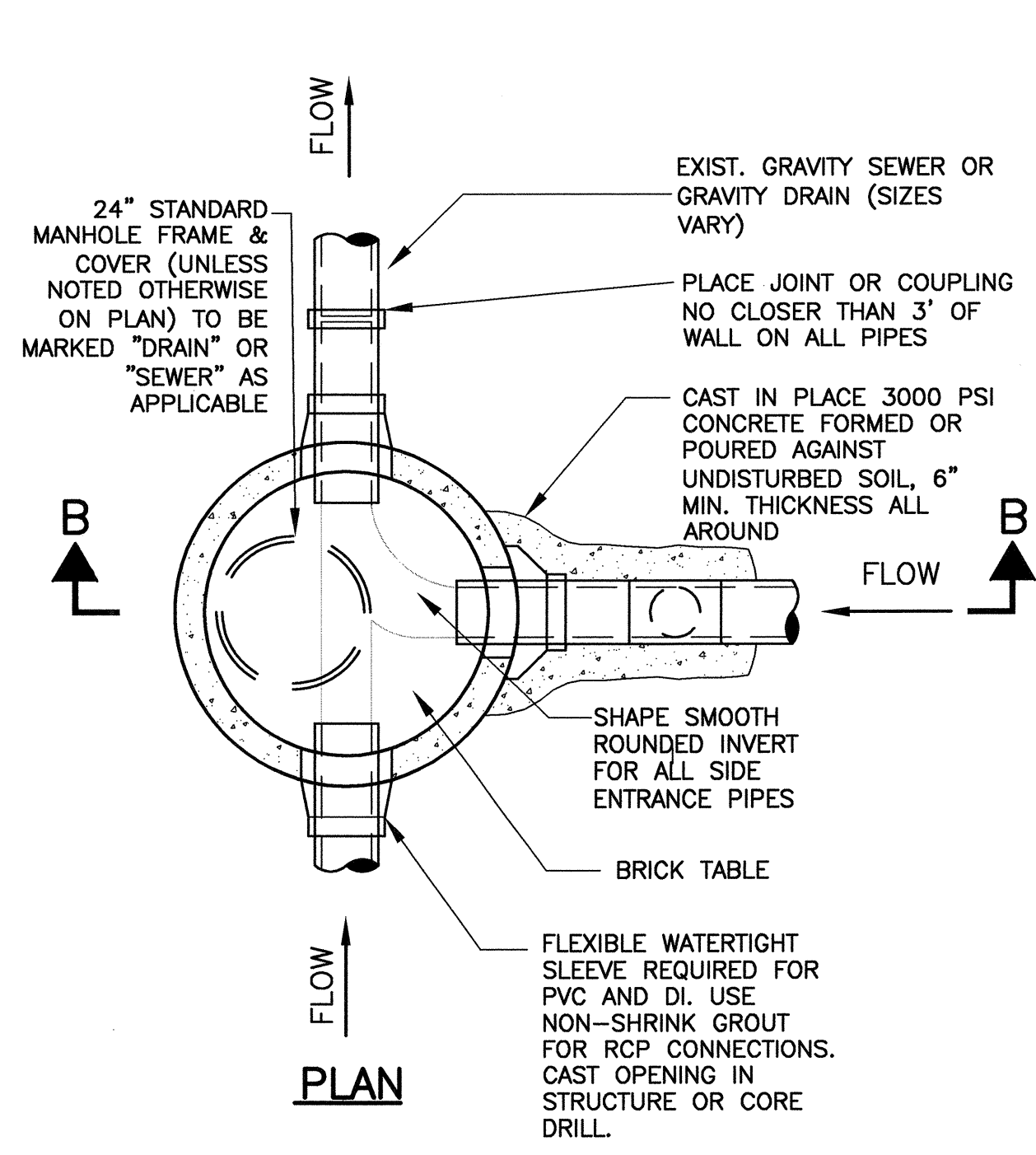
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SECTION "A-A"

MANHOLE DETAIL - TYPE 1/FIGURE 2252.2
(STANDARD MANHOLE)

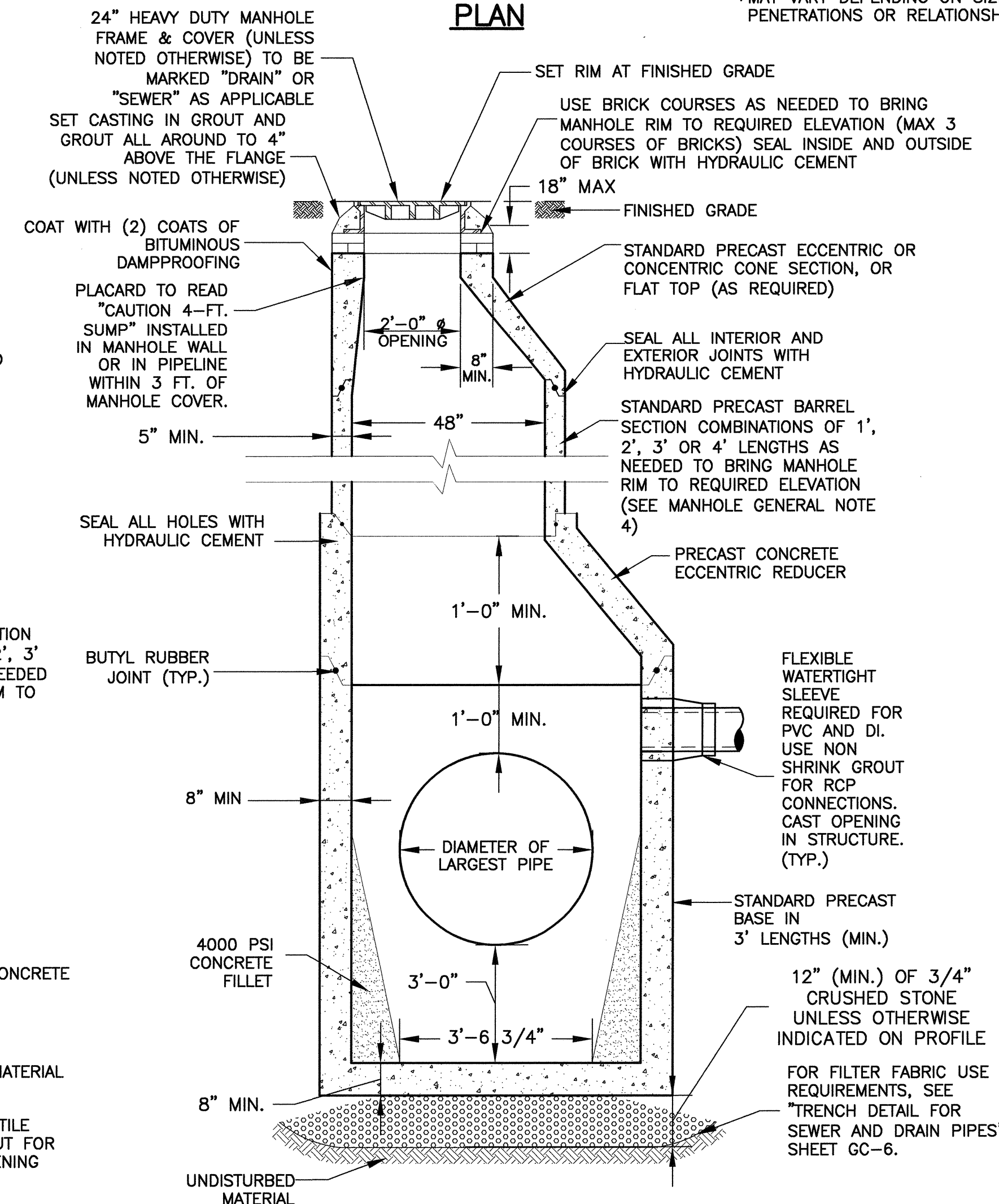
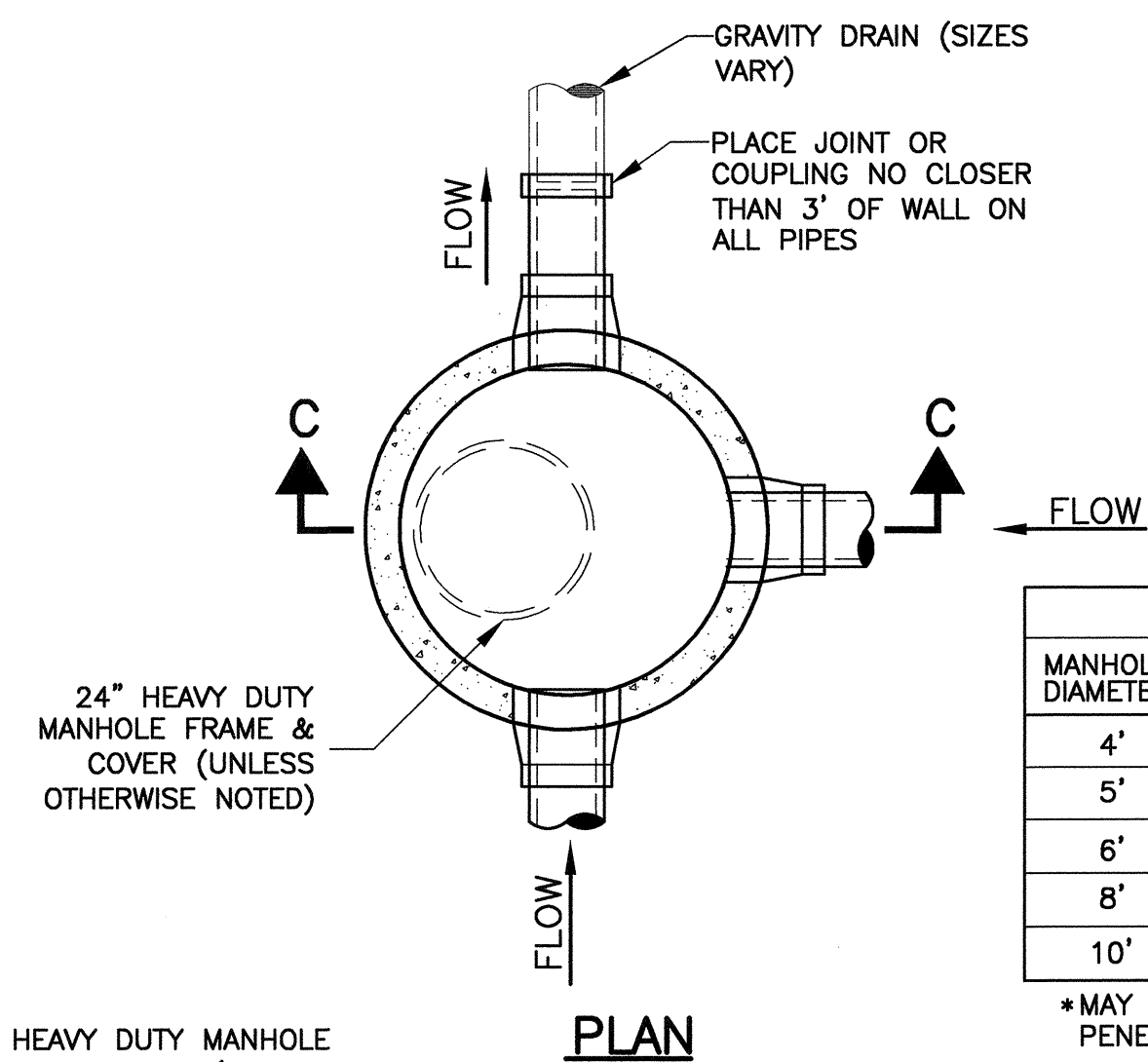
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SECTION "B-B"

MANHOLE DETAIL - TYPE 3/FIGURE 2252.4
(STANDARD MANHOLE WITH EXTERIOR DROP)

2



SECTION "C-C"

MANHOLE DETAIL - TYPE 4/FIGURE 2252.5
(SUMP MANHOLE)

3

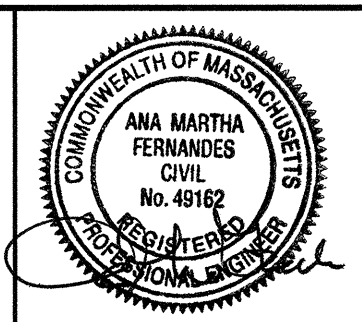
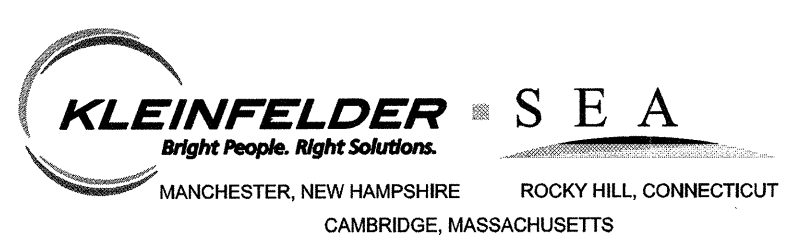
- MANHOLE NOTES:**
1. INNER EDGE OF BRICK TABLE TO BE AT ELEV. OF CROWN OF TOP OF PIPE. TABLE TO SLOPE AT 8.3% TO INSIDE OF MANHOLE BASE.
 2. SEWER OR DRAIN MANHOLE DIAMETER SHALL BE 4", 5", 6", OR 8" AS SHOWN ON PLAN/PROFILE VIEWS.
 3. DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H20 LOADINGS.
 4. FOR DESCRIPTION OF MATERIALS, SEE SPECIFICATIONS.
 5. OPENING IN TOP MANHOLE SECTION SHALL MATCH CASTING NOMINAL DIAMETER.

TABLE 1 : MANHOLE DIMENSIONS

MANHOLE DIAMETER	SIDE WALL MIN. THICKNESS	BOTTOM SLAB MIN. THICKNESS	MAX PIPE DIAMETER * RCP	MAX PIPE DIAMETER * DI/PVC
4'	5"	6"	24"	30"
5'	6"	8"	36"	42"
6'	6"	8"	48"	54"
8'	8"	8"	66"	72"
10'	10"	10"	72"	84"

*MAY VARY DEPENDING ON SIZE AND LOCATION OF ADDITIONAL PENETRATIONS OR RELATIONSHIP OF PENETRATIONS IN MANHOLE

CONFORMED SET

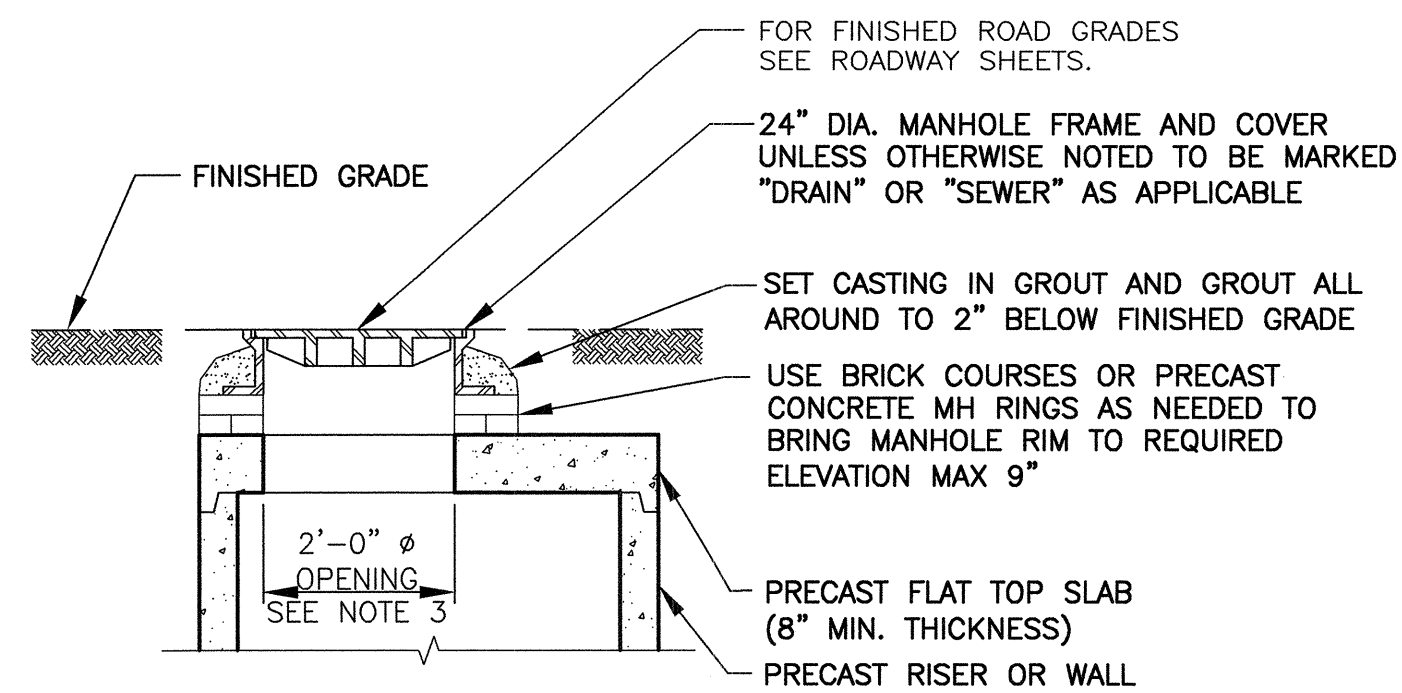


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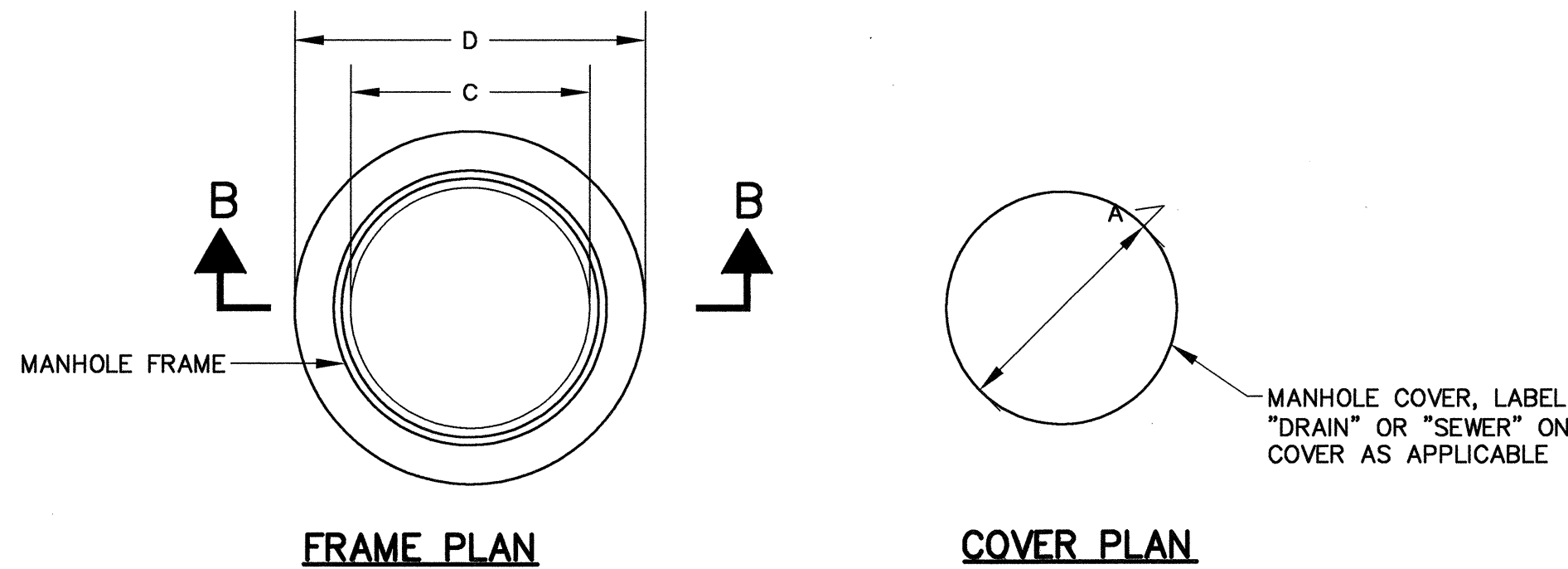
CITY OF CAMBRIDGE, MASSACHUSETTS
HURON A SEWER SEPARATION PROJECT
CONTRACT NO. 8A
CIVIL GENERAL
MANHOLE DETAILS I

Sheet No. CG-2
File No.



SECTION
TYPICAL FLAT TOP MANHOLE 4

FLAT TOP MANHOLE NOTES:
 1. DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H20 LOADINGS.
 2. FOR DESCRIPTION OF MATERIALS, SEE SPECIFICATIONS.
 3. OPENING IN TOP MANHOLE SECTION SHALL MATCH CASTING NOMINAL DIAMETER



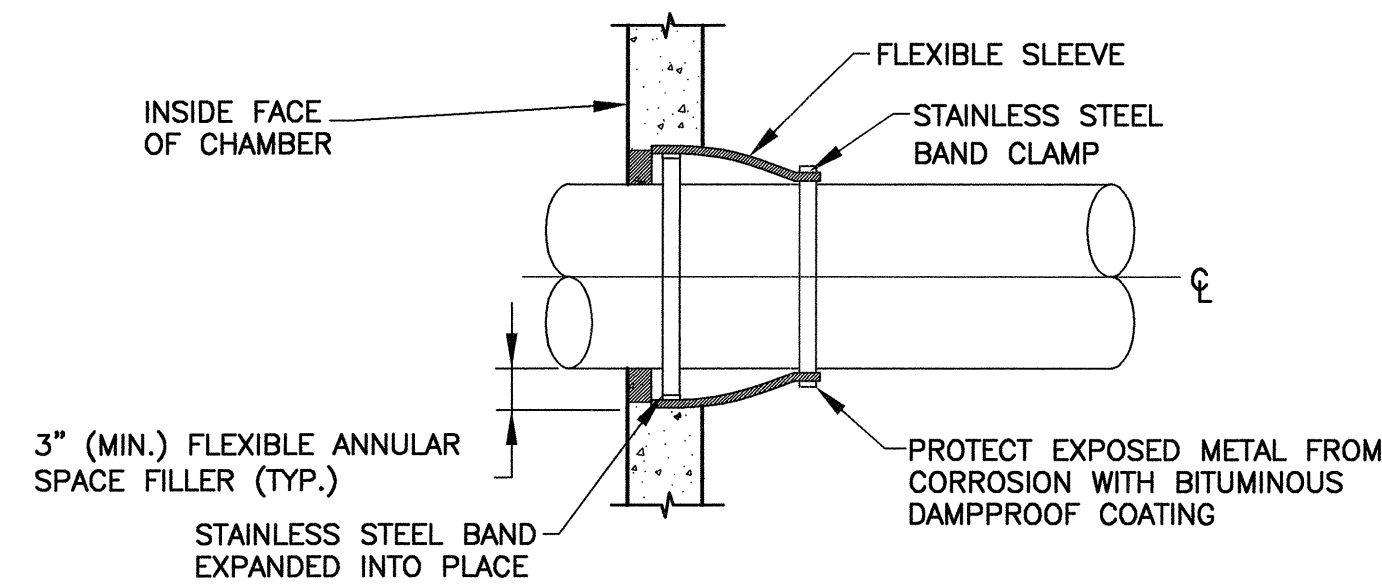
MH FRAME AND COVER DIMENSIONAL RANGE TABLE

SIZE	24" NOMINAL	30" NOMINAL	30" NOMINAL- LOW PROFILE	30" NOMINAL- BOLT DOWN COVER
A	26"	31 3/4" - 32 1/4"	32 - 34"	32 - 33 3/4"
B	1 1/8" - 1 1/2"	1 1/4" - 1 3/4"	1 3/8" - 2 1/2"	1 1/2" - 1 3/4"
C	23 7/8" - 24"	30"	30 - 30 1/2"	28 1/4" - 30"
D	34 1/8" - 38"	38 - 44"	36 - 41"	40 - 46"
E	8 - 8 1/8"	6 - 8"	4"	7 - 8"

SECTION B-B

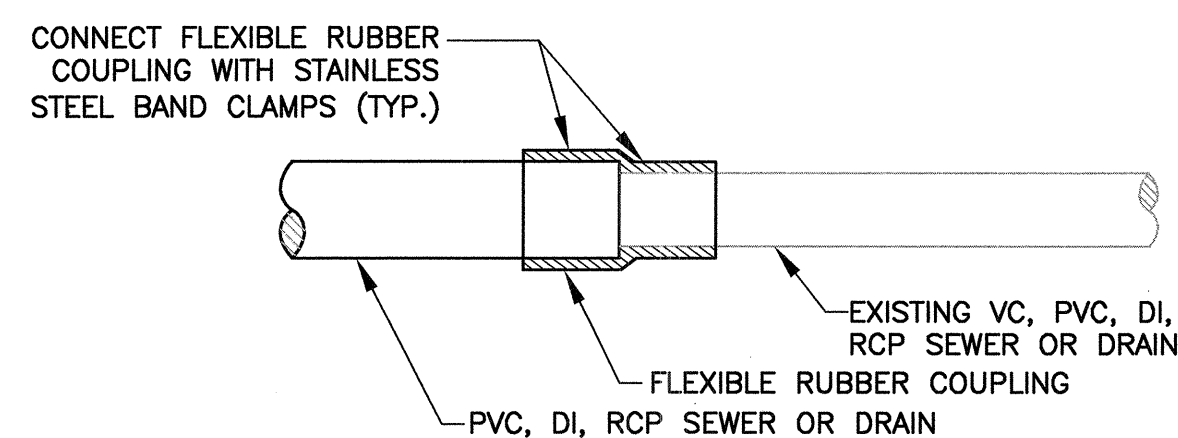
MANHOLE FRAME AND COVER NOTES:
 1. DESIGN FRAME AND COVER FOR AASHTO H20 LOADINGS.
 2. FOR DESCRIPTION OF MATERIALS, SEE SPECIFICATIONS.

DPW MANHOLE FRAME AND COVER DETAIL 5



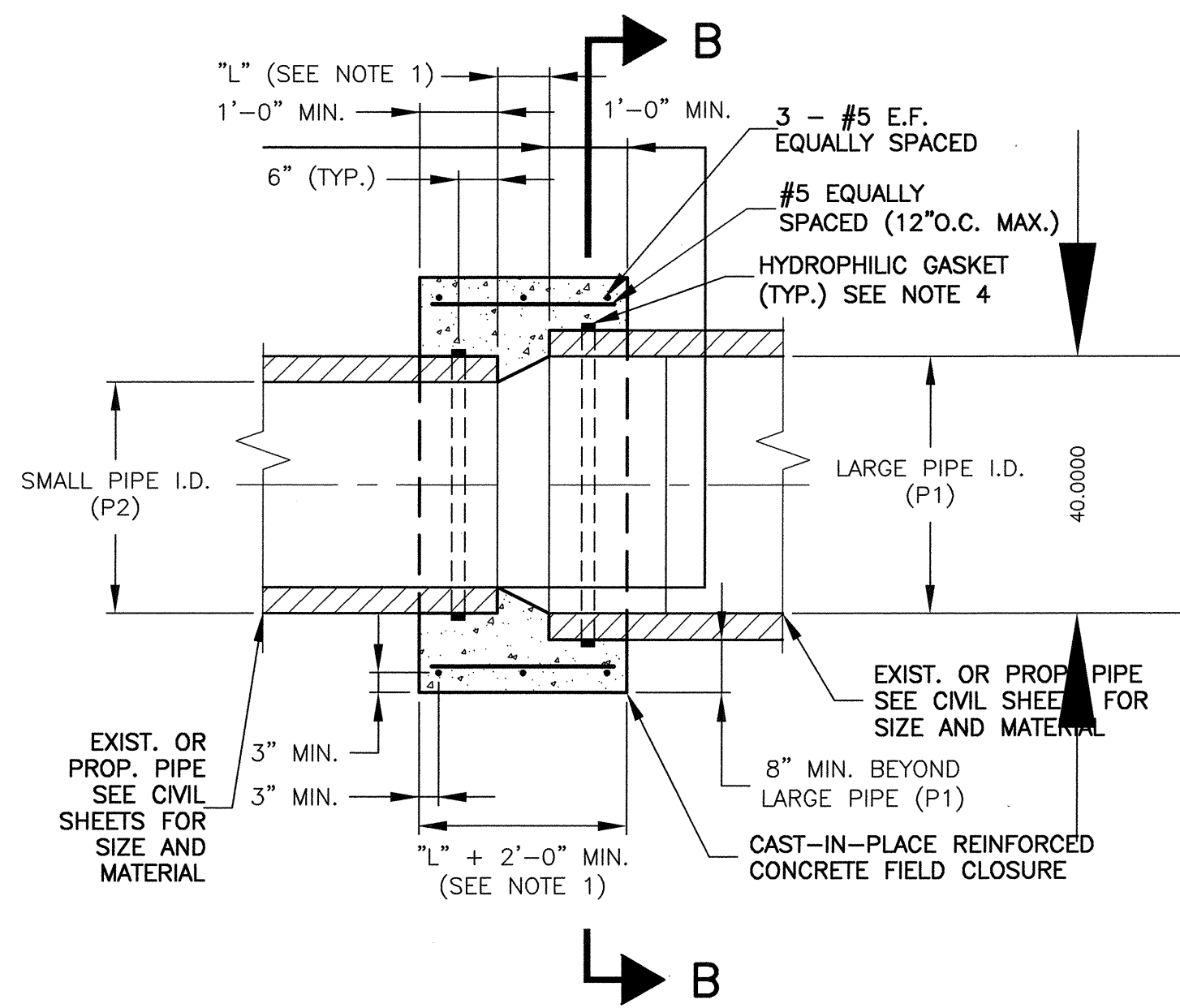
FLEXIBLE SLEEVE CONNECTION DETAIL 6

FLEXIBLE SLEEVE CONNECTION NOTES:
 1. PRECAST OPENING OR CORE DRILLED INTO EXISTING STRUCTURE. SIZE VARIES TO ACCOMMODATE EXTENSION BONNET FLANGE DIAMETER OR PIPE.

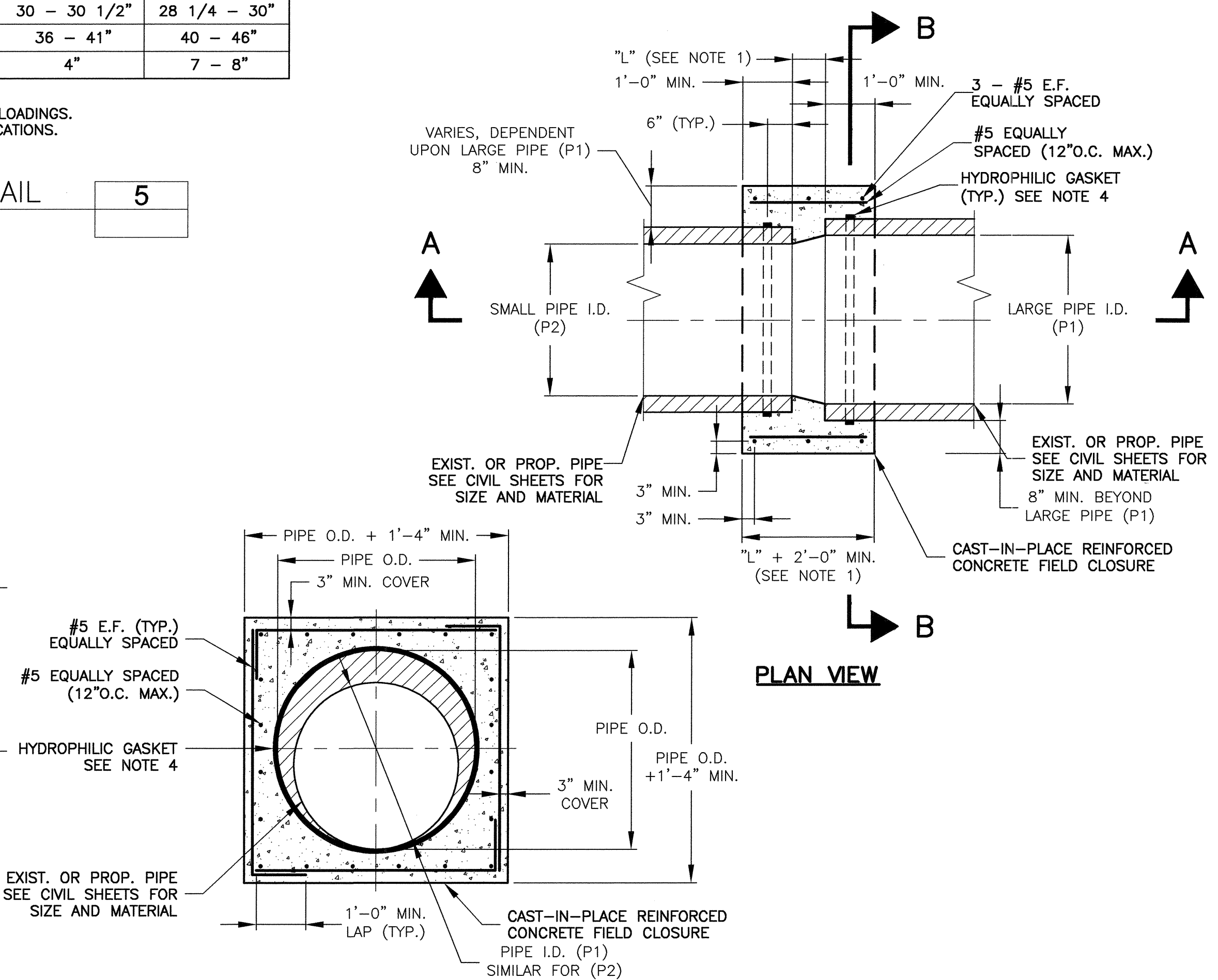


NOTES:
 1. FOR GRAVITY LATERAL PIPES (SEWERS OR DRAINS), SEE SPECIFICATIONS FOR MATERIALS AND REQUIREMENTS.

PIPE FIELD CLOSURE (FLEXIBLE RUBBER)
TYPE 2 DETAIL 7
(FOR NON-PRESSURE PIPES OF DIFFERENT MATERIALS OR SIZES)



SECTION A-A

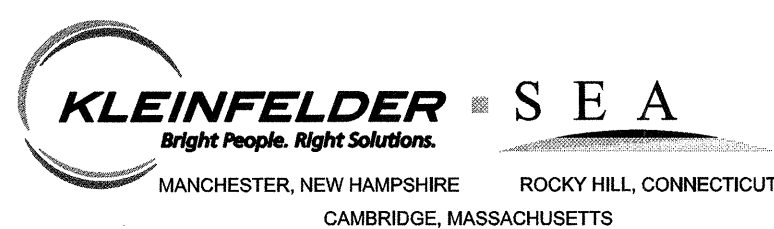


SECTION B-B (P1=48" MAX.)

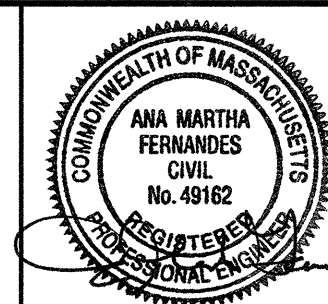
PIPE FIELD CLOSURE (CAST-IN-PLACE)
TYPE 1 DETAIL 8
(FOR NON-PRESSURE PIPES OF DIFFERENT MATERIALS OR SIZES)

PIPE FIELD CLOSURE NOTES (DETAILS 6 & 7):
 1. SPACING BETWEEN PIPES (L) DEPENDS ON PIPE SIZES, FOR PIPES OF THE SAME SIZE USE 4". THE DISTANCE "L" EQUALS THE LARGE PIPE I.D. MINUS THE SMALL PIPE I.D. TIMES TWO [L=(P1-P2)x2].
 2. PROPOSED PIPE INVERT SHALL MATCH EXISTING PIPE INVERT UNLESS OTHERWISE SHOWN ON CIVIL SHEETS.
 3. SAND BLAST EXISTING PIPE PERIMETER AND APPLY BONDING AGENT PRIOR TO CONCRETE ENCASEMENT.
 4. INSTALL HYDROPHILIC (WATER STOP) GASKET ALONG PIPE PERIMETER FOR EACH PIPE AS SPECIFIED.
 5. CONCRETE AND REBAR REQUIREMENTS SHALL CONFORM TO STRUCTURAL DESIGN DRAWINGS AND SPECIFICATIONS.
 6. LOCATION OF FIELD CLOSURE SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.
 7. MAINTAIN 2" COVER BETWEEN PIPE AND ALL REINFORCING AND AT ALL CONCRETE SURFACES UNLESS OTHERWISE NOTED.

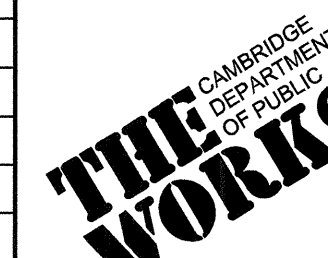
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CITY OF CAMBRIDGE, MASSACHUSETTS

HURON A SEWER SEPARATION PROJECT

CONTRACT NO. 8A

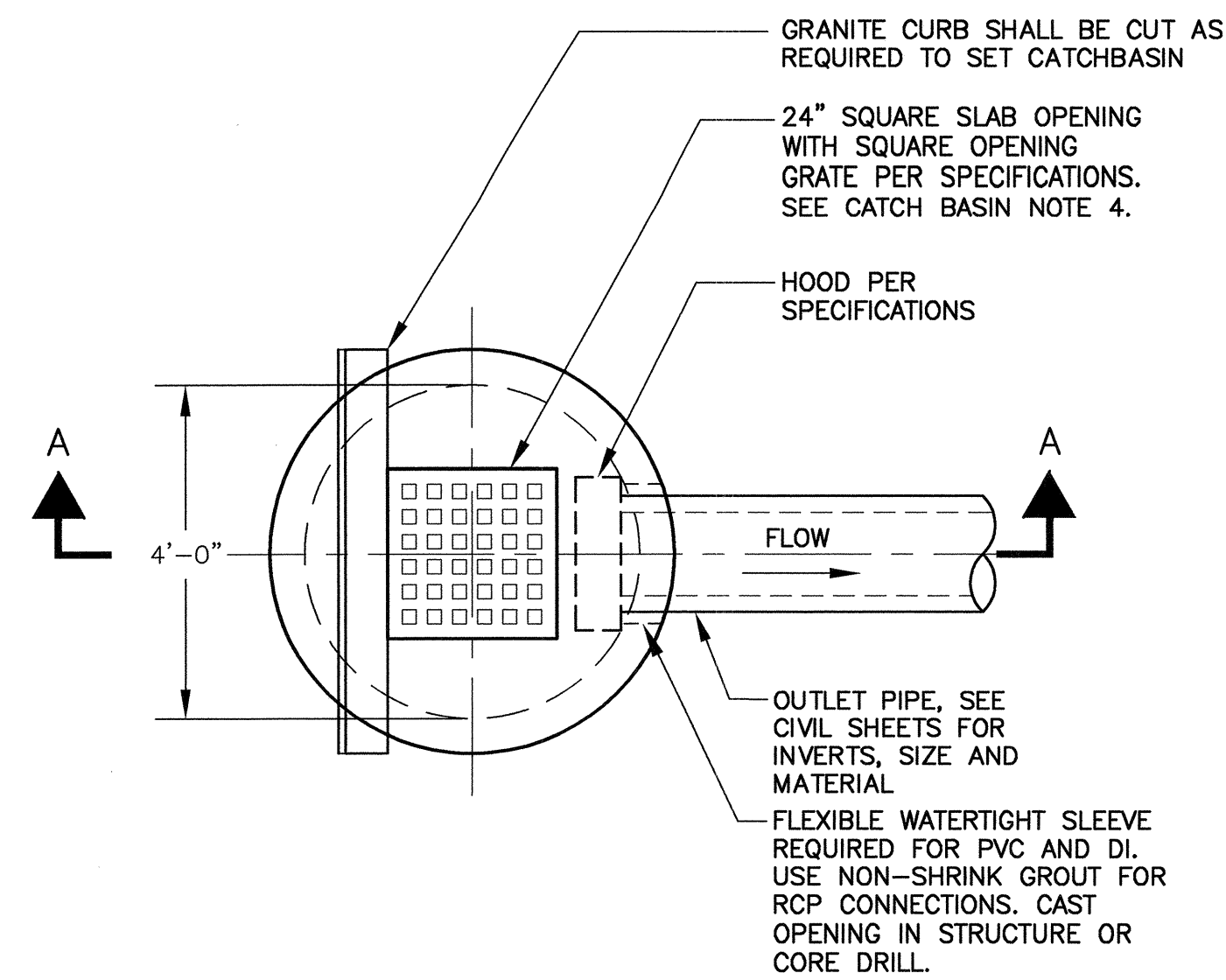
CIVIL GENERAL

MANHOLE DETAILS II AND PIPE CONNECTION DETAILS

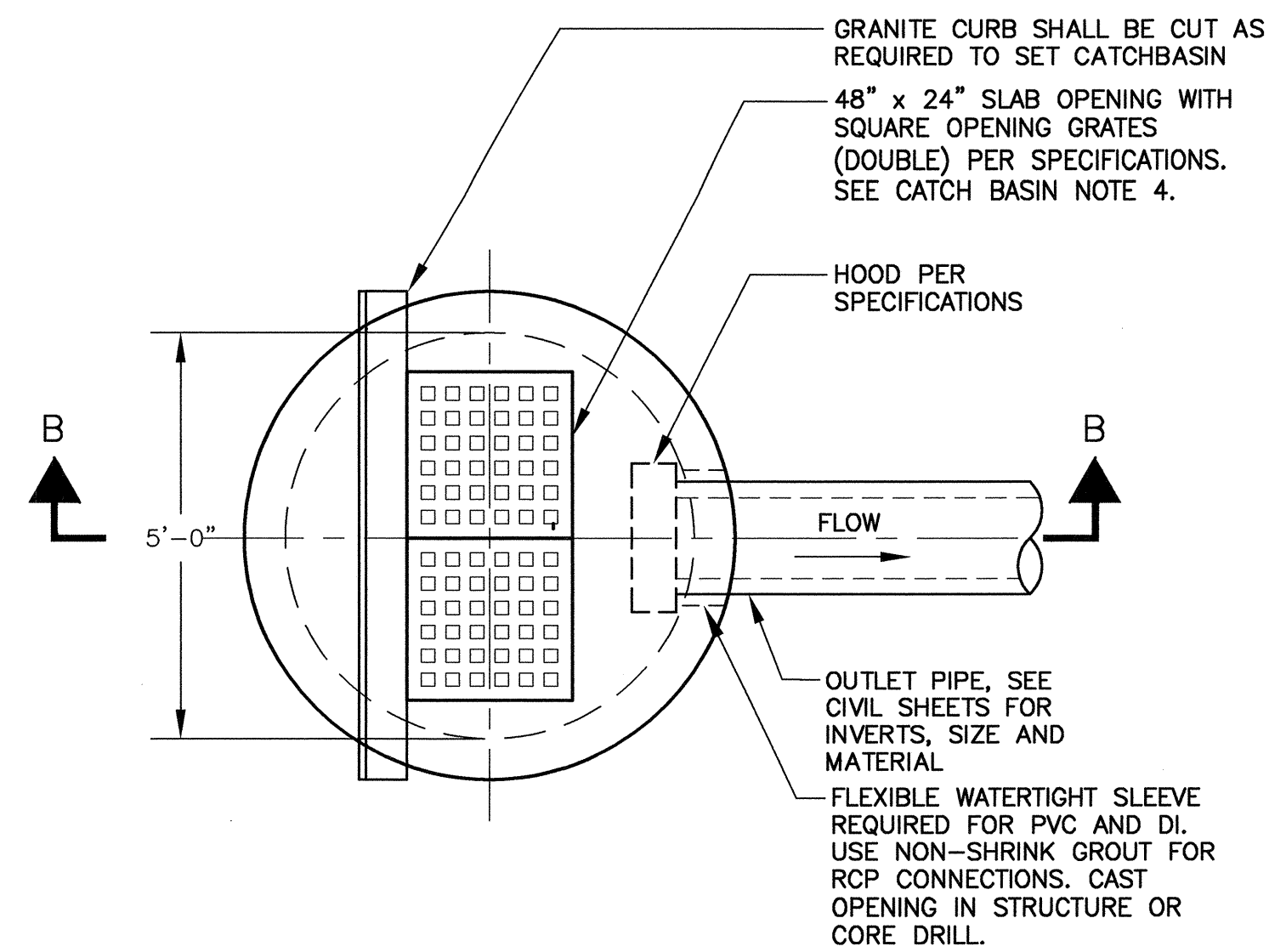
Sheet No.

CG-3

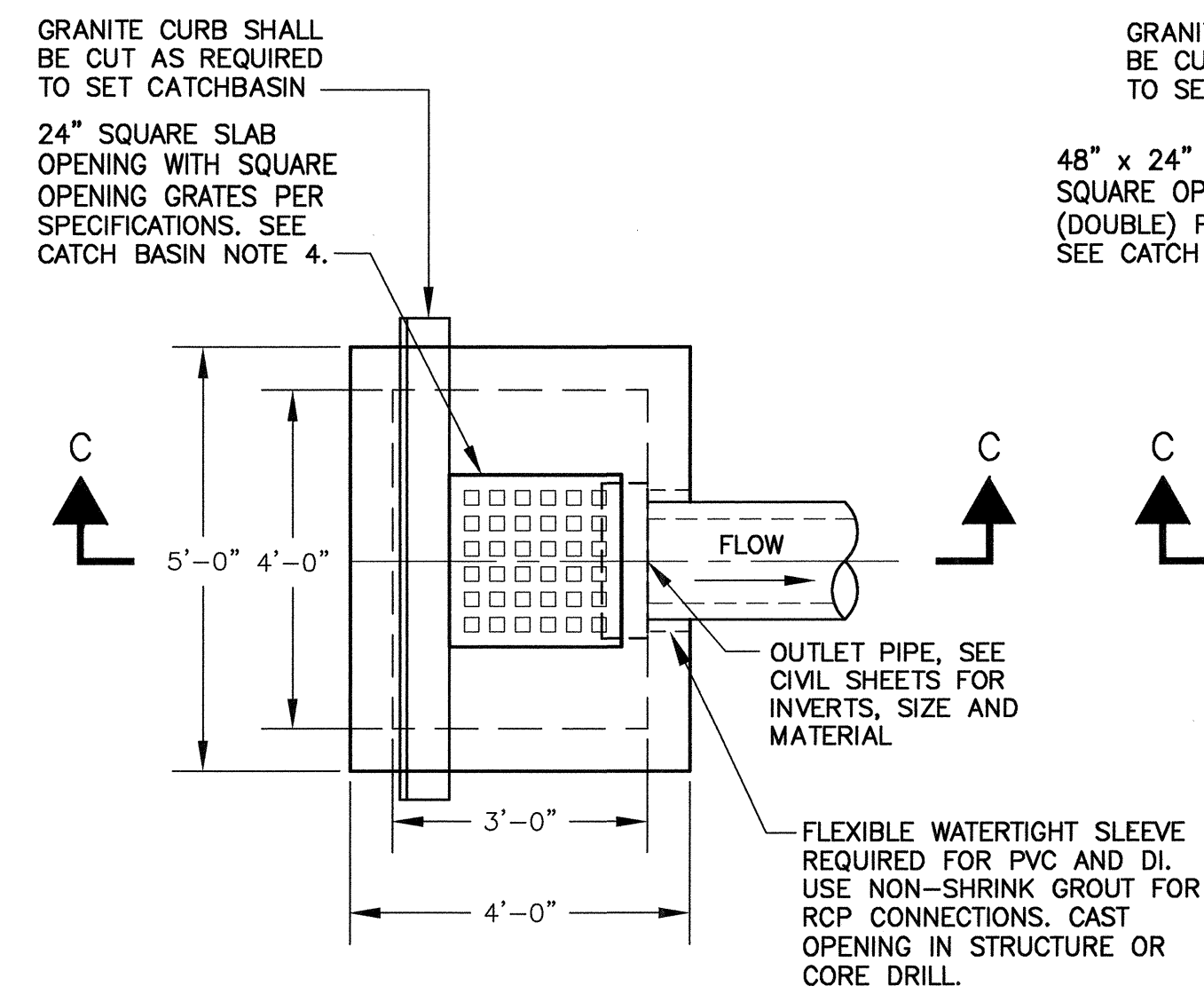
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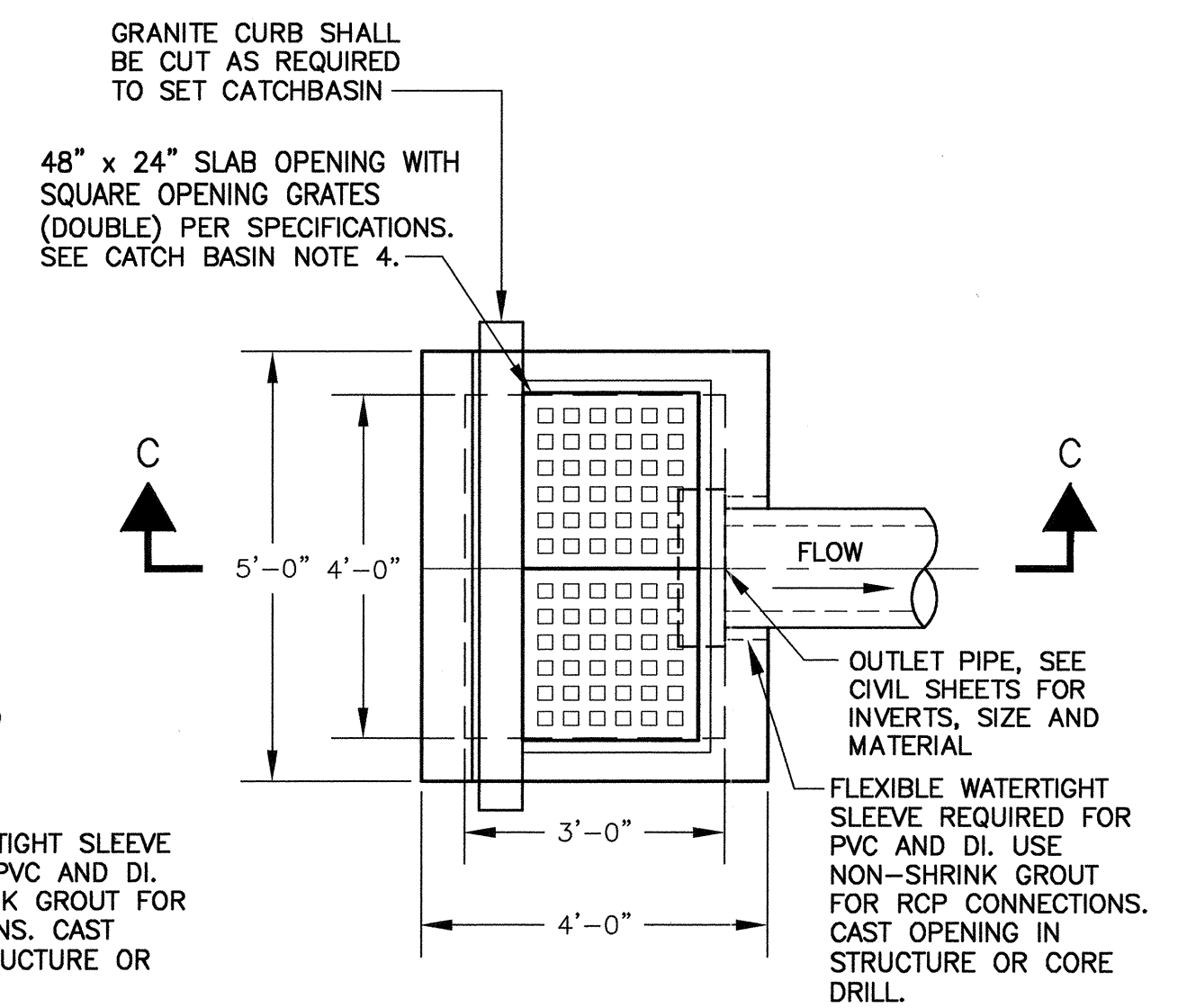
PLAN TYPE-1 (SINGLE GRATE)



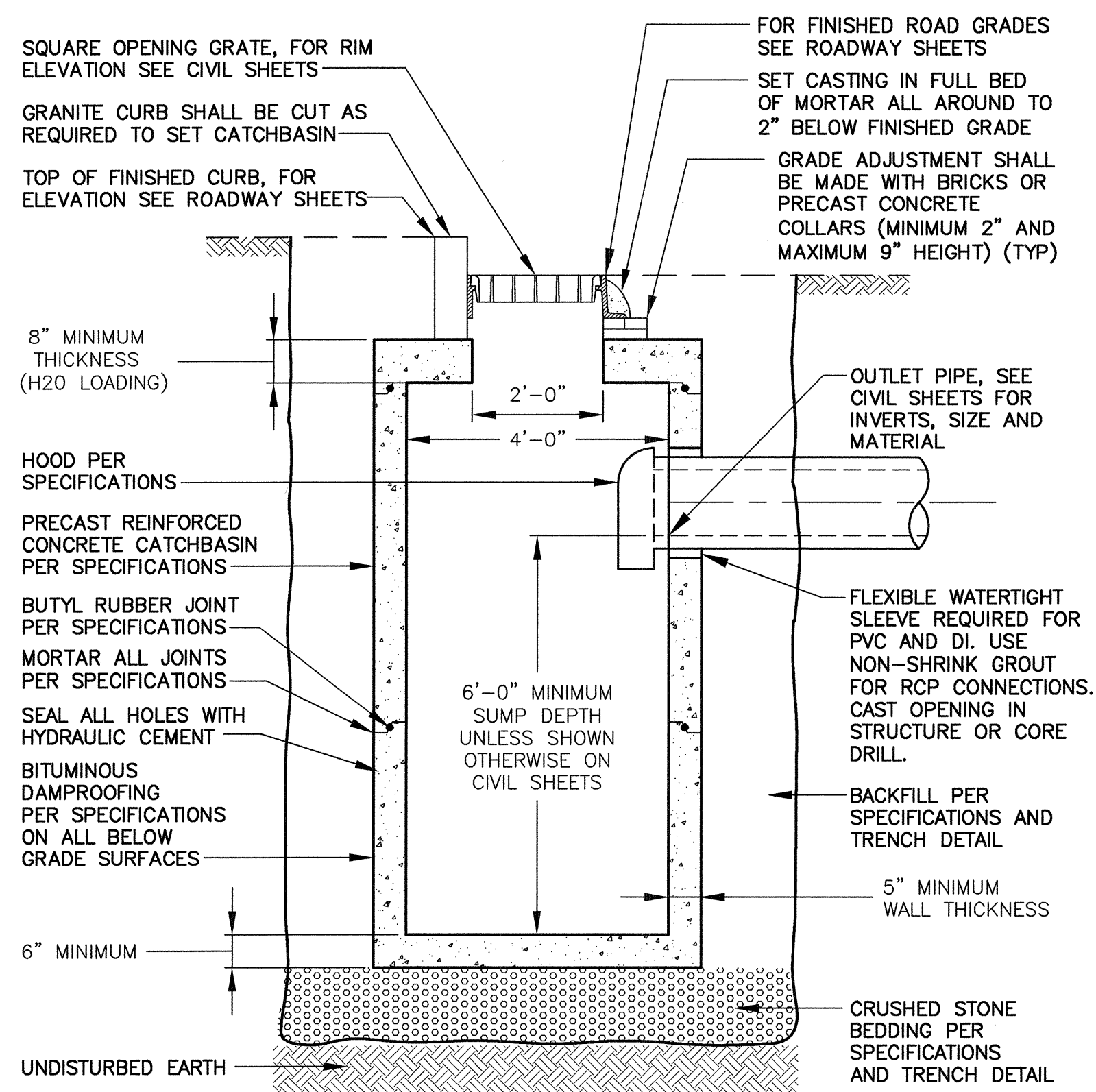
PLAN TYPE-2 (DOUBLE GRATE)



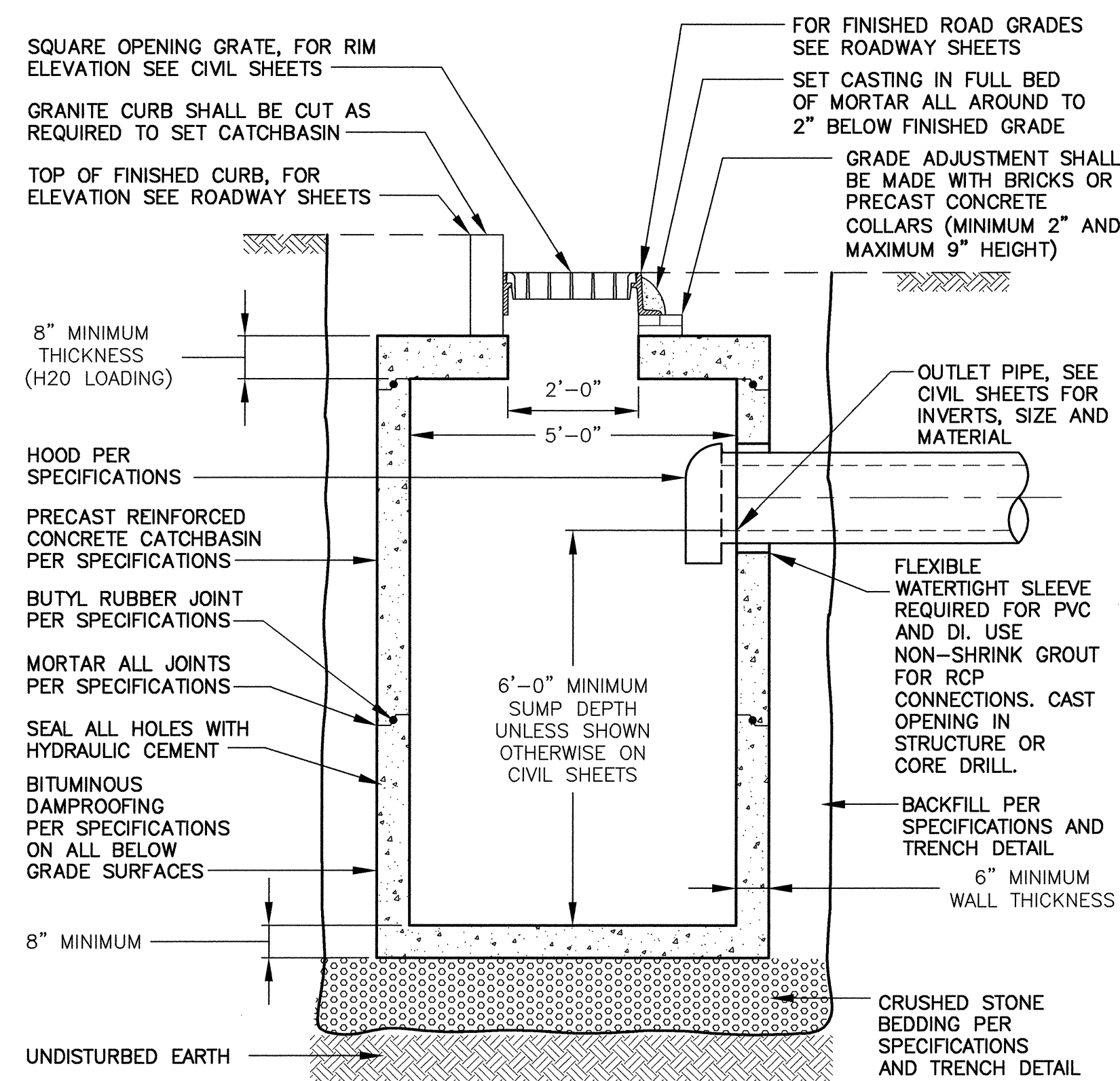
PLAN TYPE-3 (SINGLE GRATE)



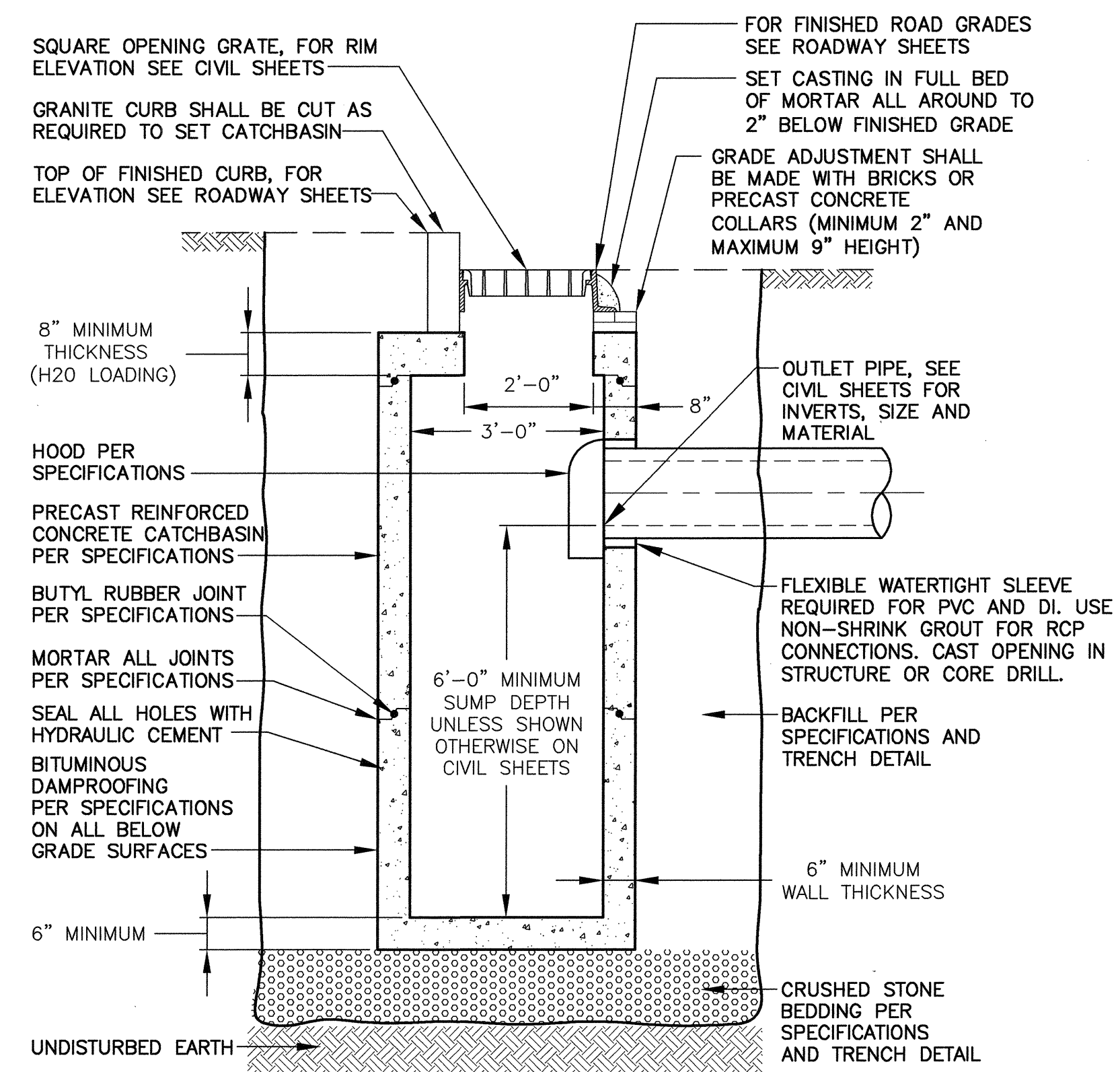
PLAN TYPE-4 (DOUBLE GRATE)



SECTION A-A TYPE-1



SECTION B-B TYPE-2



SECTION C-C TYPE-3 AND TYPE-4

- GENERAL CATCH BASIN NOTES:**
- FACE OF PIPE SHALL NOT PROJECT MORE THAN 4-INCHES FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
 - FOR DESCRIPTION OF MATERIALS AND CONSTRUCTION METHOD, SEE SPECIFICATIONS.
 - DESIGN PRECAST SECTIONS WITH FRAME AND GRATE FOR AASHTO H20 LOADING.
 - GRATE OPENING CAN BE CENTERED OR OFFSET PERPENDICULAR TO THE CURB.
 - FOR CATCH BASINS INSTALLED ABUTTING GRANITE CURBS, SELECT 3-FLANGED FRAMES. DON'T DUMP CURB MARKERS SHALL BE INSTALLED ON ALL CATCH BASINS IN THE PROJECT AREA. SEE SPECIFICATION SECTION 02604 AND DETAIL ON SHEET CG-5.

CATCH BASIN-TYPE 1/FIGURE 2604.2
(WITH SQUARE OPENING GRATE-SINGLE)

9

CATCH BASIN-TYPE 2/FIGURE 2604.3
(WITH SQUARE OPENING GRATES-DOUBLE)

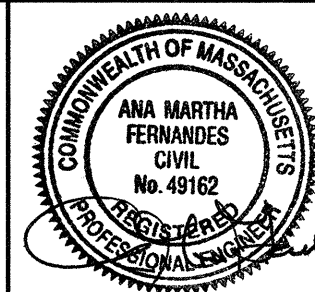
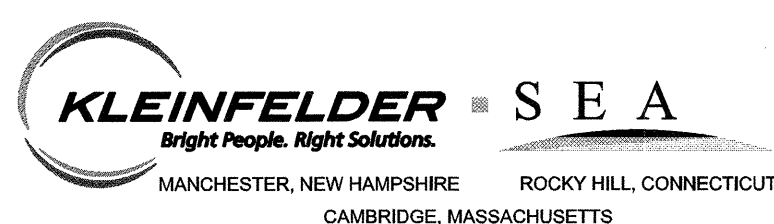
10

CATCH BASIN-TYPE 3/FIGURE 2604.3
CATCH BASIN-TYPE 4/FIGURE 2604.4

(TYPE 3/FIGURE 2604.4 WITH SINGLE SQUARE OPENING GRATE
TYPE 4/FIGURE 2604.4 WITH DOUBLE SQUARE OPENING GRATES)

11

CONFORMED SET



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HURON A SEWER SEPARATION PROJECT
CONTRACT NO. 8A
CIVIL GENERAL
CATCH BASIN DETAILS I

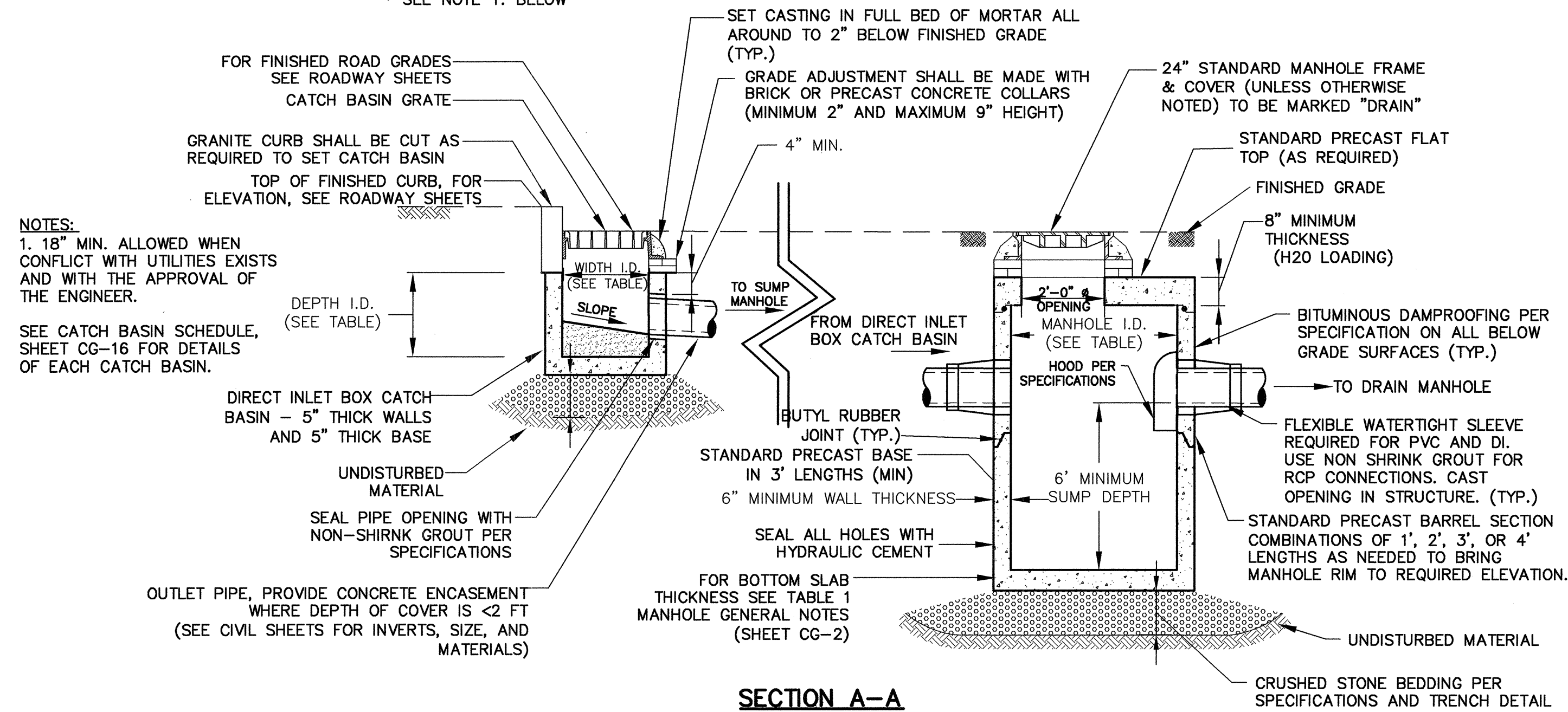
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CG-4

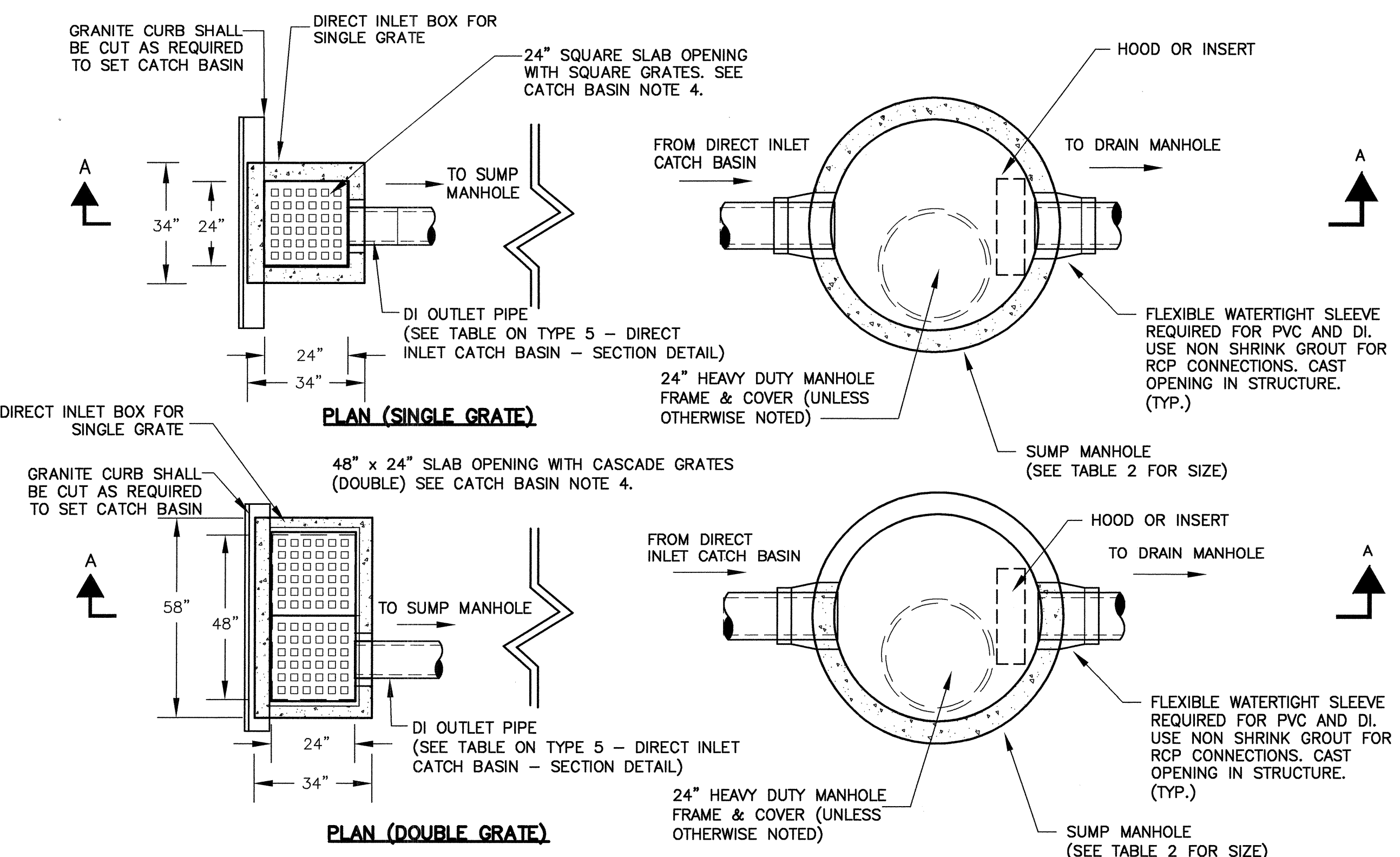
File No.

	PRECAST DIRECT INLET BOX			OUTLET PIPE	SUMP MANHOLE
	WIDTH (I.D.)	LENGTH (I.D.)	DEPTH (I.D.)	Ø (I.D.)	Ø (I.D.)
SINGLE GRATE	24"	24"	24"	12"	4'
DOUBLE GRATE	24"	48"	24"	15"	5'

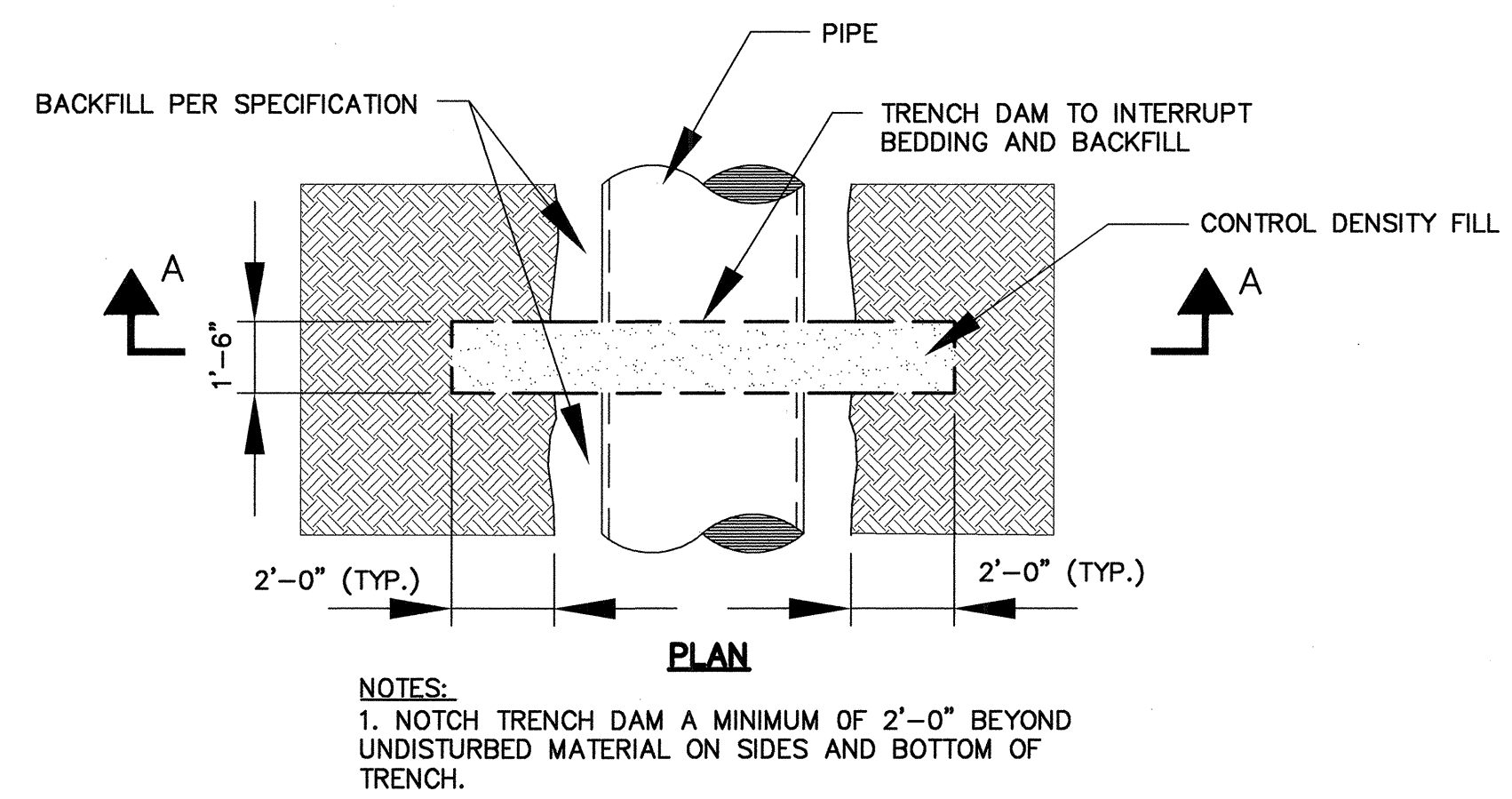
I.D. = INSIDE DIMENSION
* SEE NOTE 1. BELOW



NOTES:
1. 18" MIN. ALLOWED WHEN CONFLICT WITH UTILITIES EXISTS AND WITH THE APPROVAL OF THE ENGINEER.
SEE CATCH BASIN SCHEDULE, SHEET CG-16 FOR DETAILS OF EACH CATCH BASIN.

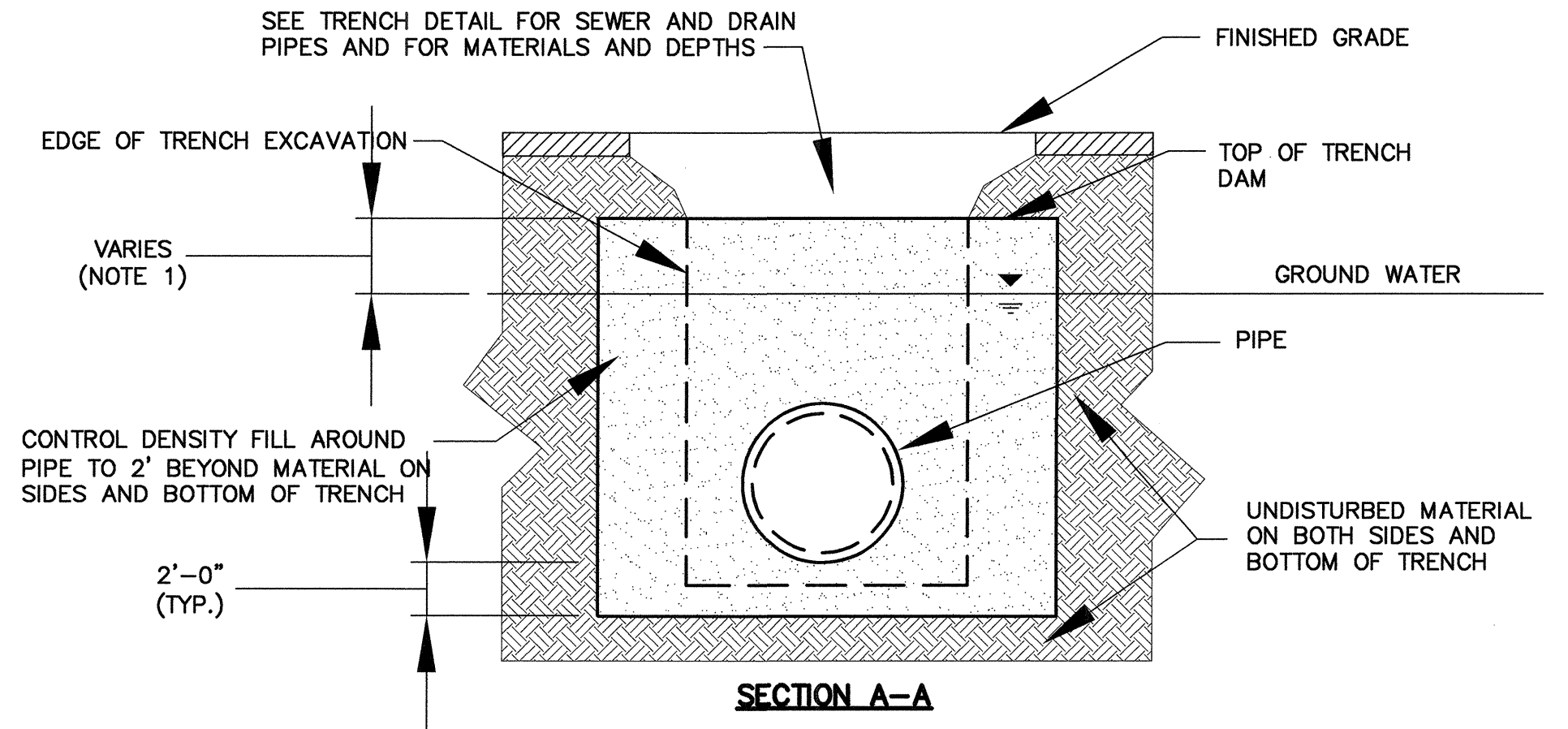


CATCH BASIN-TYPE 5/FIGURE 2604.5 (DROP INLET WITH DOUBLE OR SINGLE GRATE) 12

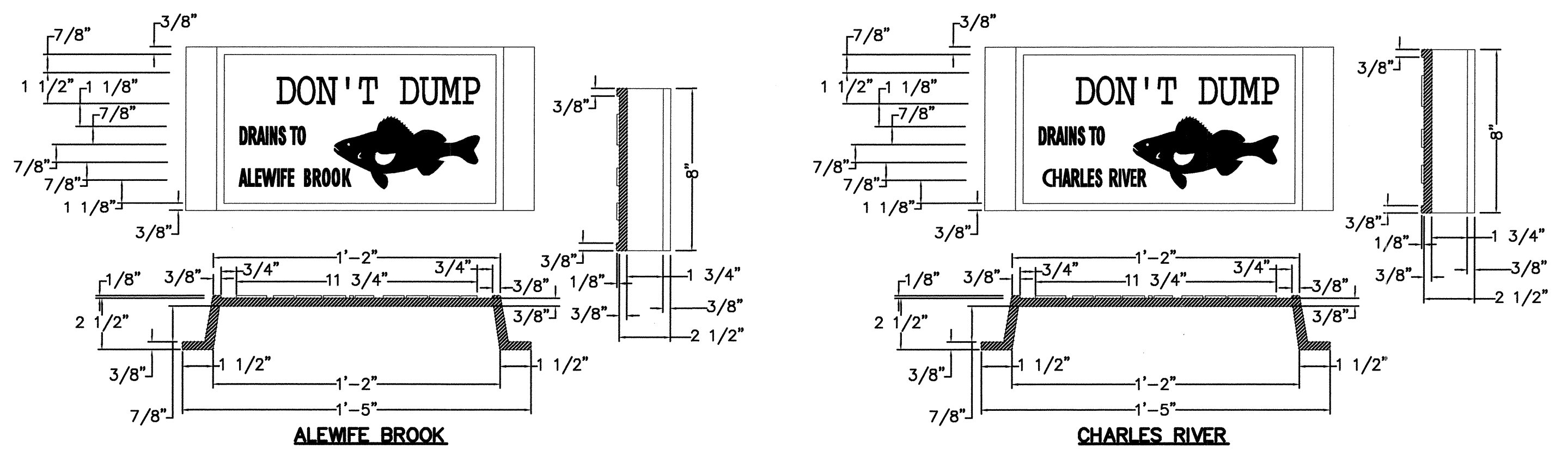


NOTES:
1. NOTCH TRENCH DAM A MINIMUM OF 2'-0" BEYOND UNDISTURBED MATERIAL ON SIDES AND BOTTOM OF TRENCH.

NOTES:
1. THE TOP OF THE TRENCH DAM SHALL BE EXTENDED A MINIMUM OF 2'-0" ABOVE THE GROUND WATER LEVEL, AS DETERMINED BY THE NEAREST BORING OR BY THE ENGINEER.
2. TRENCH DAMS SHALL BE INSTALLED BETWEEN MANHOLES AND AT 300 FOOT INTERVALS ALONG PROPOSED PIPING, OR AS DIRECTED BY THE OWNER.
3. NOTCH TRENCH DAM A MINIMUM OF 2'-0" BEYOND UNDISTURBED MATERIAL ON SIDES AND BOTTOM OF TRENCH.
4. FOR DI PIPE, PROVIDE POLYETHYLENE PIPE ENCASEMENT PER SPEC 02630 AND CDF WITH NON-FLY ASH MIX DESIGN.

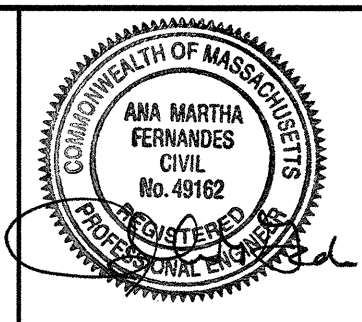


TRENCH DAM DETAIL 13



CATCH BASIN CURB MARKER NOTES:
1. SEE CATCH BASIN SCHEDULE SHEET CG-16 FOR INDICATION OF WHICH CURB MARKERS EACH CATCH BASIN REQUIRES.

CATCH BASIN DON'T DUMP CURB MARKER 14

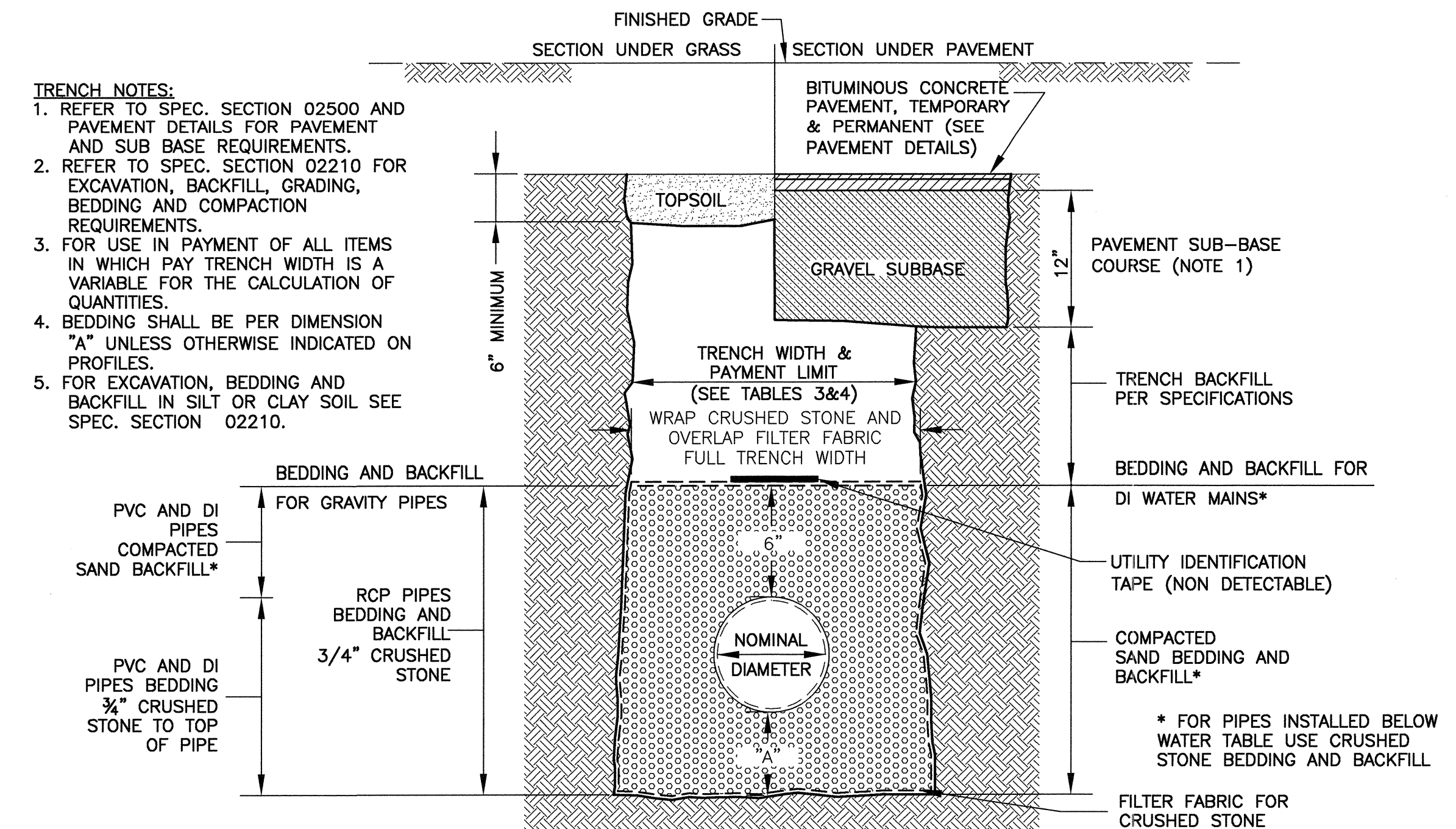
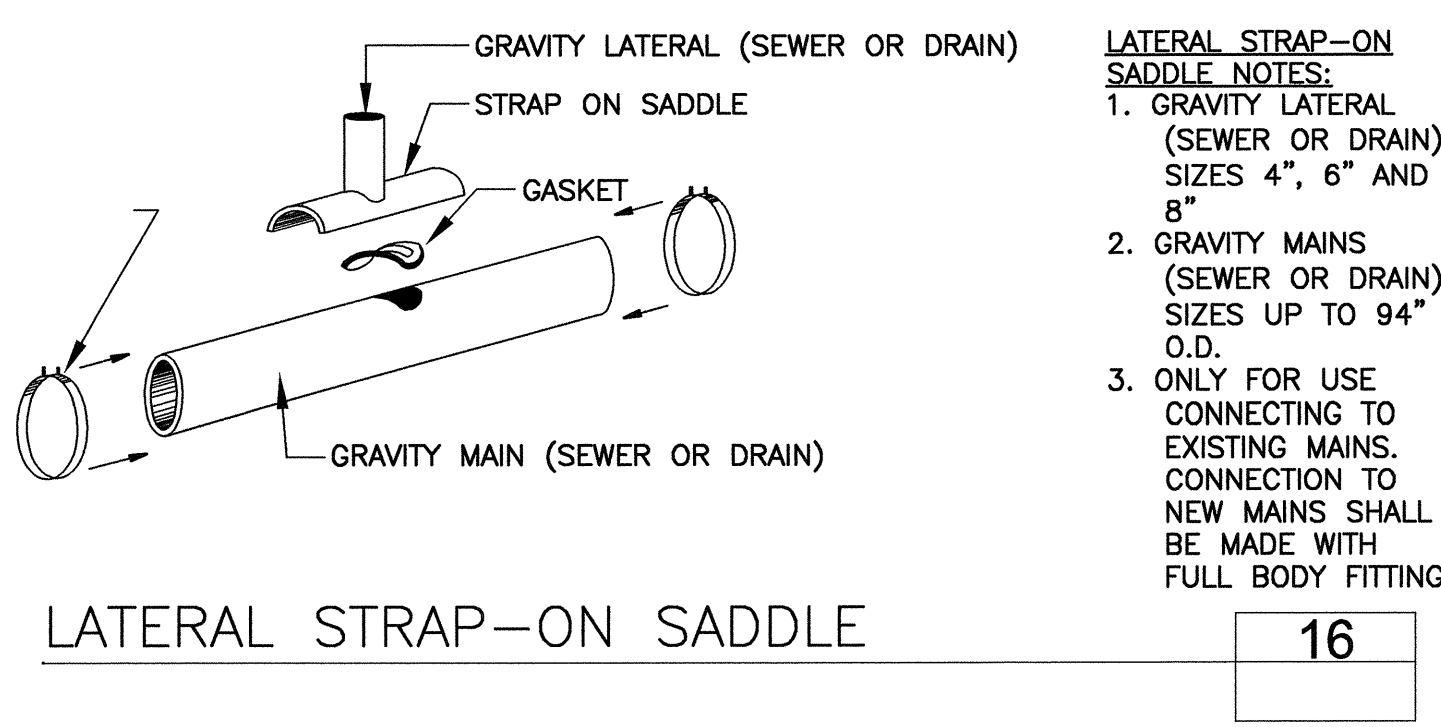
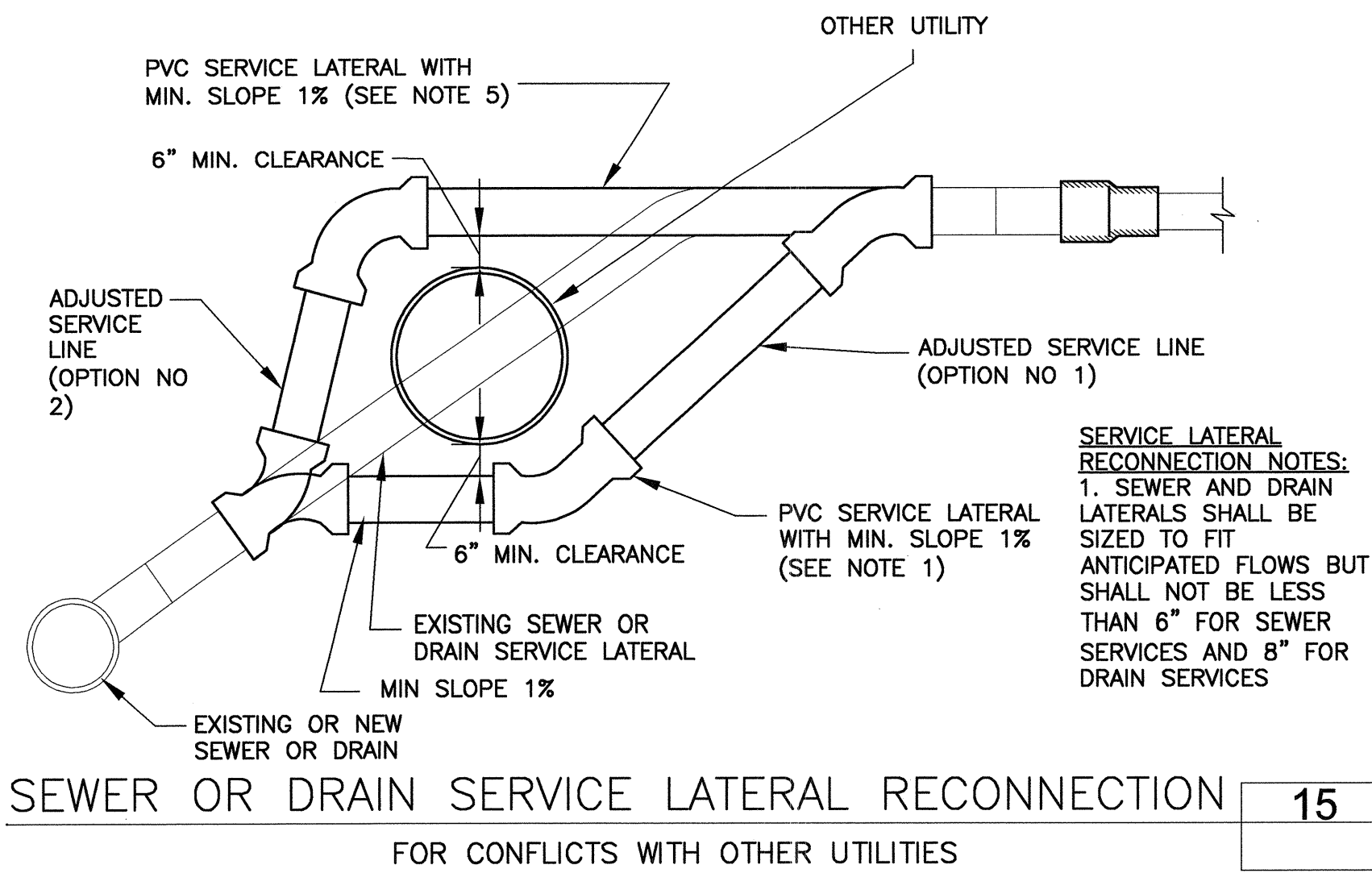


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CITY OF CAMBRIDGE, MASSACHUSETTS	Sheet No.
HURON A SEWER SEPARATION PROJECT	CG-5
CONTRACT NO. 8A	File No.
CIVIL GENERAL	
CATCH BASIN DETAILS II & TRENCH DETAILS	

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TRENCH NOTES:

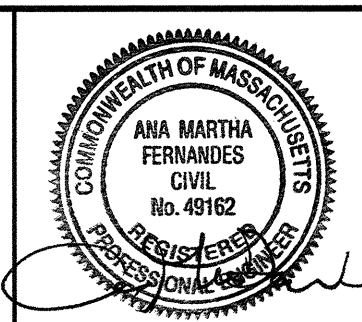
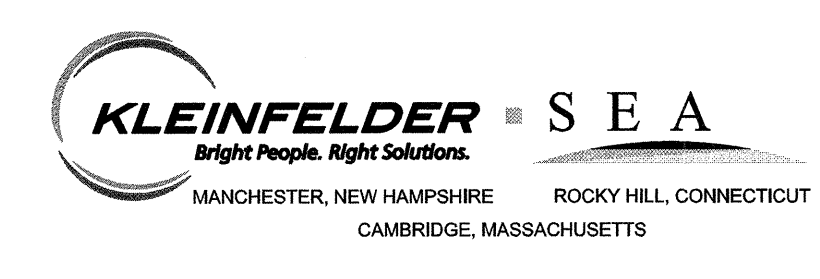
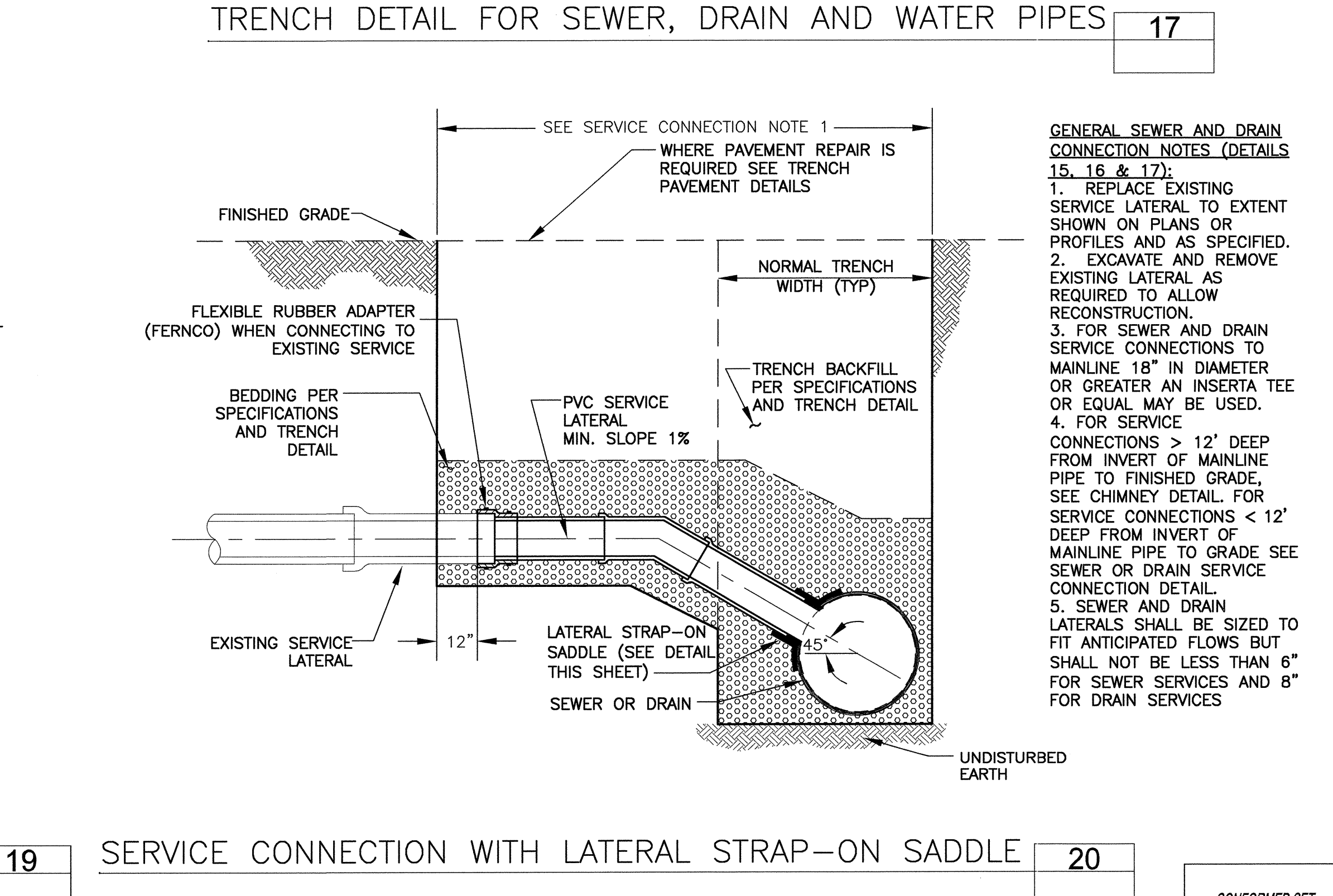
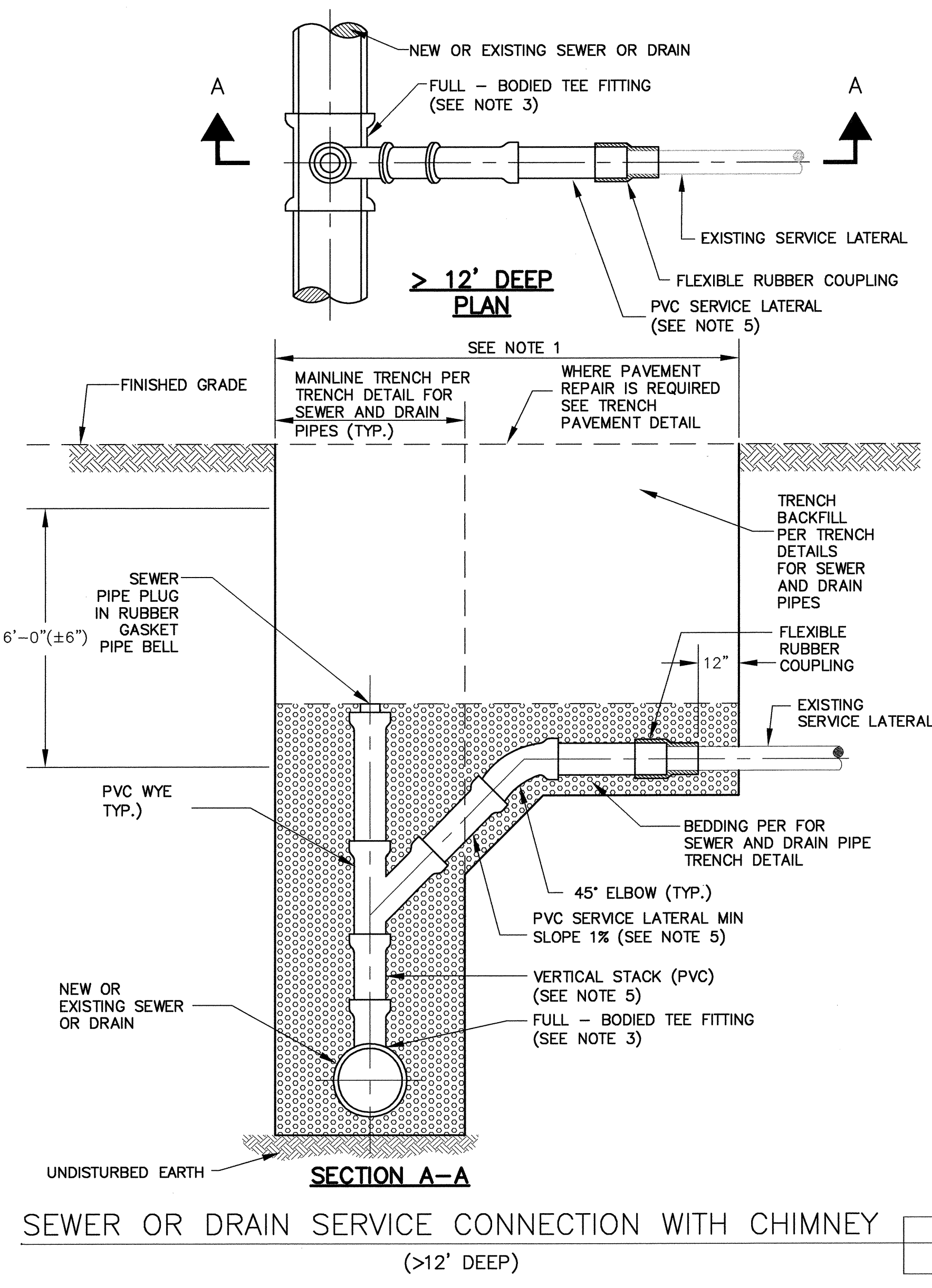
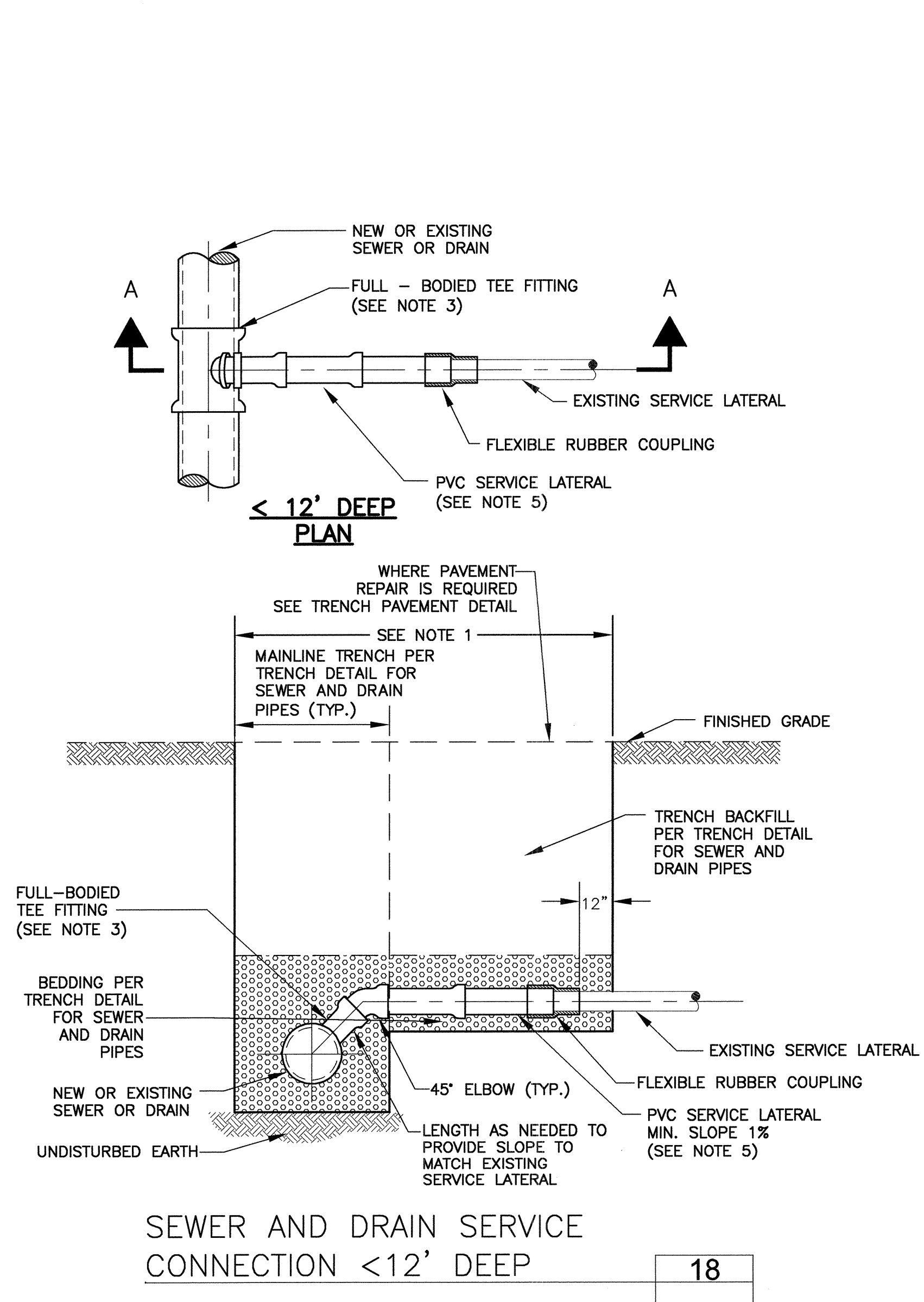
- REFER TO SPEC. SECTION 02500 AND PAVEMENT DETAILS FOR PAVEMENT AND SUB BASE REQUIREMENTS.
- REFER TO SPEC. SECTION 02210 FOR EXCAVATION, BACKFILL, GRADING, BEDDING AND COMPACTION REQUIREMENTS.
- FOR USE IN PAYMENT OF ALL ITEMS IN WHICH PAY TRENCH WIDTH IS A VARIABLE FOR THE CALCULATION OF QUANTITIES.
- BEDDING SHALL BE PER DIMENSION "A" UNLESS OTHERWISE INDICATED ON PROFILES.
- FOR EXCAVATION, BEDDING AND BACKFILL IN SILT OR CLAY SOIL SEE SPEC. SECTION 02210.

PIPE SIZE (DIA.)	TRENCH WIDTH	"A"
LESS THAN 2"	2'-0"	6"
2" TO 6"	3'-0"	6"
8" TO 22"	4'-0"	9"
24" & GREATER	I.D. + 2'-0"	12"

I.D. = INSIDE DIMENSION

WALL THICKNESS	TRENCH WIDTH	"A"
LESS THAN 6"	I.D. + 5'-0"	12"
6" TO 12"	I.D. + 6'-0"	12"
13" TO 18"	I.D. + 7'-0"	12"
19" & GREATER	O.D. + 6'-0"	12"

I.D. = INSIDE DIMENSION
O.D. = OUTSIDE DIMENSION



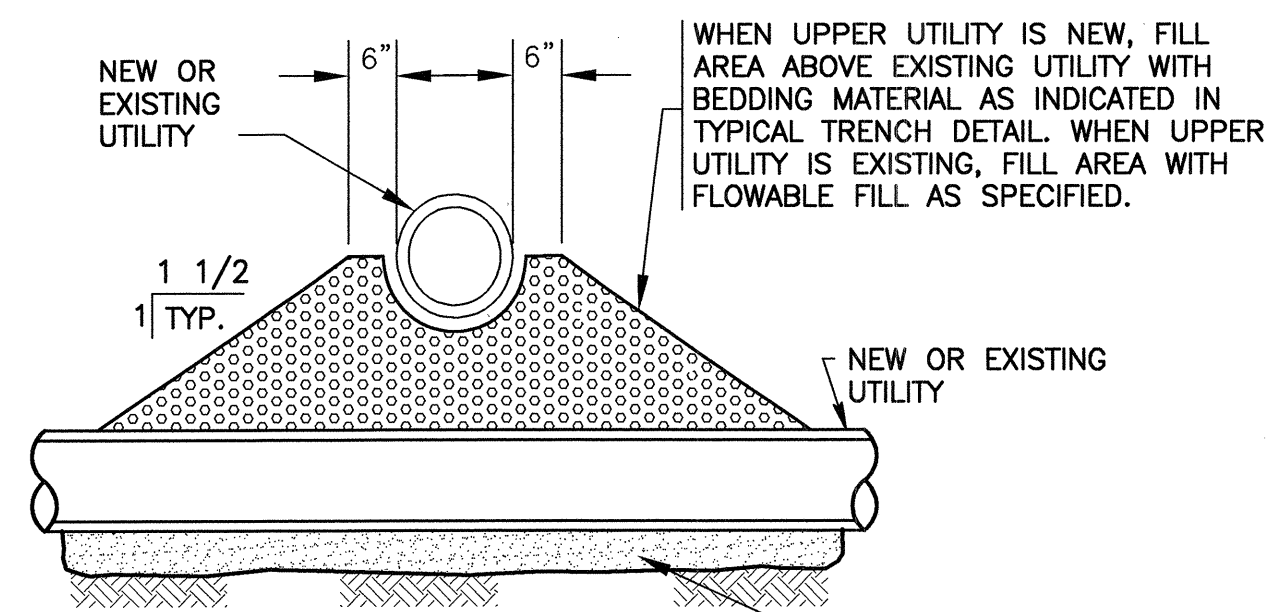
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 HURON A SEWER SEPARATION PROJECT
 CONTRACT NO. 8A
 CIVIL GENERAL
 TRENCH AND SERVICE CONNECTION DETAILS

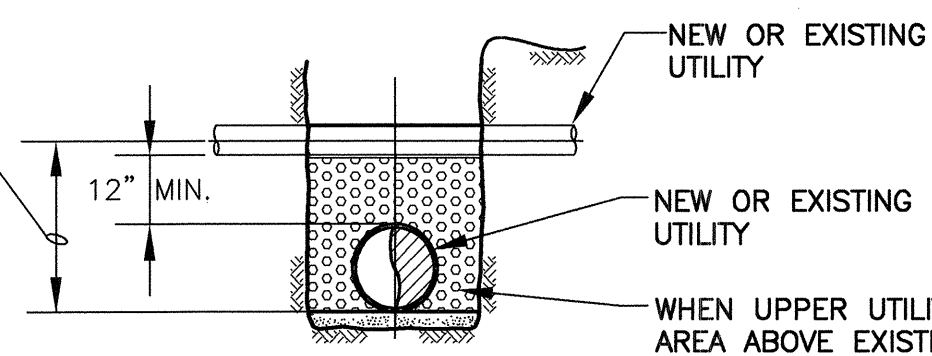
Sheet No.
CG-6
 File No.

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SECTION A-A

FILL FROM UNDISTURBED EARTH TO MID-DIAMETER OF NEW OR EXISTING UTILITY



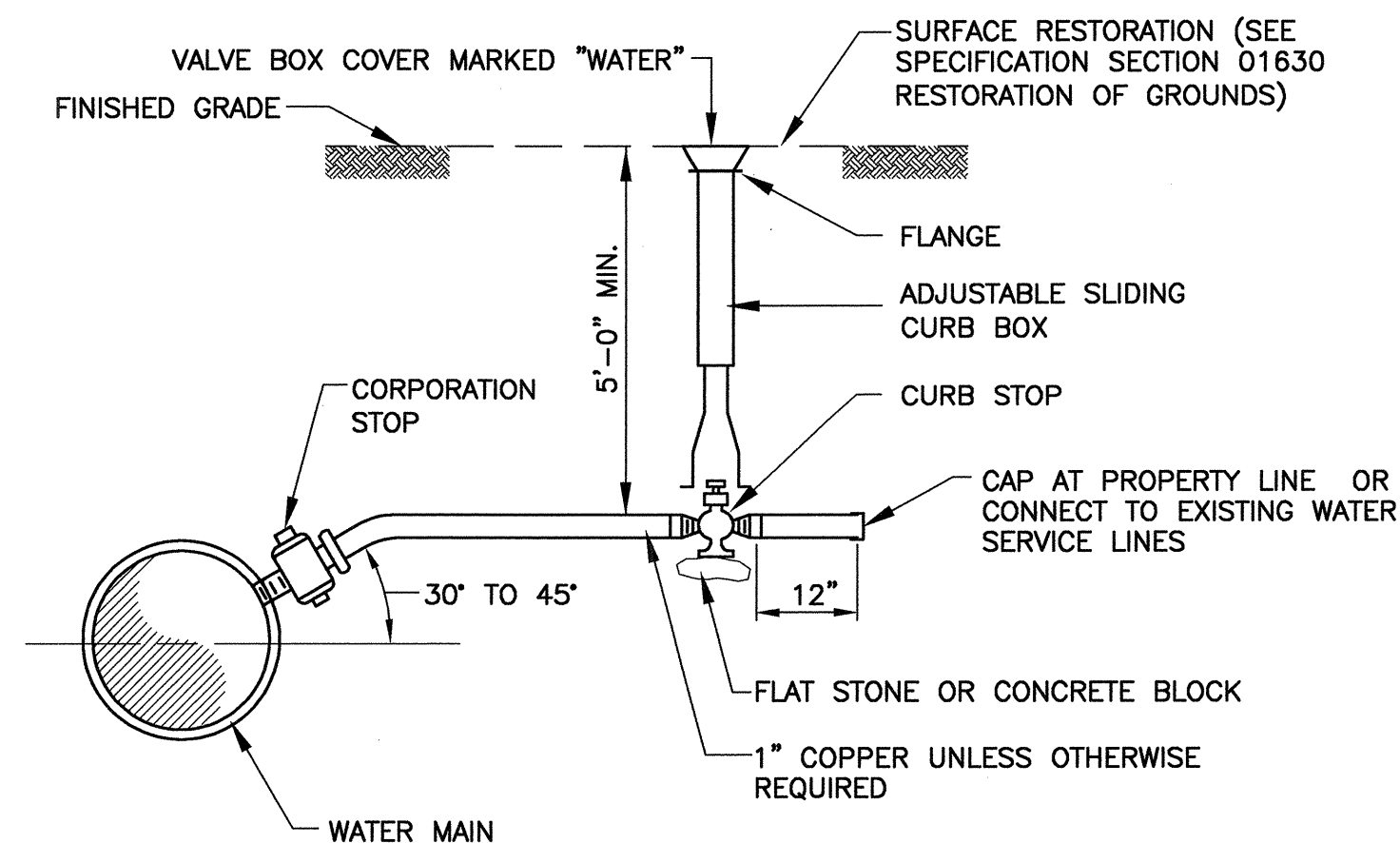
ELEVATION

UTILITY CROSSING DETAIL

21

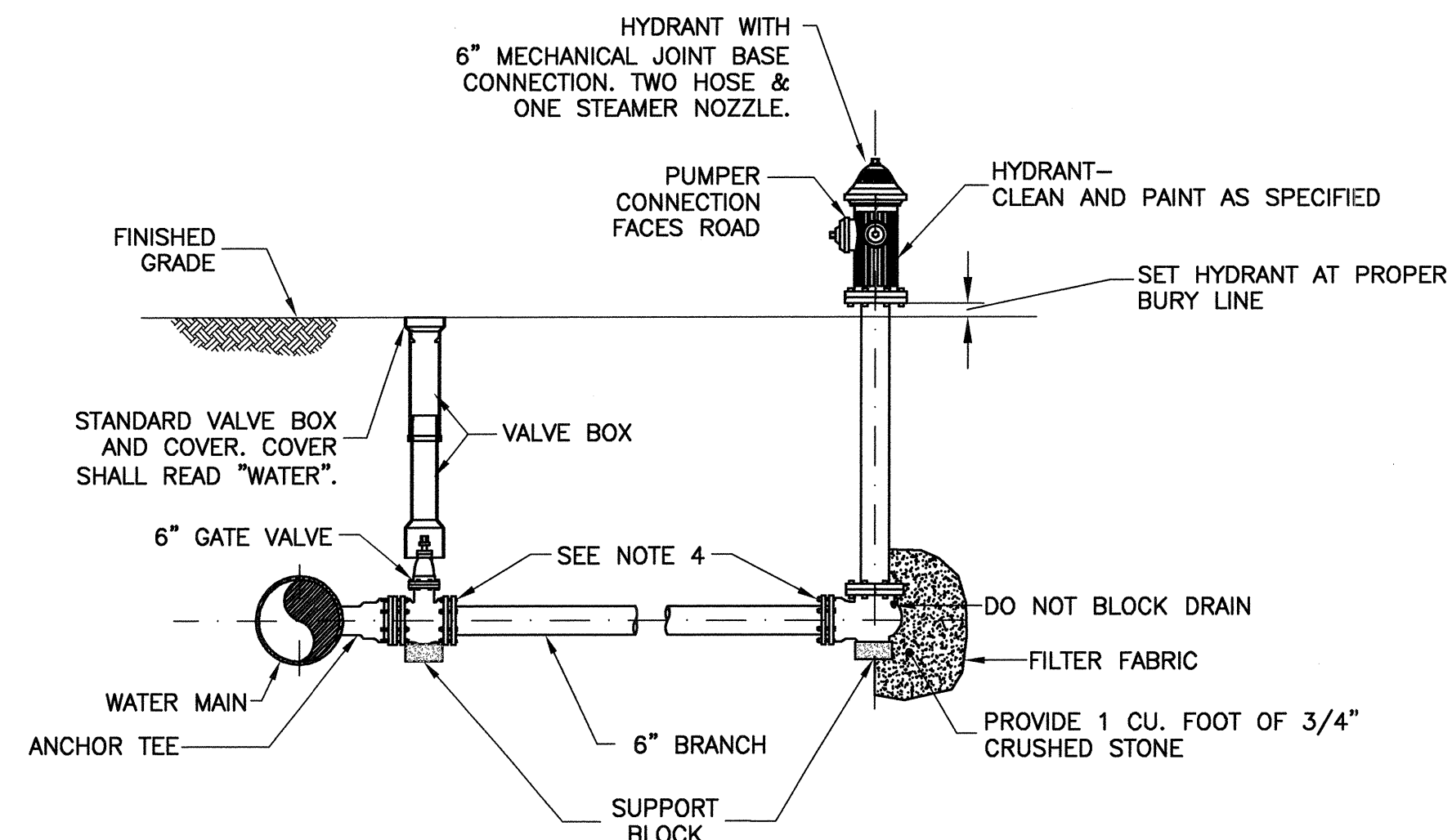
WATER NOTES:

1. ANY WATER MAIN TO BE ENCASED IN CONCRETE FOR STRUCTURAL PURPOSES SHALL BE WITHIN FLOWABLE FILL WITH 0% ASH CONTENT.
2. ALL GATE VALVES SHALL BE RESILIENT SEATED AND "OPEN RIGHT".
3. ALL NEW WATER MAIN TO BE WRAPPED IN POLY >= 9 MIL THICK (INCLUDING TAPPING SLEEVE VALVES, CORPORATIONS, TEES, ETC.)



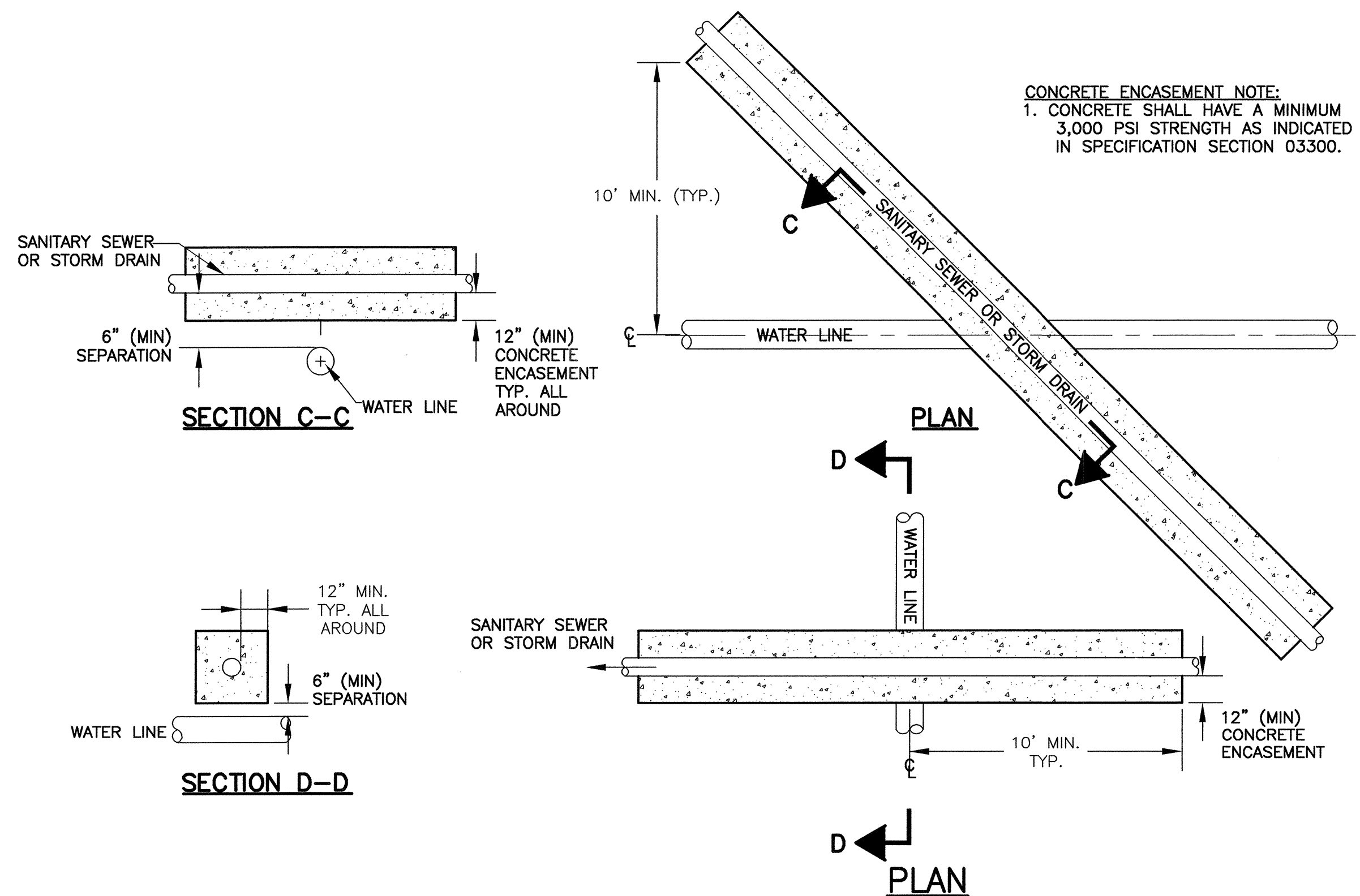
NEW WATER SERVICE DETAIL

22



FIRE HYDRANT DETAIL

23



CONCRETE ENCASEMENT DETAIL

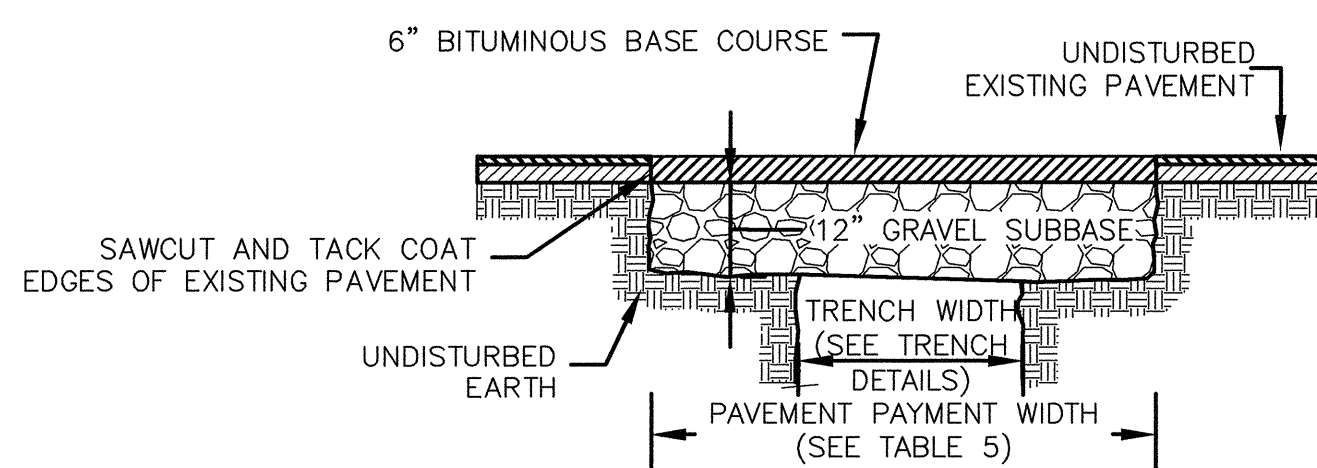
24

CONCRETE ENCASEMENT NOTE:

1. CONCRETE SHALL HAVE A MINIMUM 3,000 PSI STRENGTH AS INDICATED IN SPECIFICATION SECTION 03300.

TEMPORARY AND PERMANENT TRENCH PAVEMENT NOTE (DETAILS 24 & 25):

- REMOVE AND DISPOSE ALL TEMPORARY PAVEMENT AS REQUIRED. RESTORE AND COMPACT SUBBASE AS REQUIRED PRIOR TO PERMANENT TRENCH PAVEMENT.



PIPE SIZE (I.D.)	DEPTH TO PIPE INVERT				PAY WIDTH
	0 - 8'	OVER 8' - 12'	OVER 12' - 16'	OVER 16' - 20'	
0" - 24"	6'-6"	9'-6"	12'-6"	15'-6"	
OVER 24"	O.D. + 4'-0"	O.D. + 7'-0"	O.D. + 10'-0"	O.D. + 13'-0"	

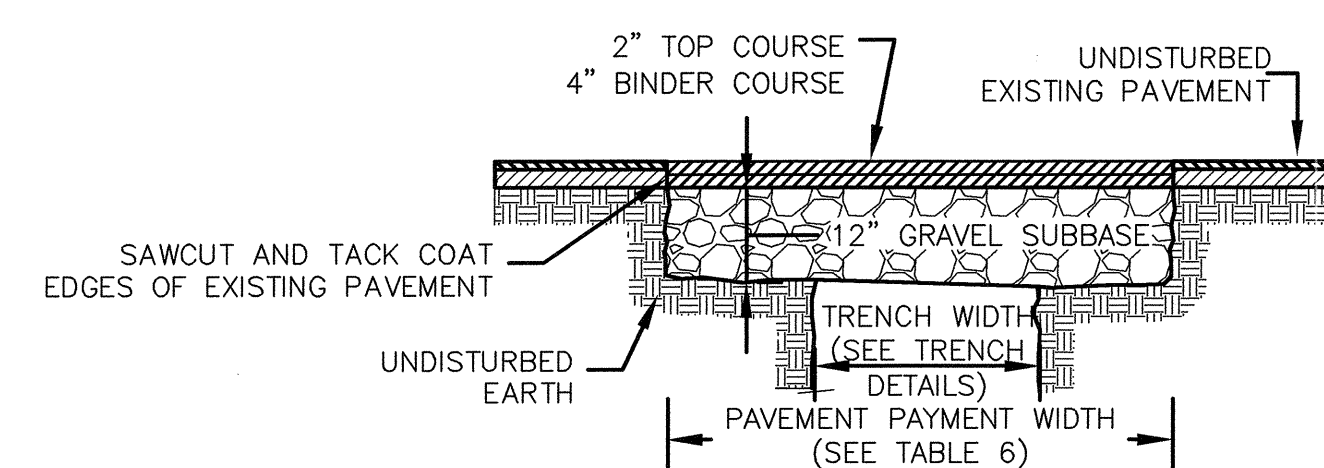
I.D. = INSIDE DIMENSION
O.D. = OUTSIDE DIMENSION

FOR EACH ADDITIONAL 4'-0" OF PIPE INVERT DEPTH OVER 20', ADD 3'-0" TO WIDTH LIMITS

TEMPORARY PAVEMENT DEPTH SHALL BE 3-IN.

TEMPORARY TRENCH PAVEMENT DETAIL

25



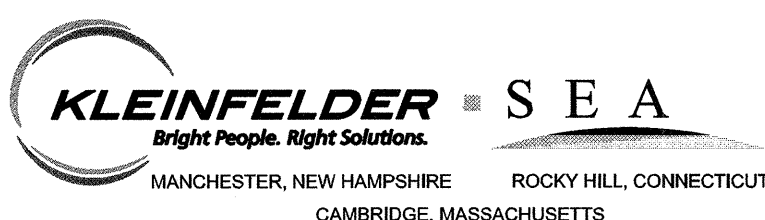
PIPE SIZE (I.D.)	DEPTH TO PIPE INVERT				PAY WIDTH
	0 - 8'	OVER 8' - 12'	OVER 12' - 16'	OVER 16' - 20'	
0" - 24"	8'-6"	11'-6"	14'-6"	17'-6"	
OVER 24"	O.D. + 6'-0"	O.D. + 9'-0"	O.D. + 12'-0"	O.D. + 15'-0"	

I.D. = INSIDE DIMENSION
O.D. = OUTSIDE DIMENSION

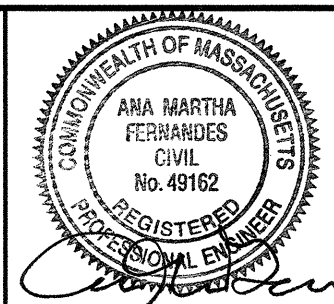
FOR EACH ADDITIONAL 4'-0" OF PIPE INVERT DEPTH OVER 20', ADD 3'-0" TO WIDTH LIMITS

PERMANENT TRENCH PAVEMENT DETAIL

26



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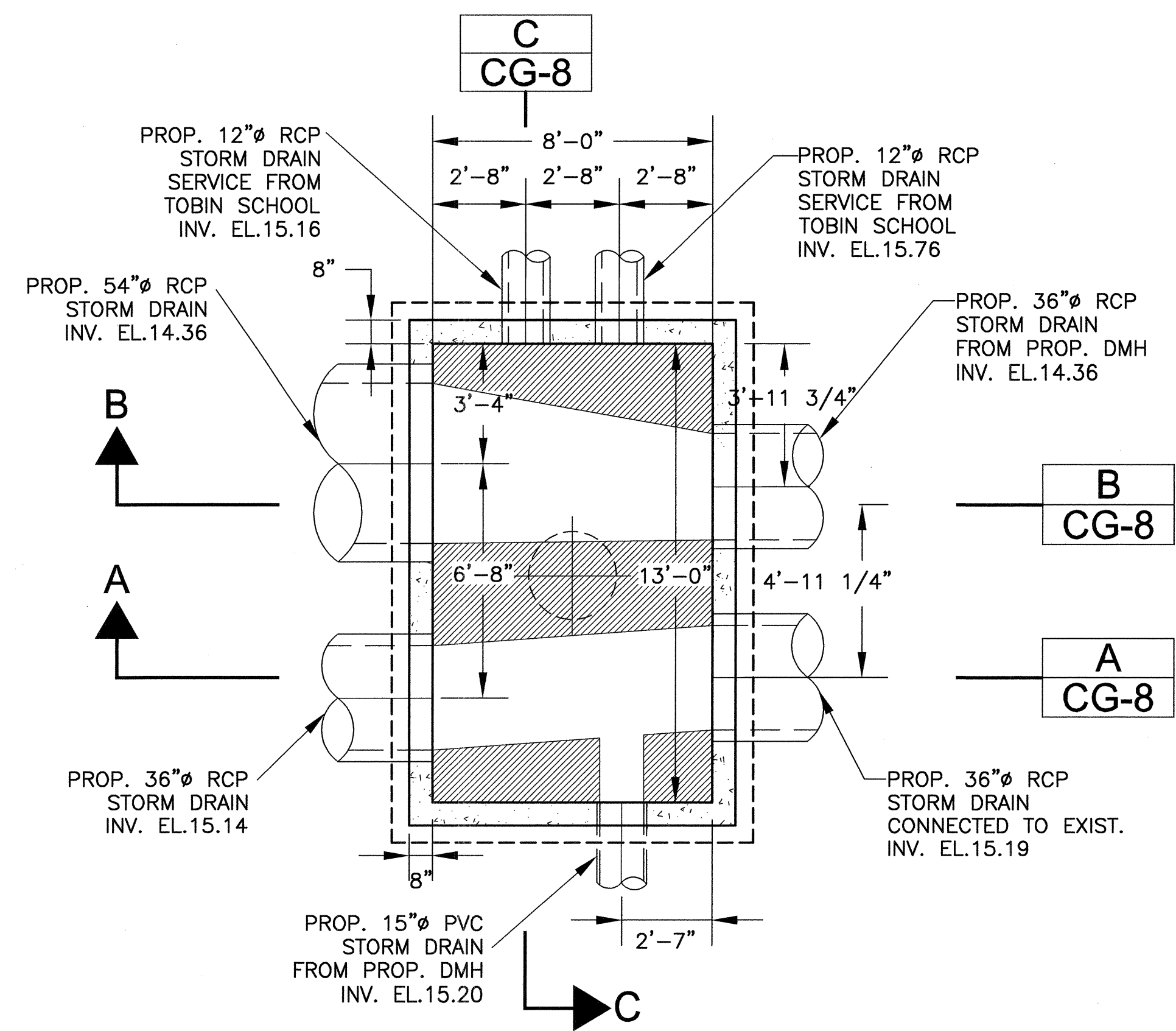
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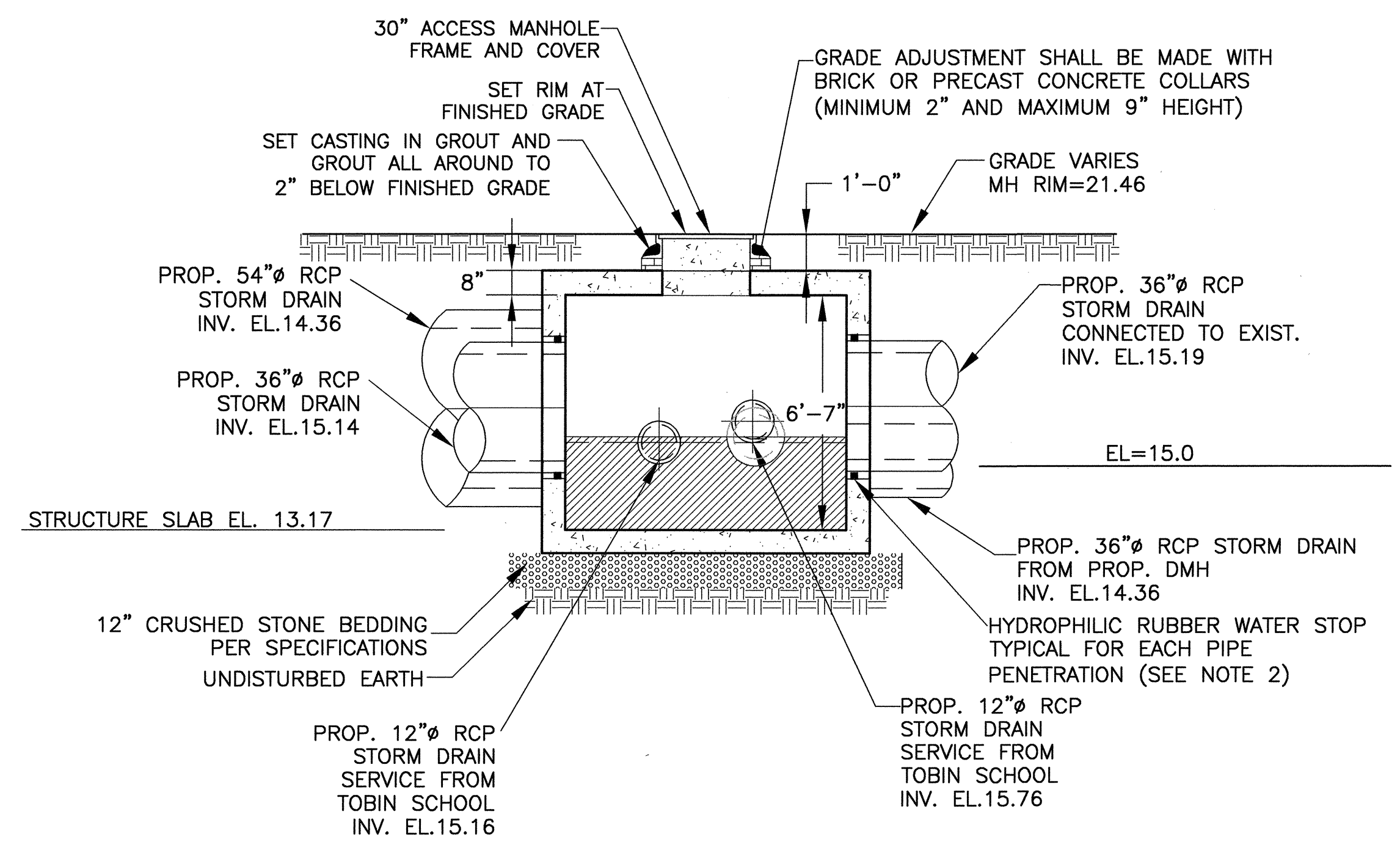
CITY OF CAMBRIDGE, MASSACHUSETTS
HURON A SEWER SEPARATION PROJECT
CONTRACT NO. 8A
CIVIL GENERAL
UTILITY CROSSING, WATER & PAVEMENT DETAILS

Sheet No. CG-7
File No.

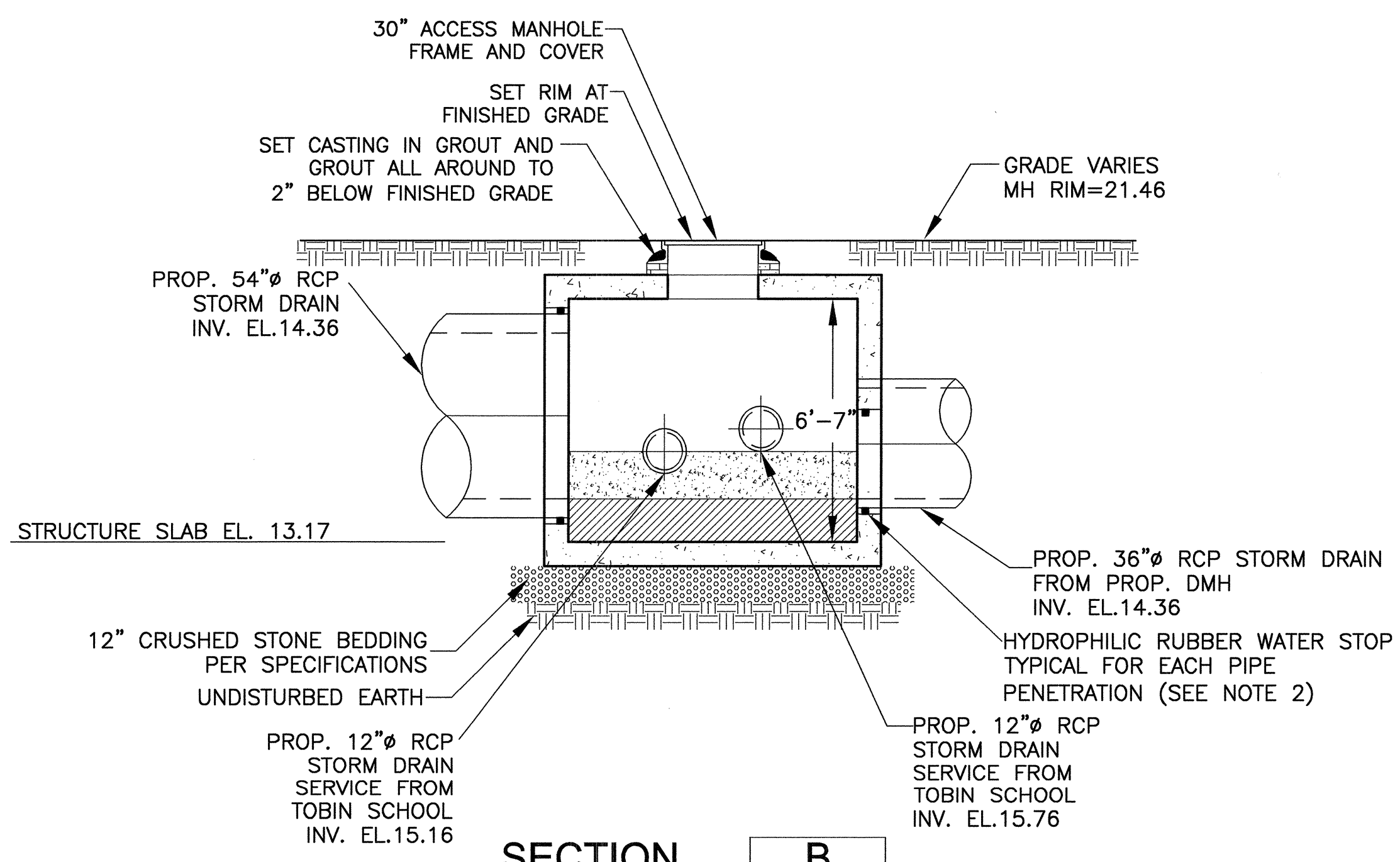
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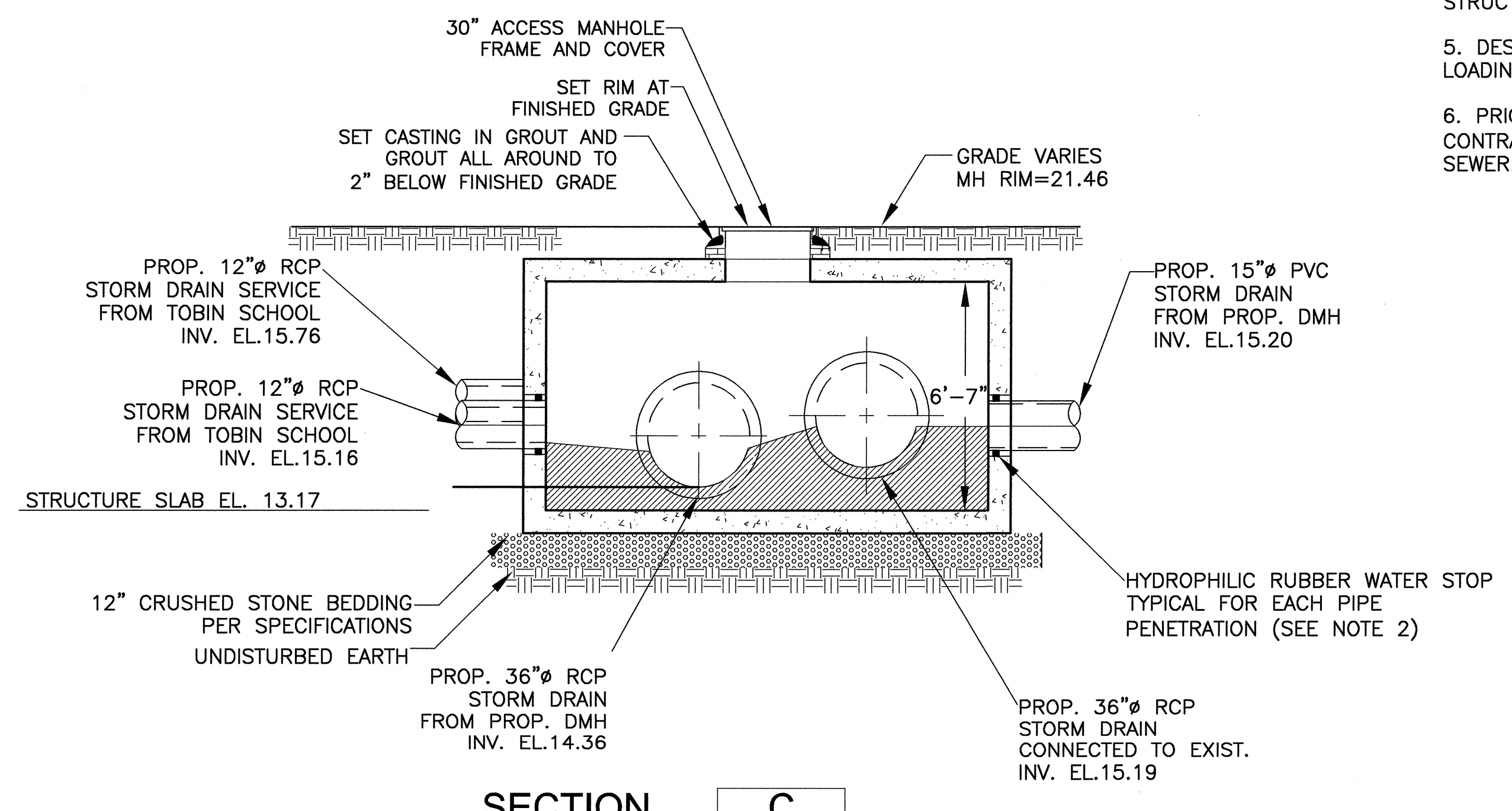
DRAIN VAULT NO. 1 PLAN 27



SECTION A



SECTION B



SECTION C

NOTES:

1. BEFORE CONSTRUCTION THE CONTRACTOR SHALL FIELD VERIFY BOTH THE HORIZONTAL AND VERTICAL LOCATIONS OF THE EXISTING 36" COMBINED SEWER PIPE WITH A TEST PIT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
2. INSTALL HYDROPHILIC (WATER STOP) GASKET AS SPECIFIED ALONG PIPE PERIMETER FOR EACH DRAIN PIPE PENETRATION.
3. SEE SHEET CG-3 FOR MANHOLE FRAME AND COVER DETAILS.
4. INNER EDGE OF CONCRETE BENCH SHALL BE AT PIPE SPRINGLINE AND SLOPED AT 8.3% TO THE STRUCTURE WALL.
5. DESIGN THE STRUCTURE FOR AASHTO HS20 LOADING, PER SPEC. SECTION 03410.
6. PRIOR TO SHOP DRAWING SUBMITTAL, CONTRACTOR TO TEST PIT FOR 36" COMBINED SEWER.

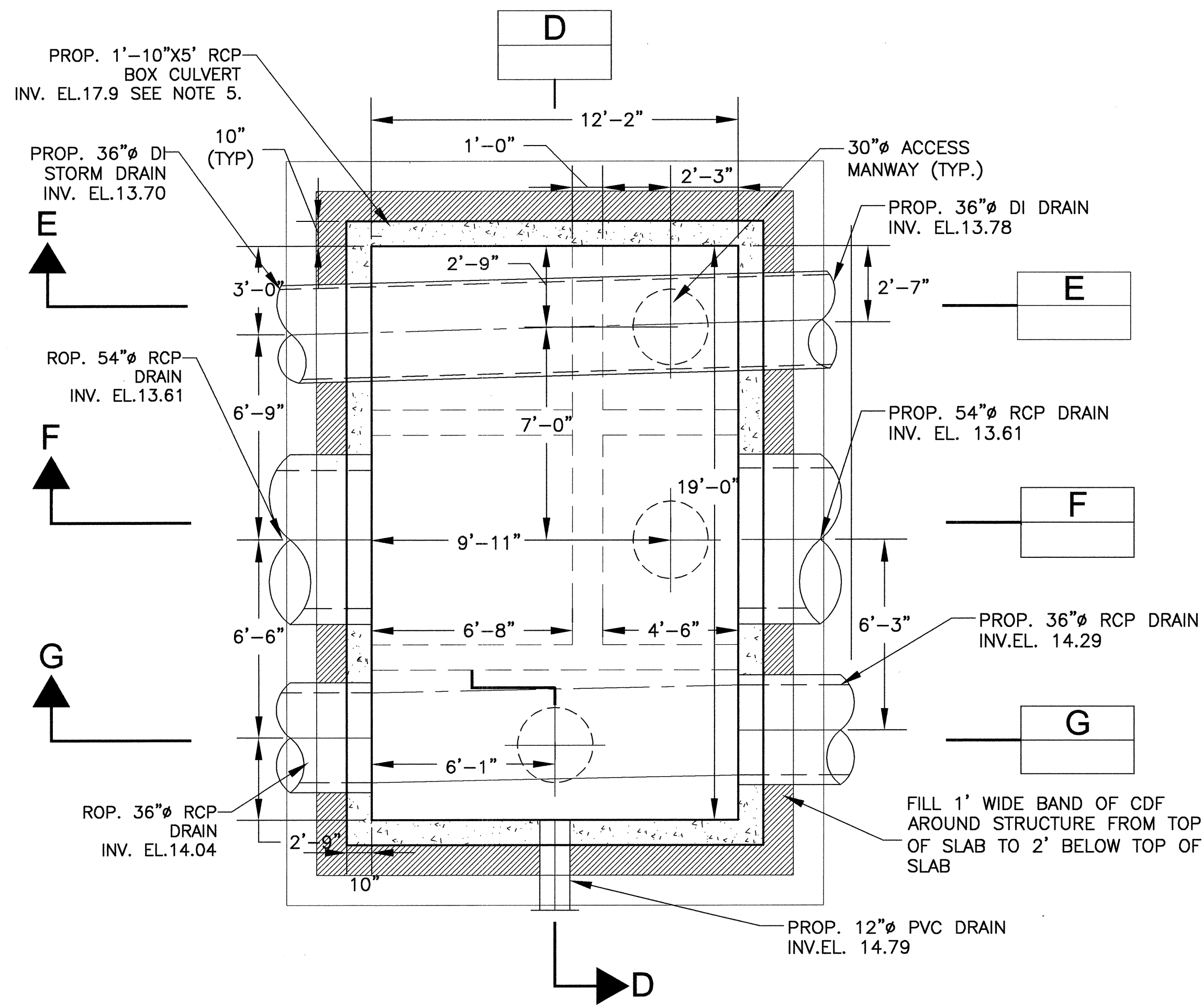
CONFORMED SET



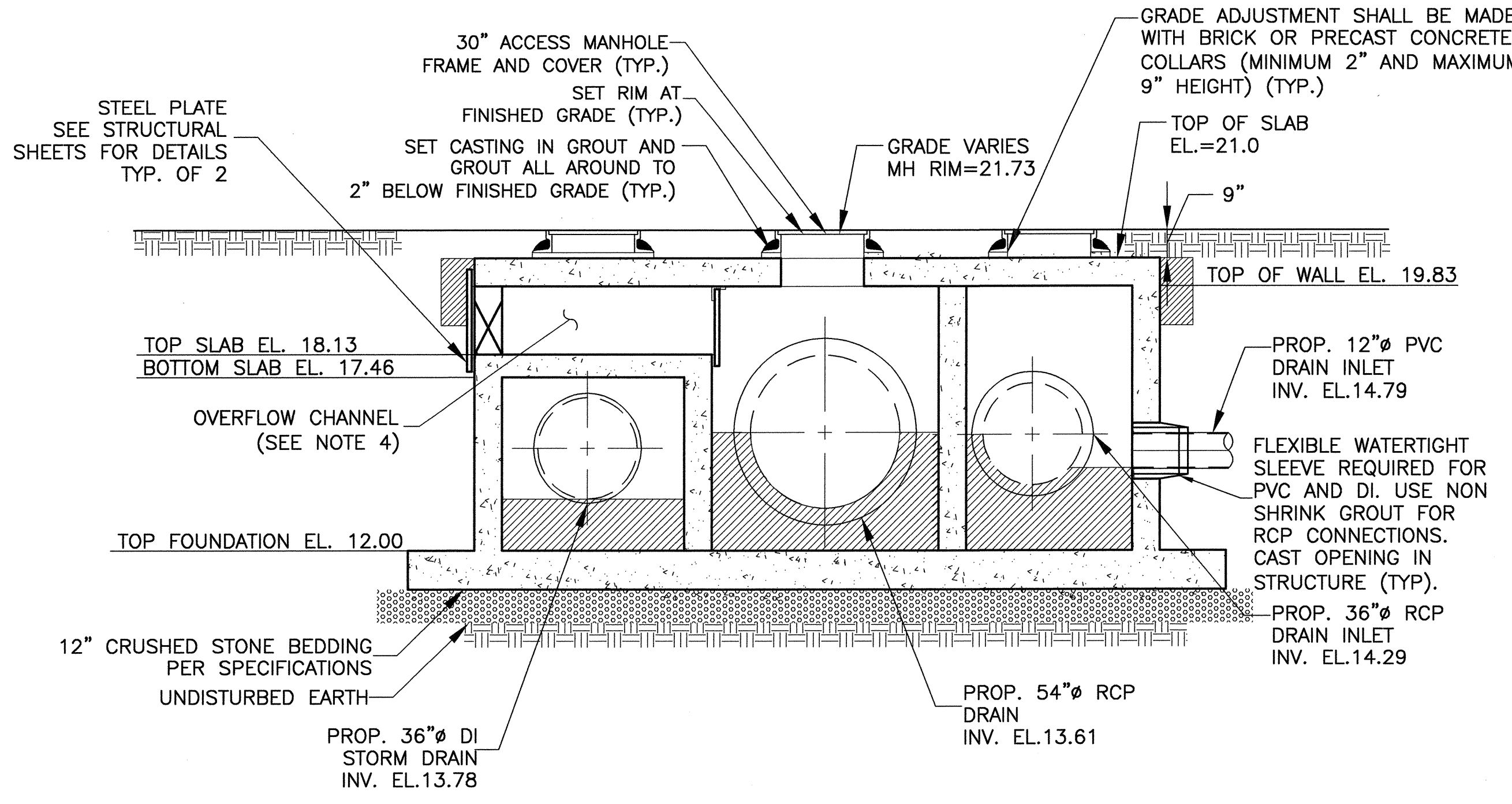
Scale	1/4"=1'-0"		
Date	SEPTEMBER 2012		
Job No.	1010691		
Designed by	AMF		
Drawn by	ZSH		
Checked by	BFR	No.	Description
Approved by	AMF		REVISIONS



CITY OF CAMBRIDGE, MASSACHUSETTS	Sheet No.
HURON A SEWER SEPARATION PROJECT	CG-8
CONTRACT NO. 8A	File No.
CIVIL GENERAL	
DRAIN VAULT NO.1 PLAN AND SECTIONS	

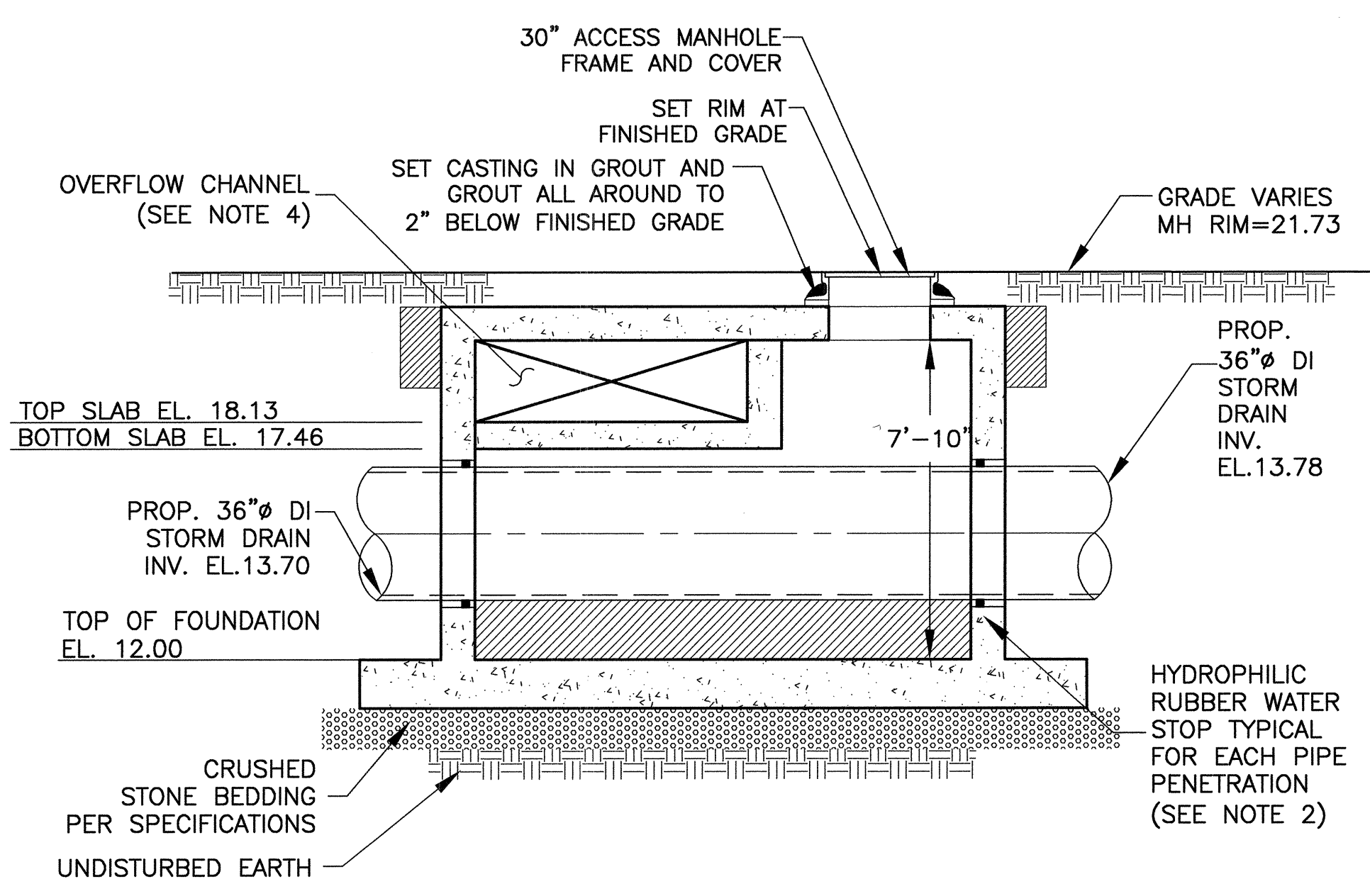


DRAIN VAULT NO. 2 PLAN 28

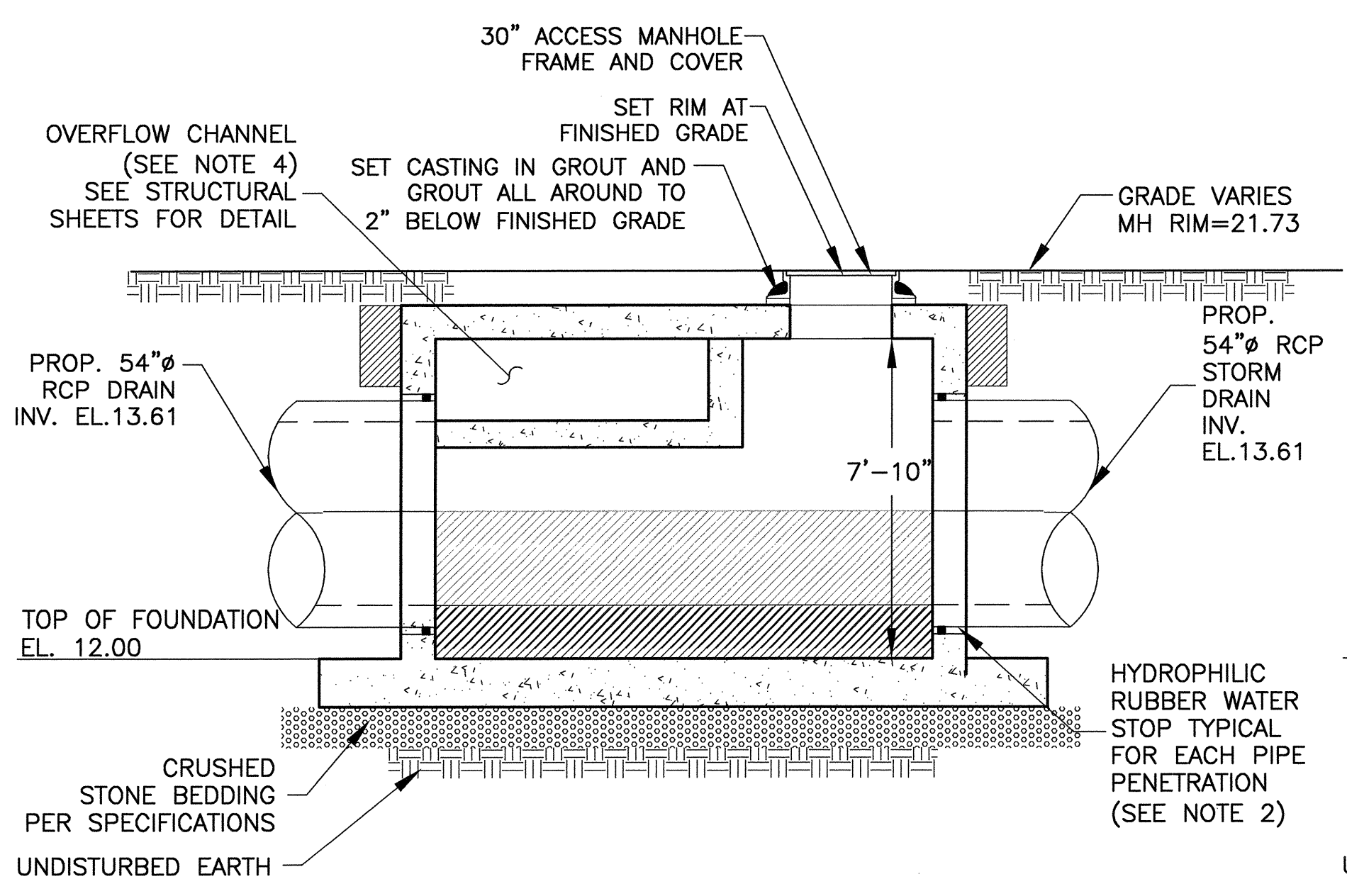


SECTION D D

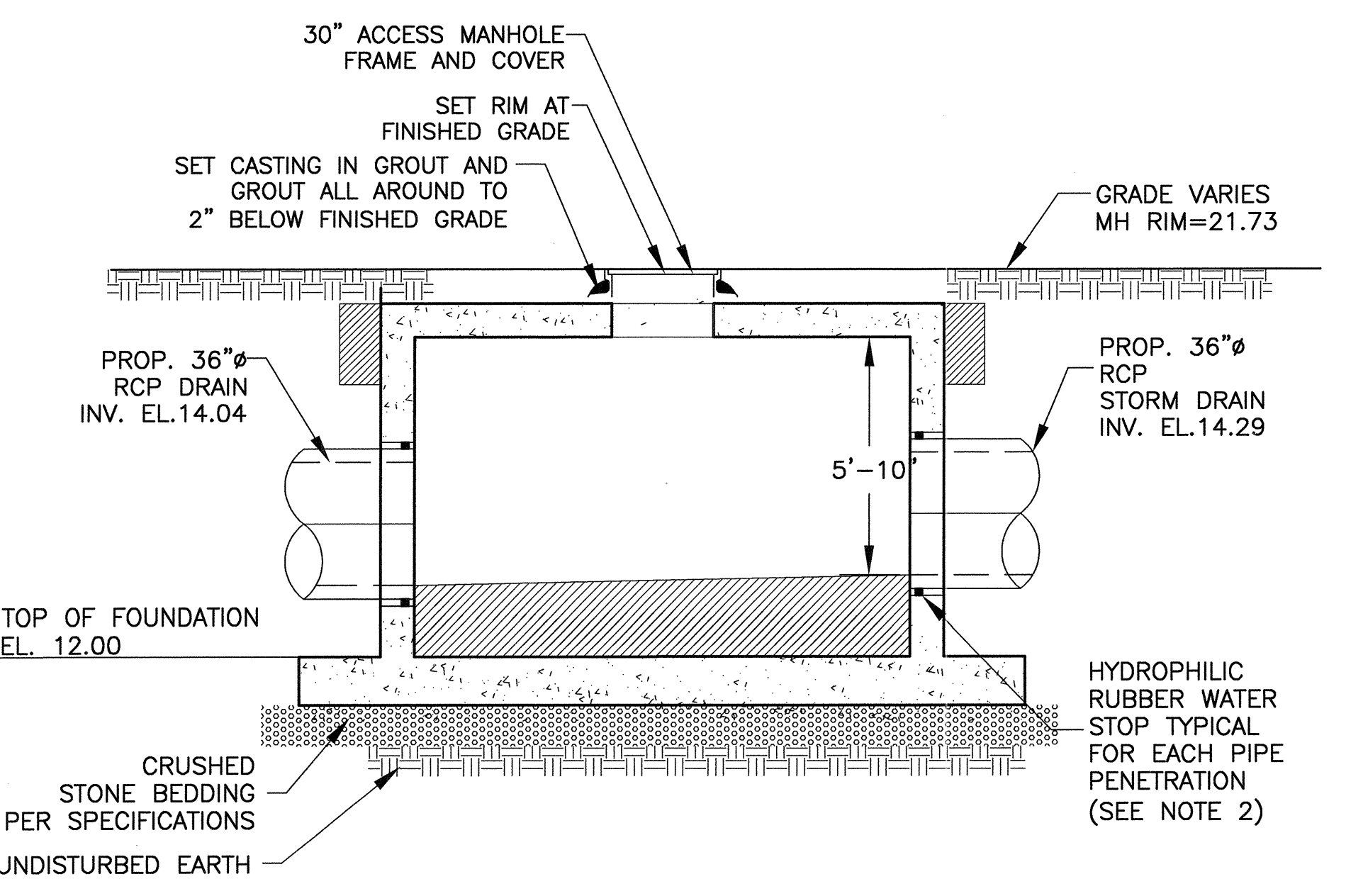
- NOTES:**
- BEFORE CONSTRUCTION THE CONTRACTOR SHALL FIELD VERIFY BOTH THE HORIZONTAL LOCATION OF THE ADJACENT EXISTING DMH D38DMH4023 WITH A TEST PIT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
 - INSTALL HYDROPHILIC (WATER STOP) GASKET AS SPECIFIED ALONG PIPE PERIMETER FOR EACH DRAIN PIPE PENETRATION.
 - SEE SHEET CG-3 FOR MANHOLE FRAME AND COVER DETAILS.
 - OVERFLOW CHANNEL WILL NOT BE ACTIVE UPON COMPLETION OF THE CONTRACT. IT WILL BE USED AS AN OVERFLOW FOR FUTURE STORMWATER STORAGE WORK AT THE TOBIN SCHOOL. STEEL PLATES WILL BE USED TO COVER FACES OF OVERFLOW CHANNEL FOR INTERIM CONDITIONS.
 - FOR STRUCTURAL DETAILS OF DRAIN VAULT NO.2 SEE SHEETS S-1 THROUGH S-3.



SECTION E E

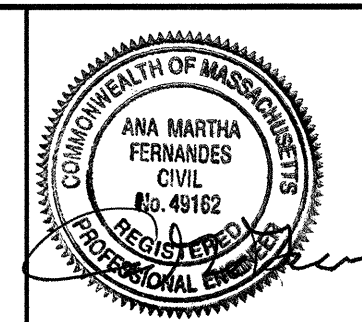
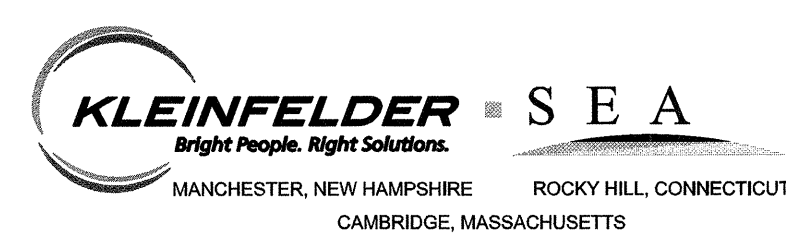


SECTION F F



SECTION G G

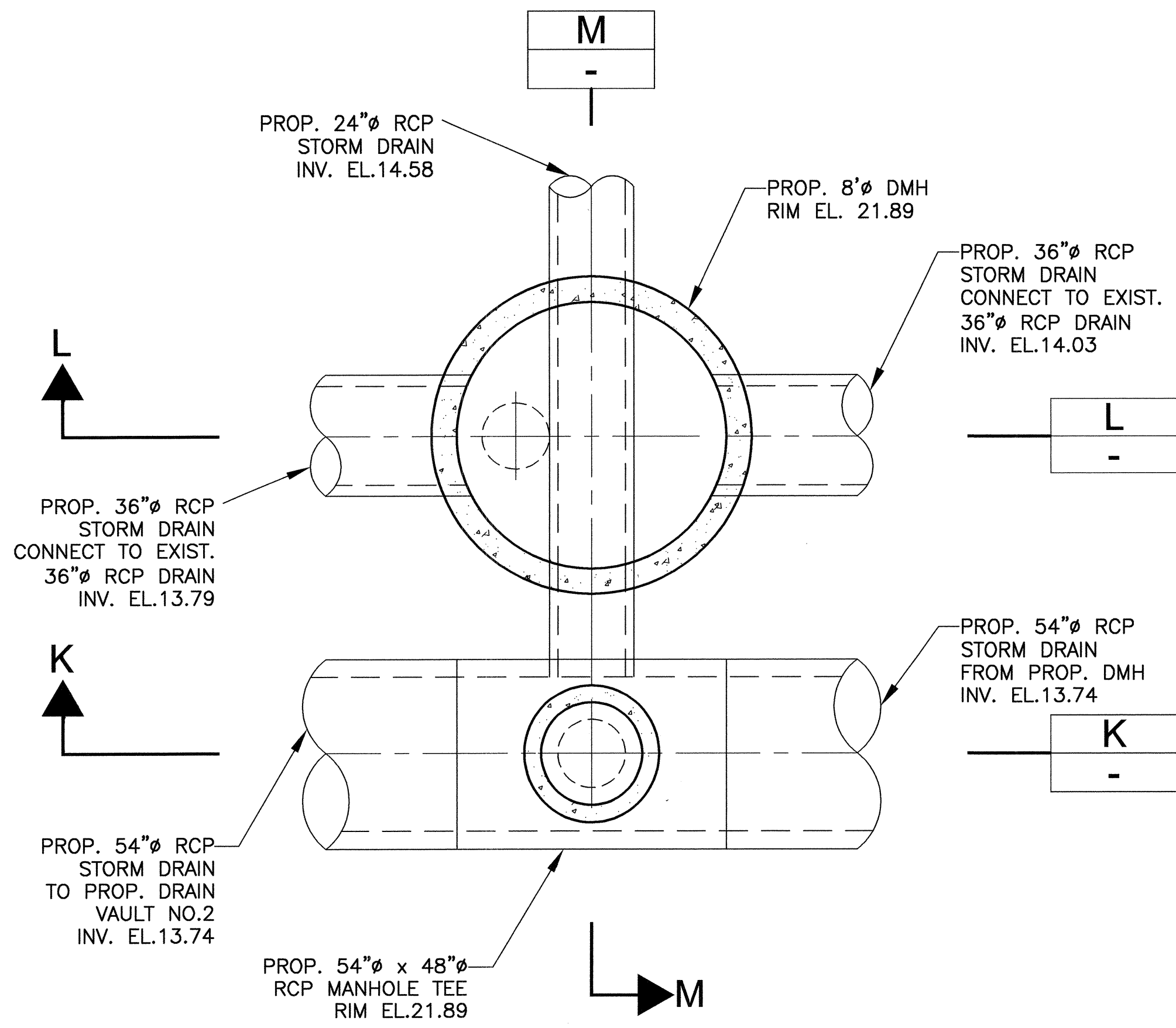
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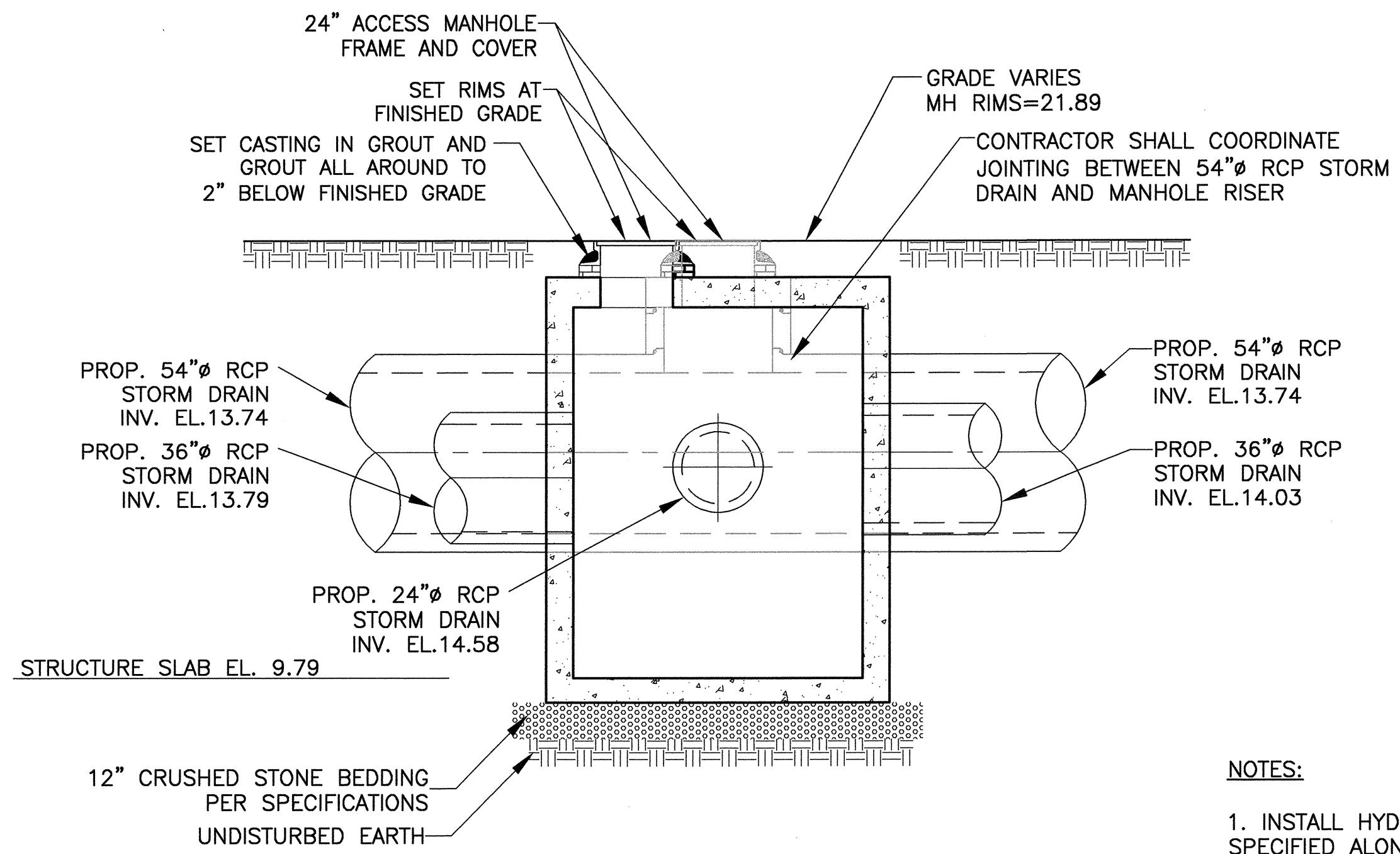
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CITY OF CAMBRIDGE, MASSACHUSETTS	Sheet No.
HURON A SEWER SEPARATION PROJECT	CG-9
CONTRACT NO. 8A	File No.
CIVIL GENERAL	
DRAIN VAULT NO.2 PLAN AND SECTIONS	

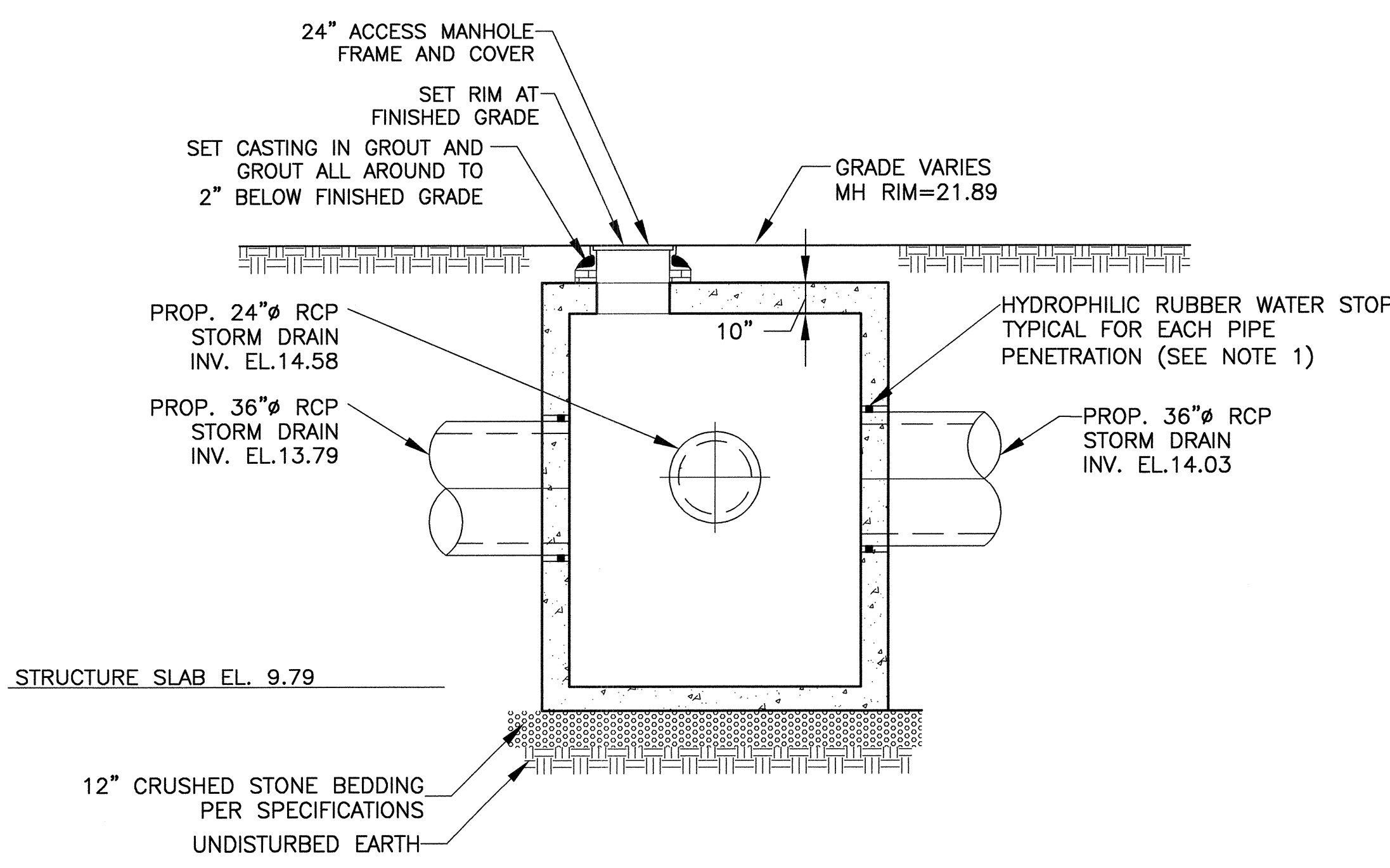


DRAIN GRIT PLAN 30

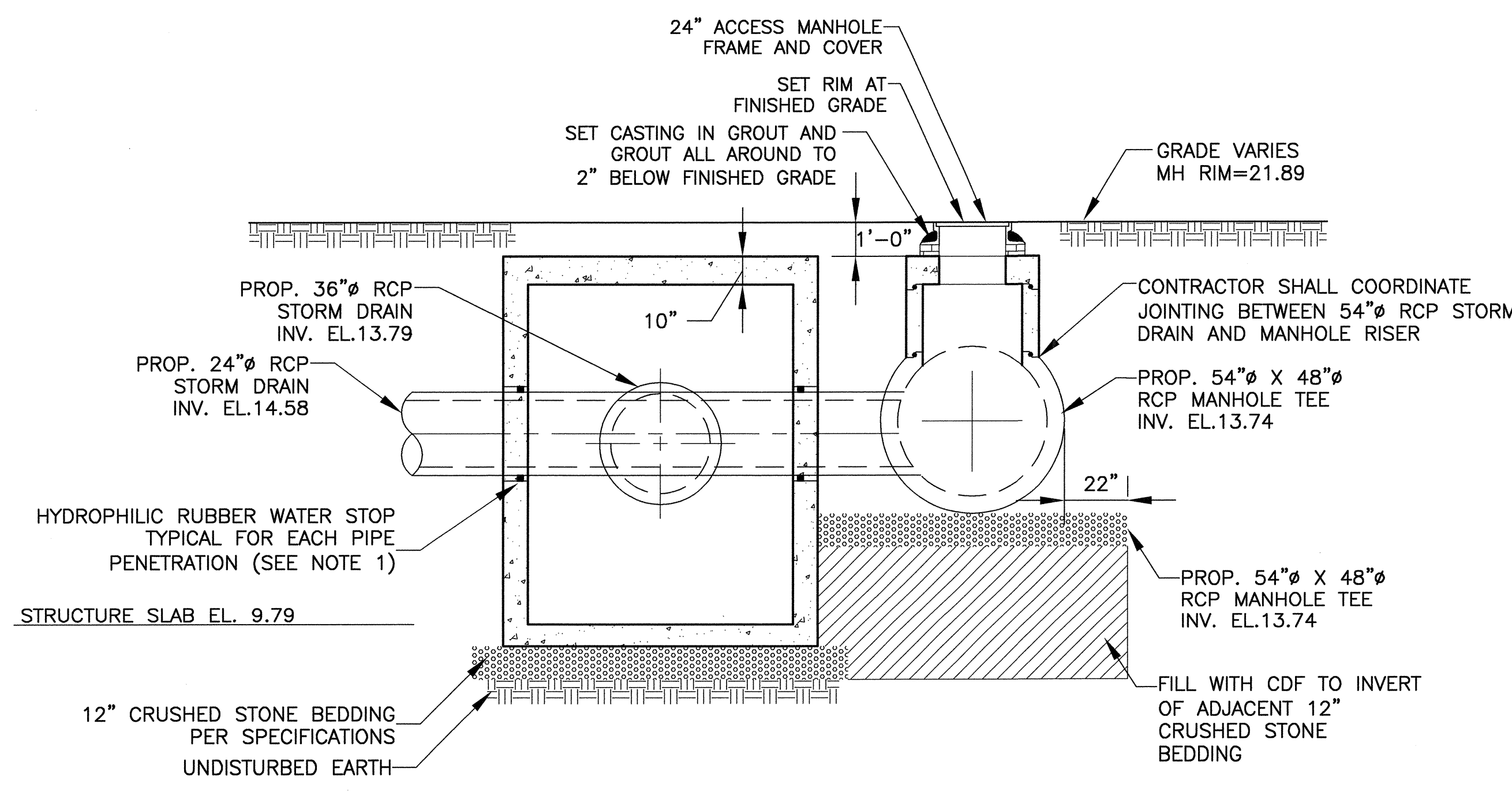


SECTION K K

- NOTES:**
1. INSTALL HYDROPHILIC (WATER STOP) GASKET AS SPECIFIED ALONG PIPE PERIMETER FOR EACH DRAIN PIPE PENETRATION.
 2. SEE SHEET CG-3 FOR MANHOLE FRAME AND COVER DETAILS.
 3. DESIGN THE STRUCTURE FOR AASHTO HS20 LOADING PER SPECIFICATION SECTION 03410.

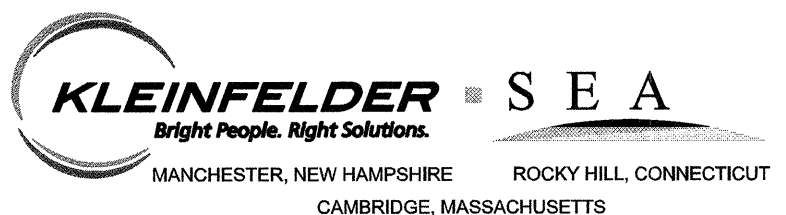


SECTION L L

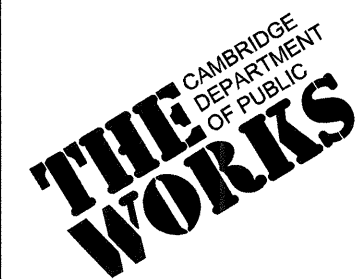


SECTION M M

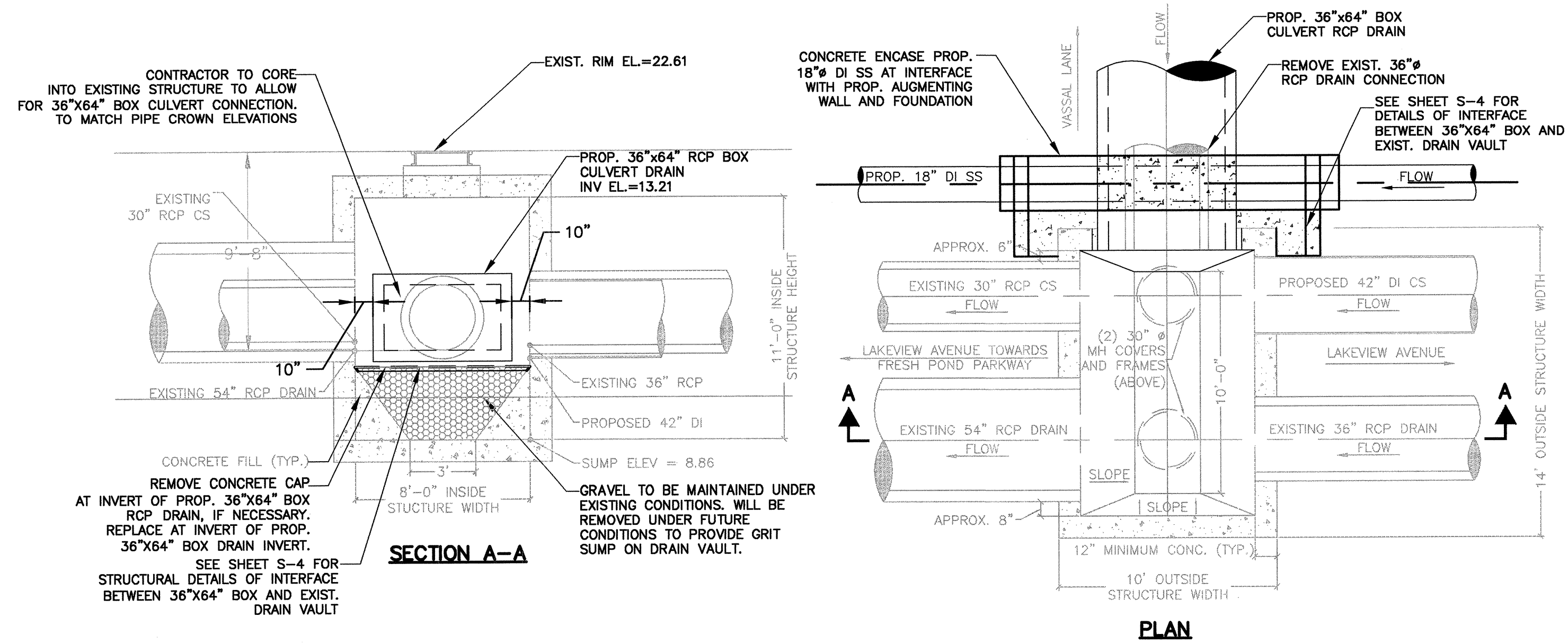
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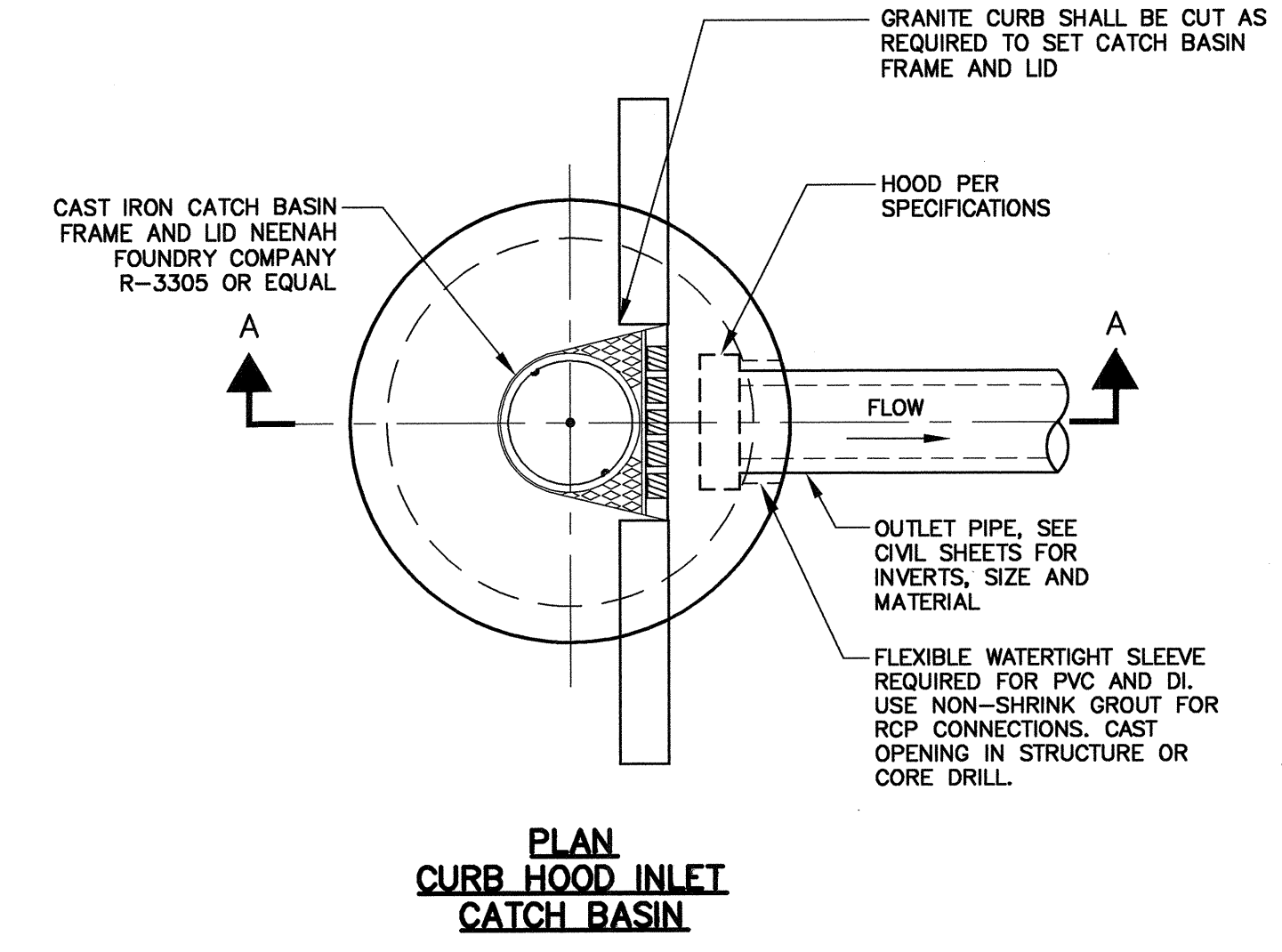


CITY OF CAMBRIDGE, MASSACHUSETTS	Sheet No.
HURON A SEWER SEPARATION PROJECT	CG-11
CONTRACT NO. 8A	File No.
CIVIL GENERAL	
DRAIN GRIT PIT PLAN AND SECTIONS	

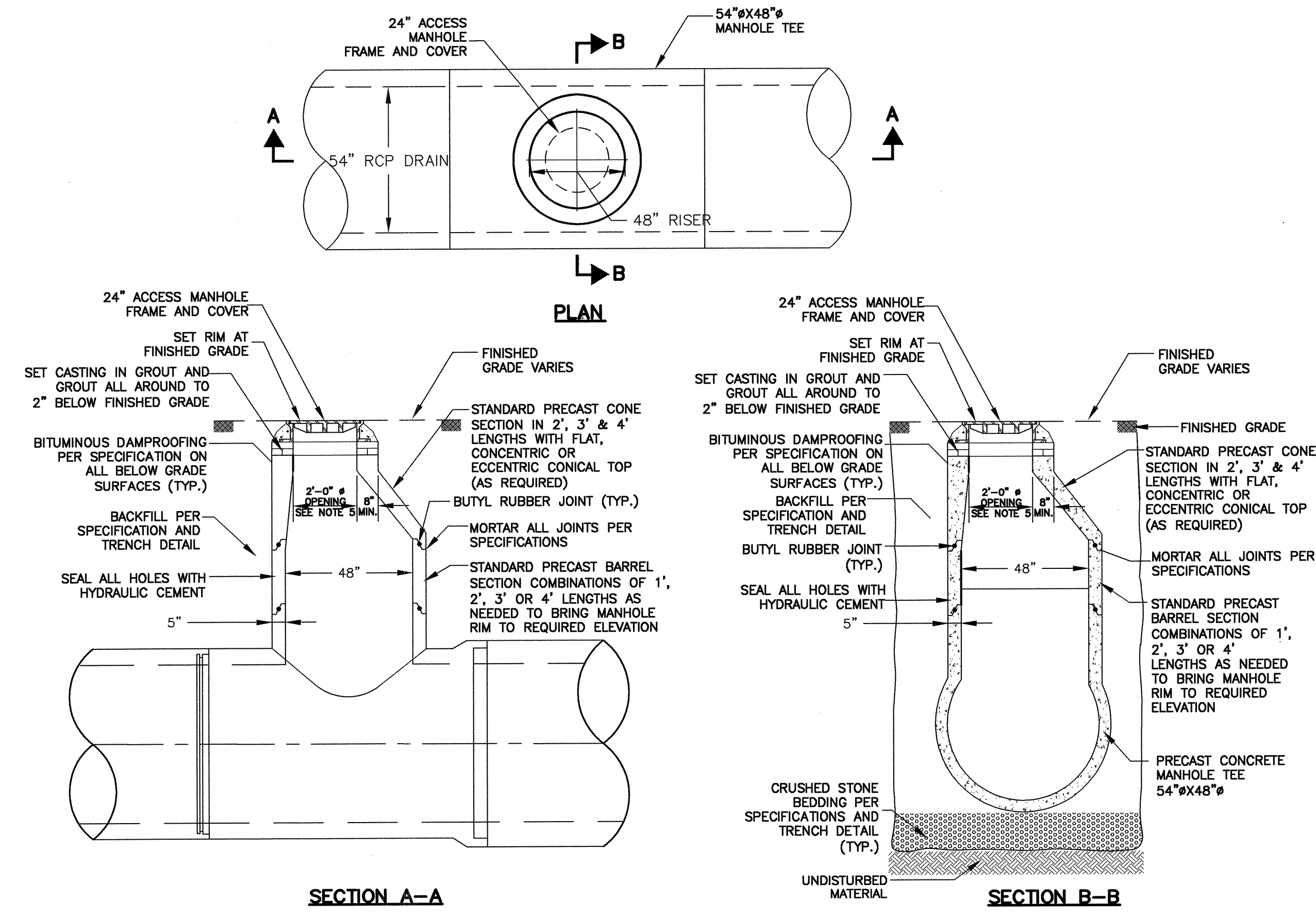


36\"/>

31

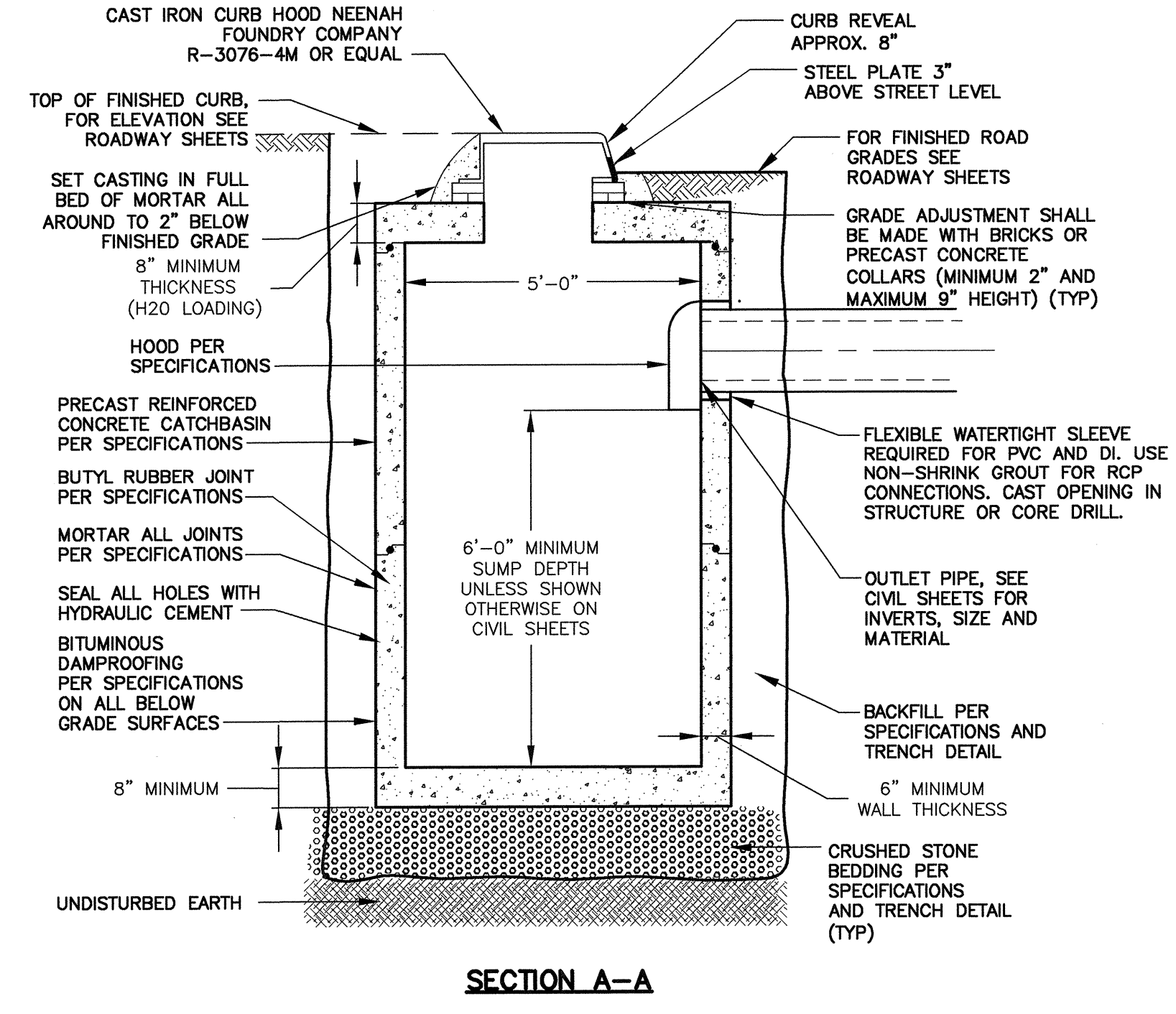


PLAN CURB HOOD INLET CATCH BASIN



54\"/>

32

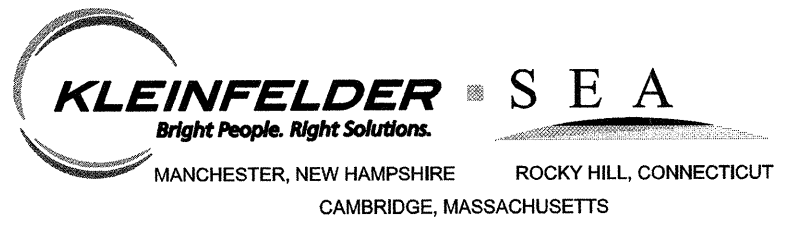


SECTION A-A

CURB HOOD INLET CATCH BASIN

33

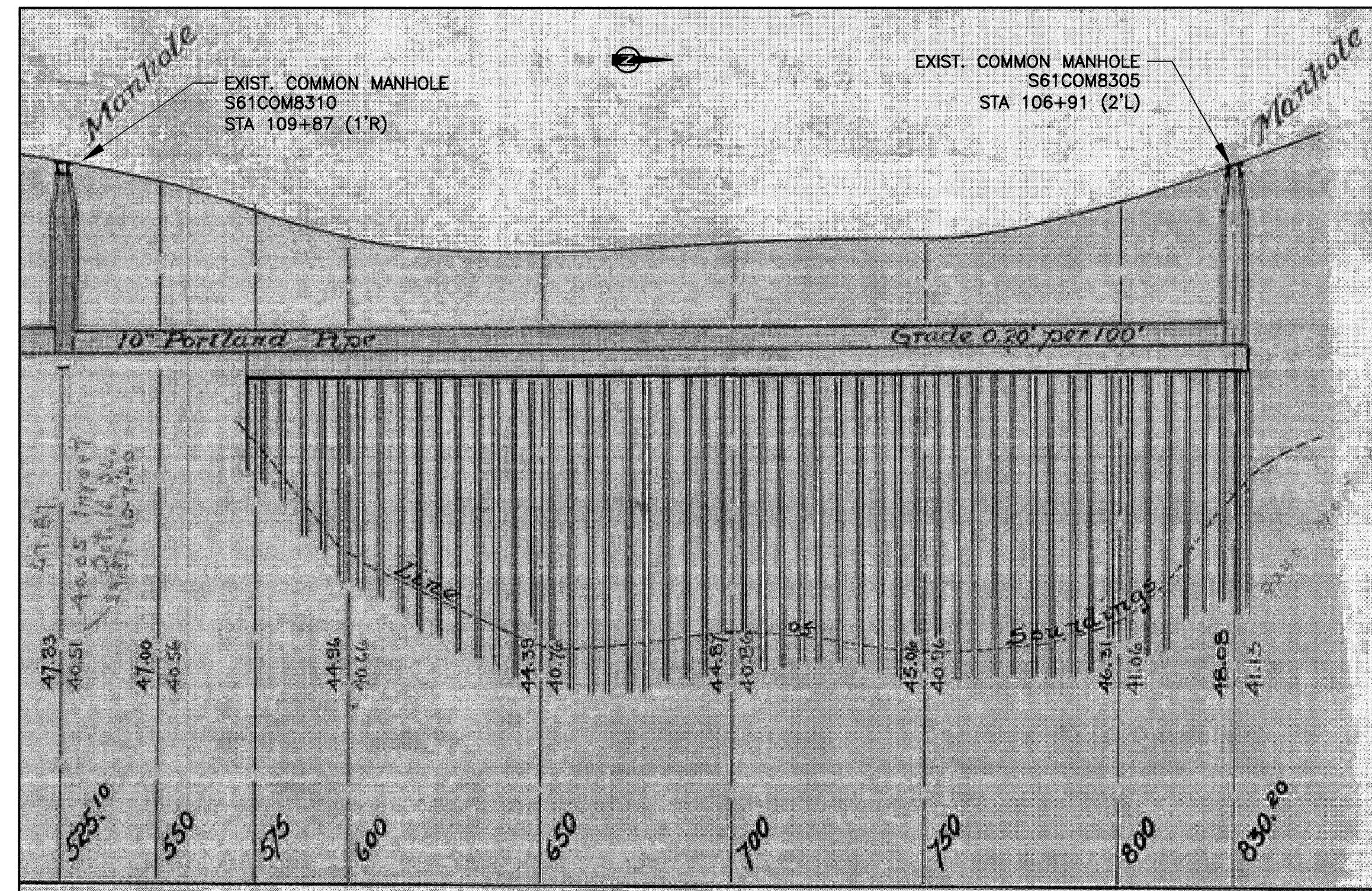
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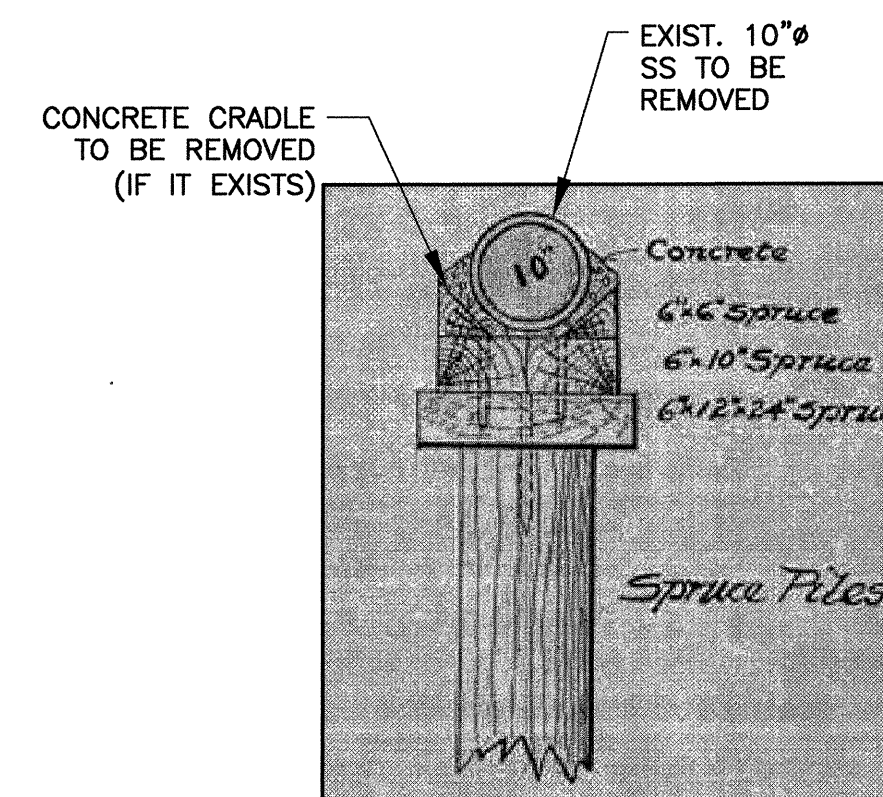
CITY OF CAMBRIDGE, MASSACHUSETTS	Sheet No.
HURON A SEWER SEPARATION PROJECT	CG-12
CONTRACT NO. 8A	File No.
CIVIL GENERAL	
MISC. DRAIN STRUCTURE DETAILS I	



HURON AVENUE

NOTES:

1. EXIST. 24" RCP SD CONSTRUCTED OVER 10" SS NOT SHOWN. RECORD DRAWING UNAVAILABLE.
2. LOCATIONS AND/OR CONDITION OF EXIST. TIMBER PILES IS UNKNOWN.



UNKNOWN TIMBER PILE DETAIL

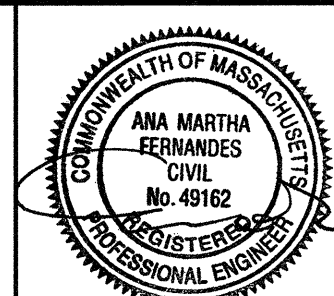
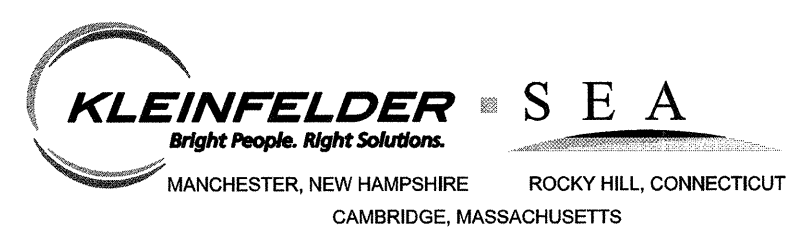
**LARCH ROAD PROFILE OF HISTORICAL CONDITIONS
(DRAWING DATE: 1895)**

**LARCH ROAD HISTORICAL PROFILE
AND DETAIL**

NTS

34

CONFORMED SET



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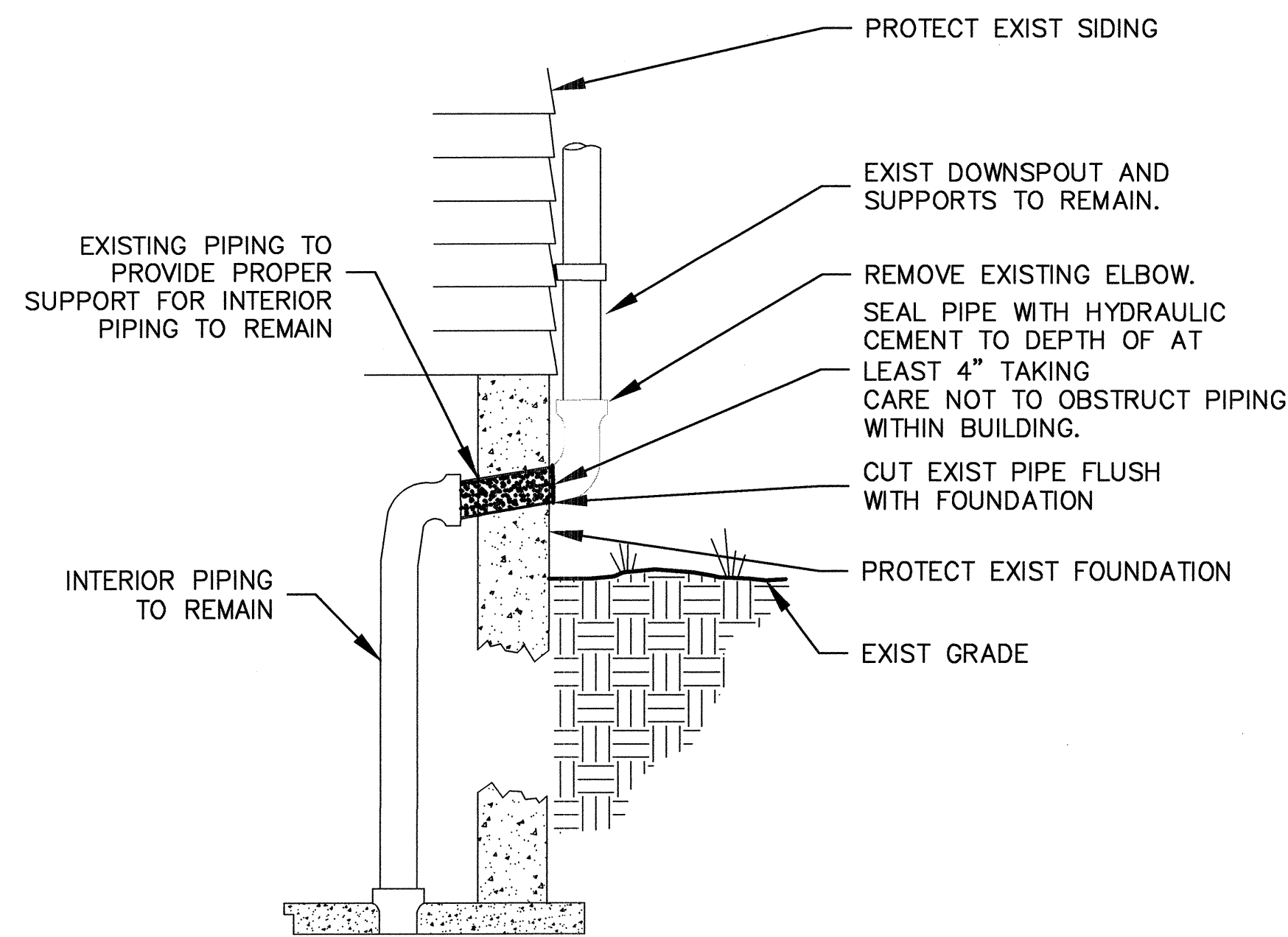


CITY OF CAMBRIDGE, MASSACHUSETTS
 HURON A SEWER SEPARATION PROJECT
 CONTRACT NO. 8A
 CIVIL GENERAL
 RECORD INFORMATION - LARCH ROAD

Sheet No.

CG-13

File No.



REMOVE ELBOW / PLUG OPEN ELBOW

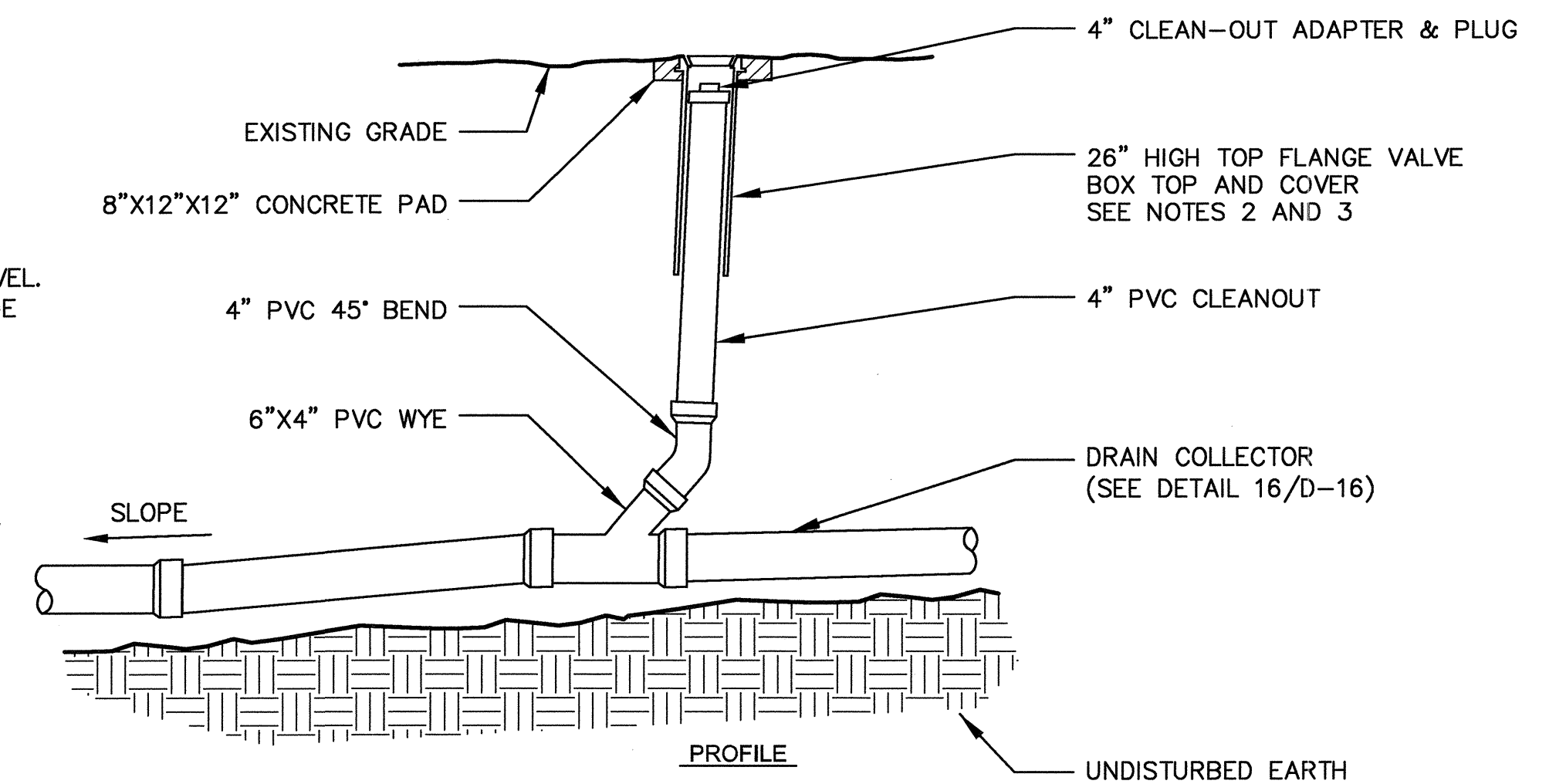
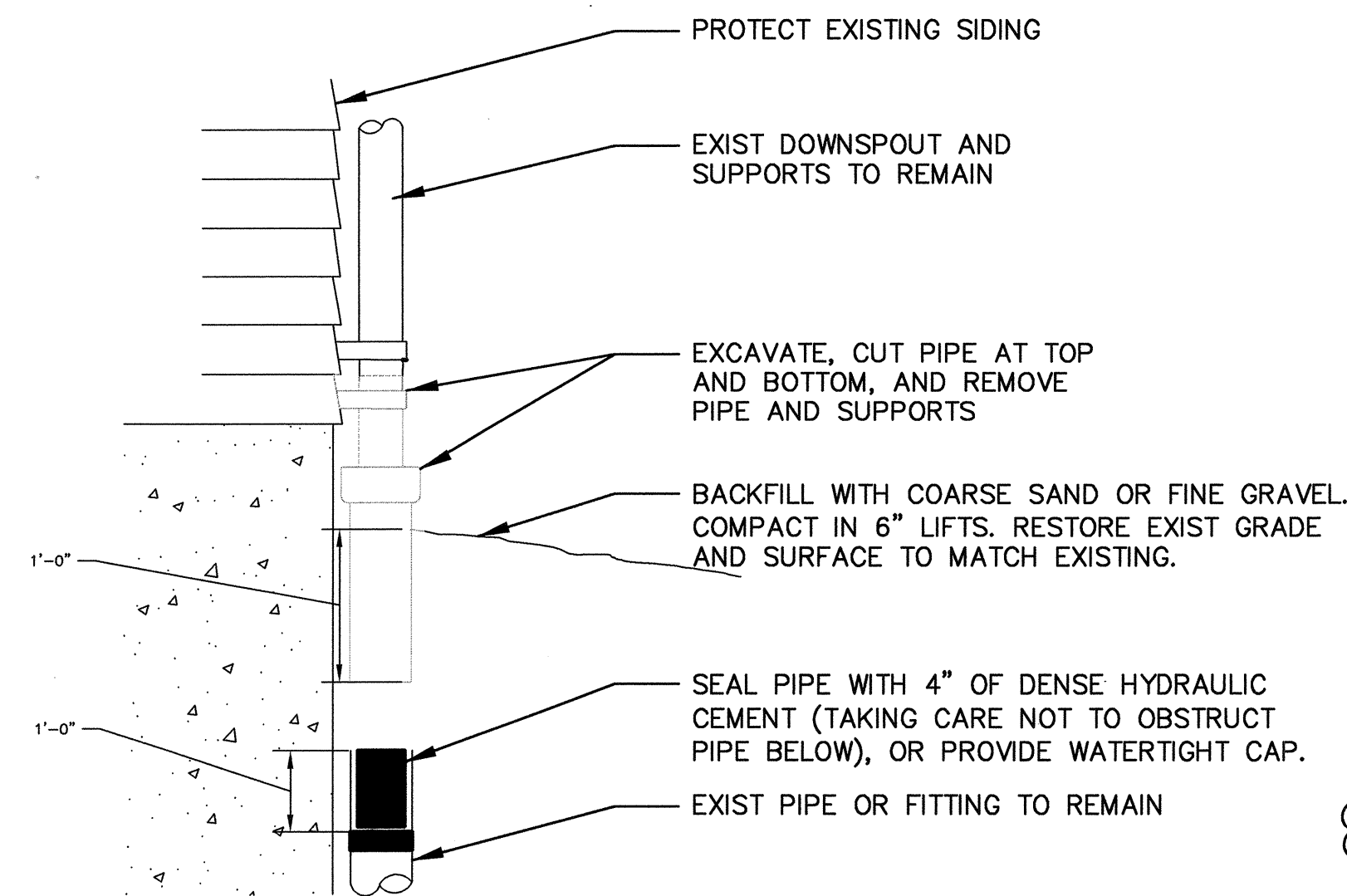
NTS

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ABANDON (UNDERGROUND) DOWNSPOUT CONNECTION

NTS

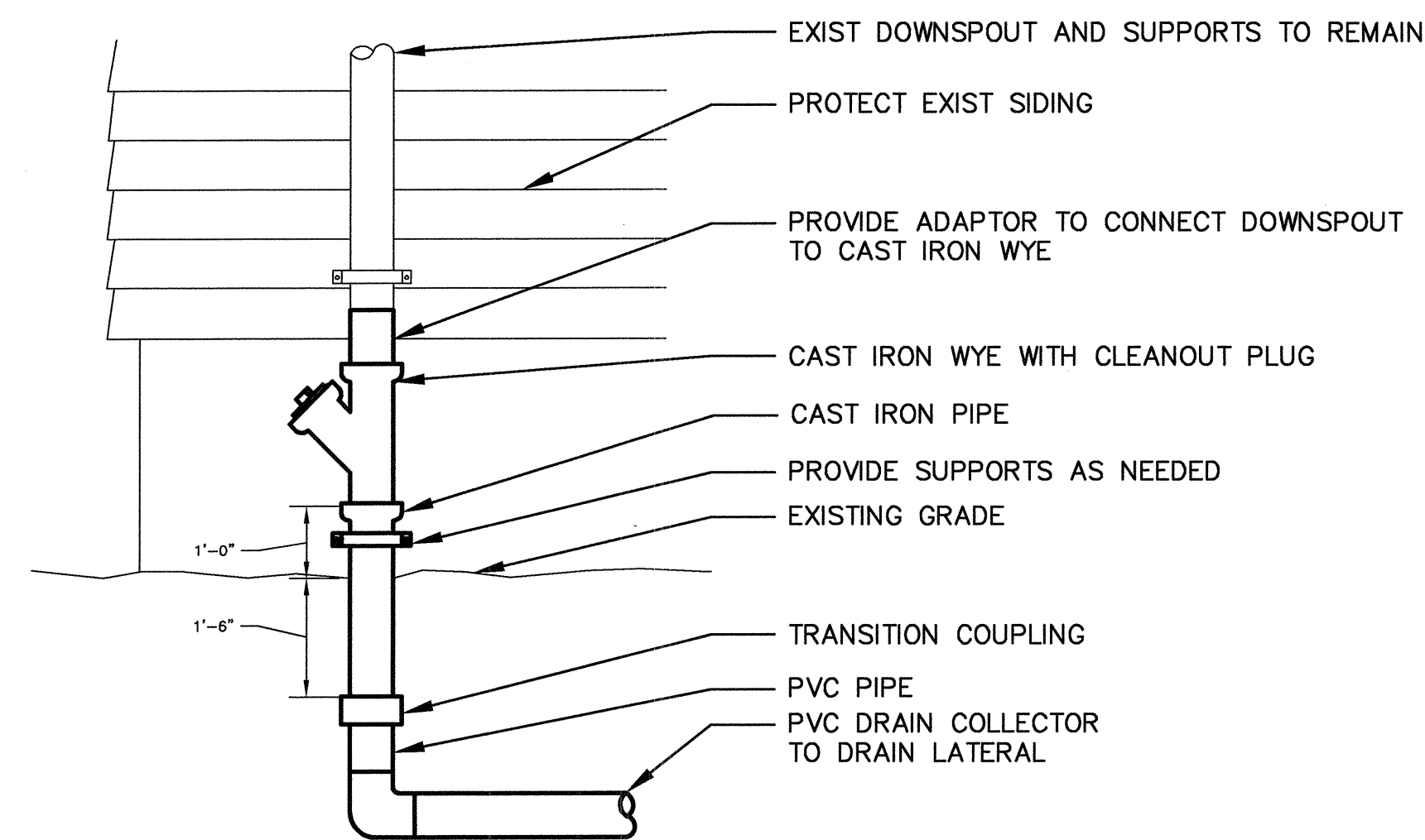
COARSE SAND OR FINE GRAVEL, COMPACTED IN 6-INCH LIFTS, TO AT LEAST 1 FOOT THICKNESS ALL AROUND PIPE, TO 8" FROM EXISTING GRADE



DRAIN COLLECTOR CLEAN-OUT

NTS

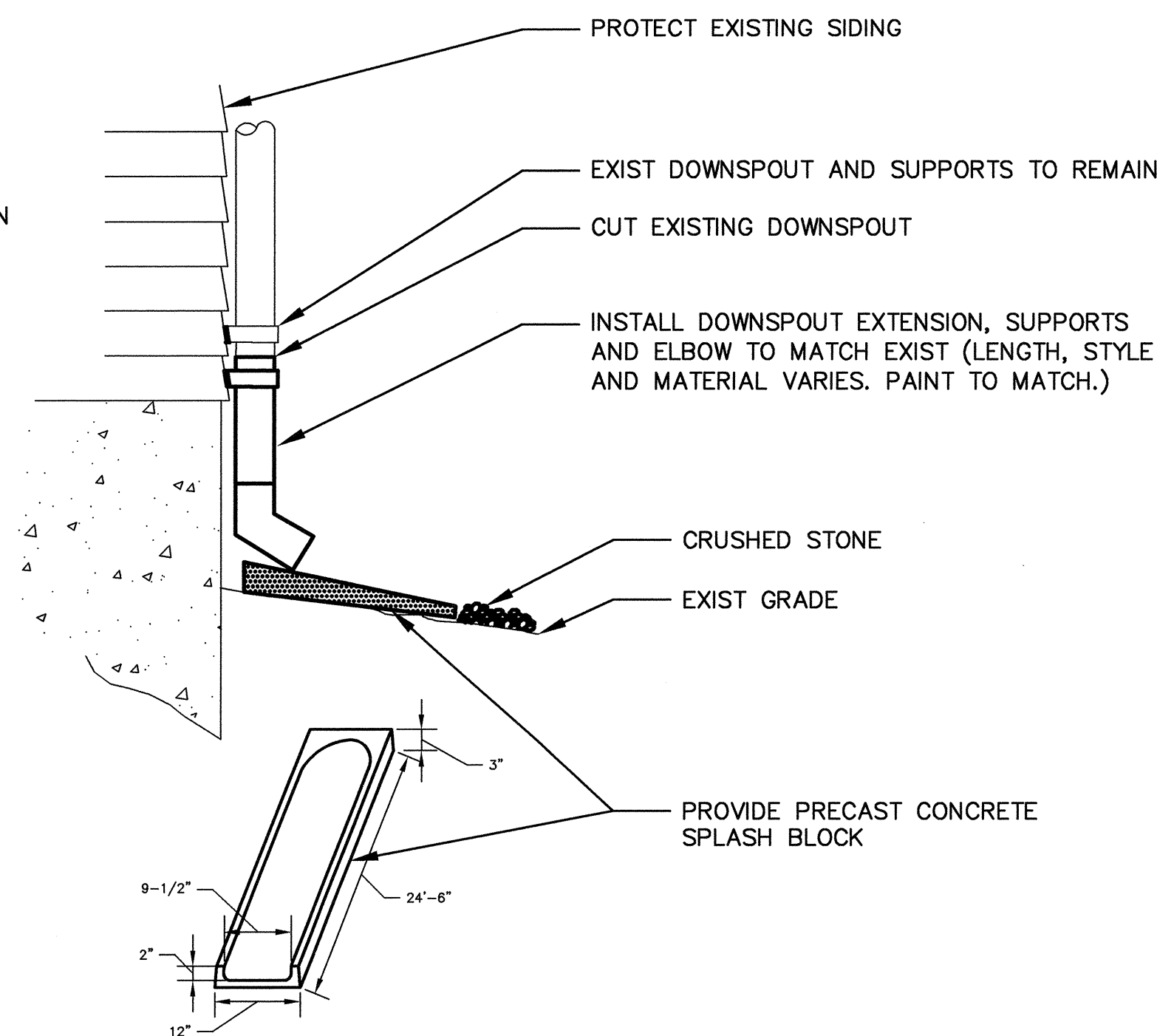
37



DOWN SPOUT TO DRAIN LATERAL

NTS

38

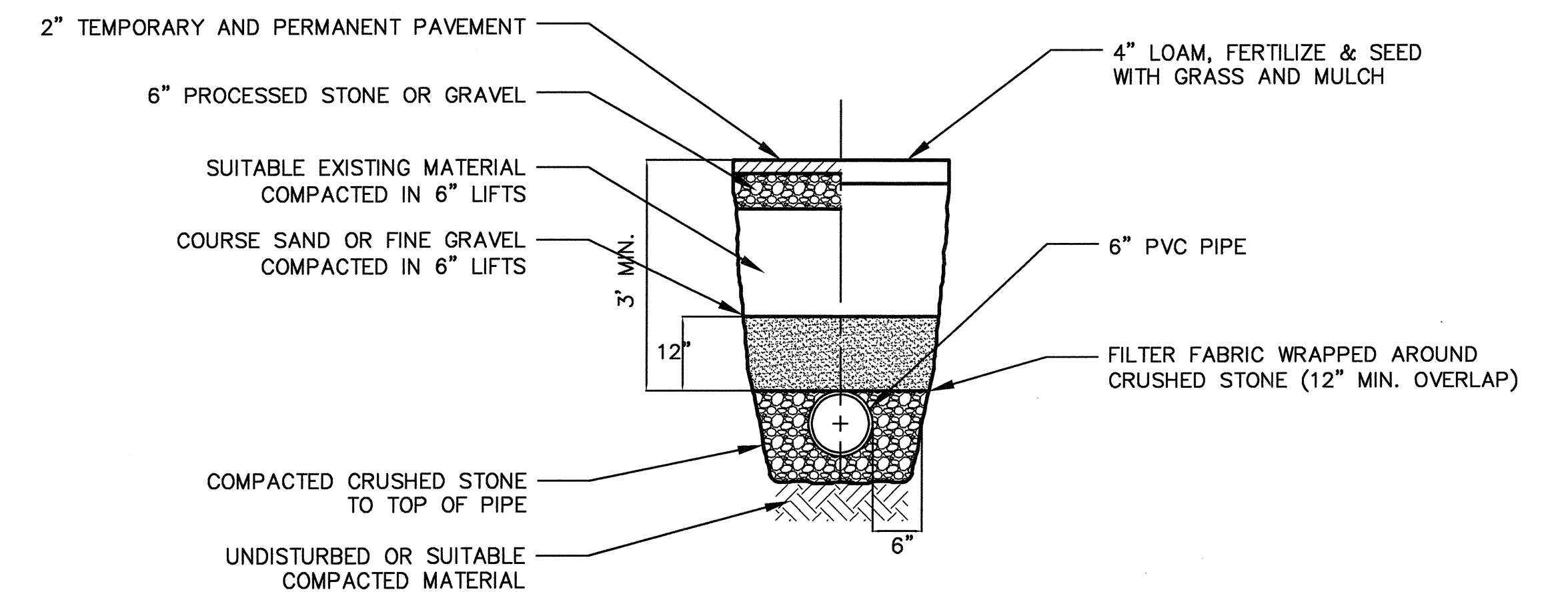


CUT DOWNSPOUT AND REDIRECT TO SPLASH PAD

NTS

39

- CLEANOUT NOTES:
- IF THE DISTANCE BETWEEN THE STORM DRAIN MAIN AND THE TERMINAL CLEANOUT ALONG THE LATERAL IS GREATER THAN 100 FEET, THEN A CLEANOUT IS TO BE INSTALLED AT APPROXIMATELY THE HALFWAY POINT AT A LOCATION APPROVED BY THE PROPERTY OWNER.
 - IF THE CLEANOUT IS TO BE LOCATED IN A LAWN AREA, THE TOP OF THE CLEANOUT CAN BE BURIED 6 INCHES BELOW THE SURFACE TO OFFER PROTECTION FROM DAMAGE.
 - IF THE CLEANOUT IS TO BE LOCATED IN A PAVED AREA, THE TOP OF THE CLEANOUT SHOULD BE PROTECTED BY A WELLHEAD COVER BOX (PREFERRED) OR A GATE BOX COVER.



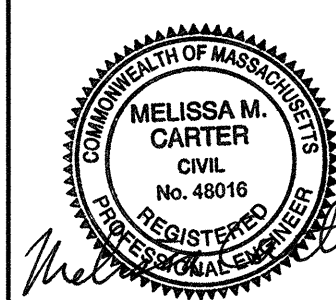
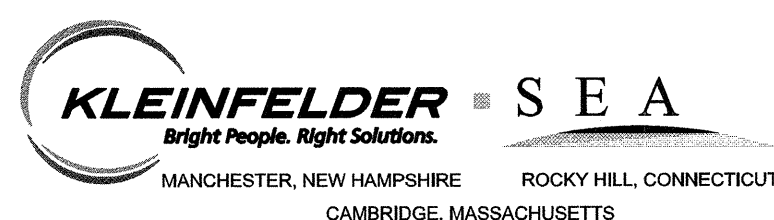
SANITARY AND DRAIN LATERAL TRENCH OUTSIDE ROAD RIGHT-OF-WAY

NTS

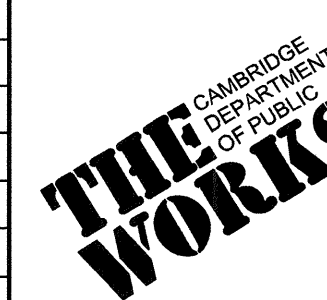
40

- NOTES:
- TEMPORARY PAVEMENT RESTORATION EXTENDS WIDTH OF TRENCH IN PAVED AREAS.
 - PERMANENT PAVEMENT RESTORATION EXTENDS WIDTH OF DRIVEWAY OR WALKWAY AS SHOWN ON PLANS.

CONFORMED SET



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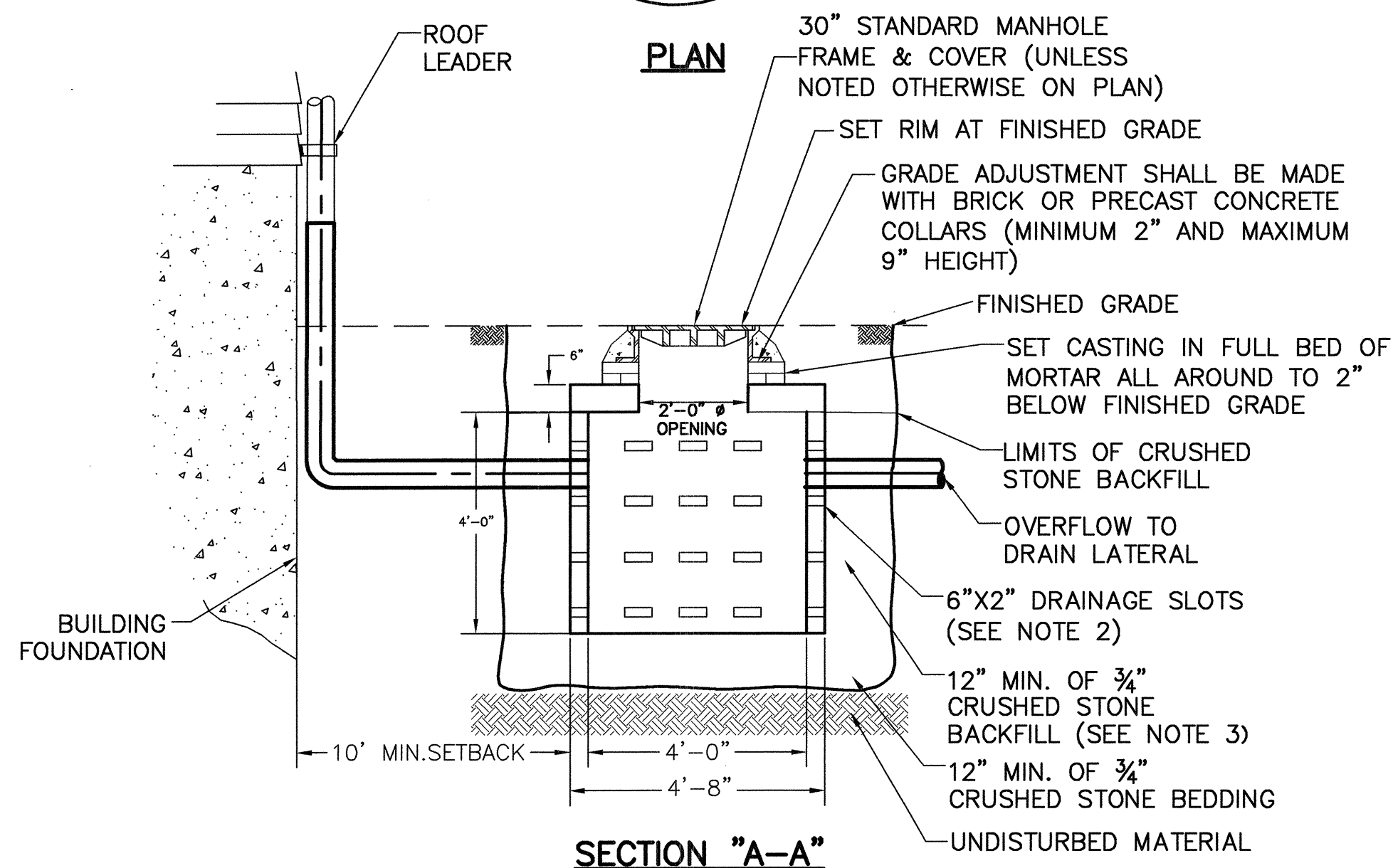
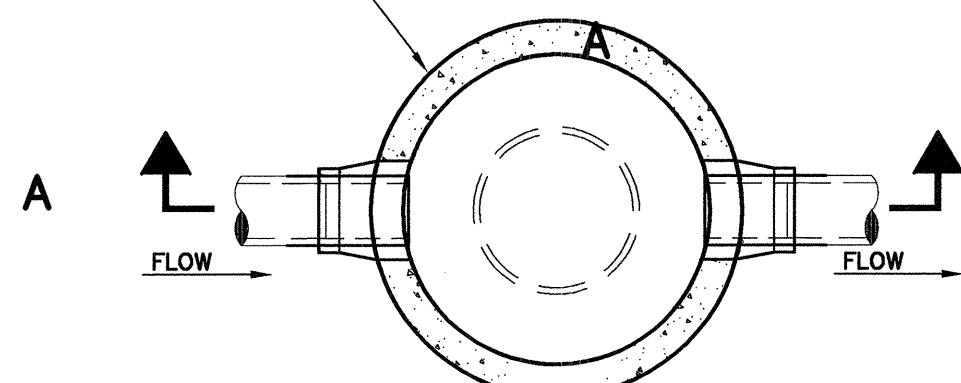
CITY OF CAMBRIDGE, MASSACHUSETTS
 HURON A SEWER SEPARATION PROJECT
 CONTRACT NO. 8A
 CIVIL GENERAL
 INFLOW REMOVAL DETAILS I

Sheet No.

CG-14

File No.

30" STANDARD MANHOLE
FRAME & COVER (UNLESS
NOTED OTHERWISE ON PLAN)



DRY WELL TO LATERAL OVERFLOW 41

DRY WELL NOTES:

1. PROVIDE MANUFACTURER SUPPLIED SUMPS AND OPENINGS WHERE SHOWN ON THE DRAWINGS.
2. DRAINAGE SLOTS SHALL BE COVERED WITH 1/4" MESH 23 GAGE GALVANIZED WIRE SCREEN.
3. PROVIDE FILTER FABRIC WRAP AROUND CRUSHED STONE BEDDING AND BACKFILL.
4. DURING EXCAVATION, CONFIRM GROUNDWATER LEVEL IS 3 FT (MIN) BELOW BOTTOM OF DRYWELL.

CUT EXIST ROOF LEADER AND CONNECT TO PROP HORIZONTAL DOWNSPOUT WITH TEE OR ELBOW (TYP.)

REMOVE EXISTING ROOF LEADER AND PROVIDE NEW DOWNSPOUT SIZED TO SCHEDULE

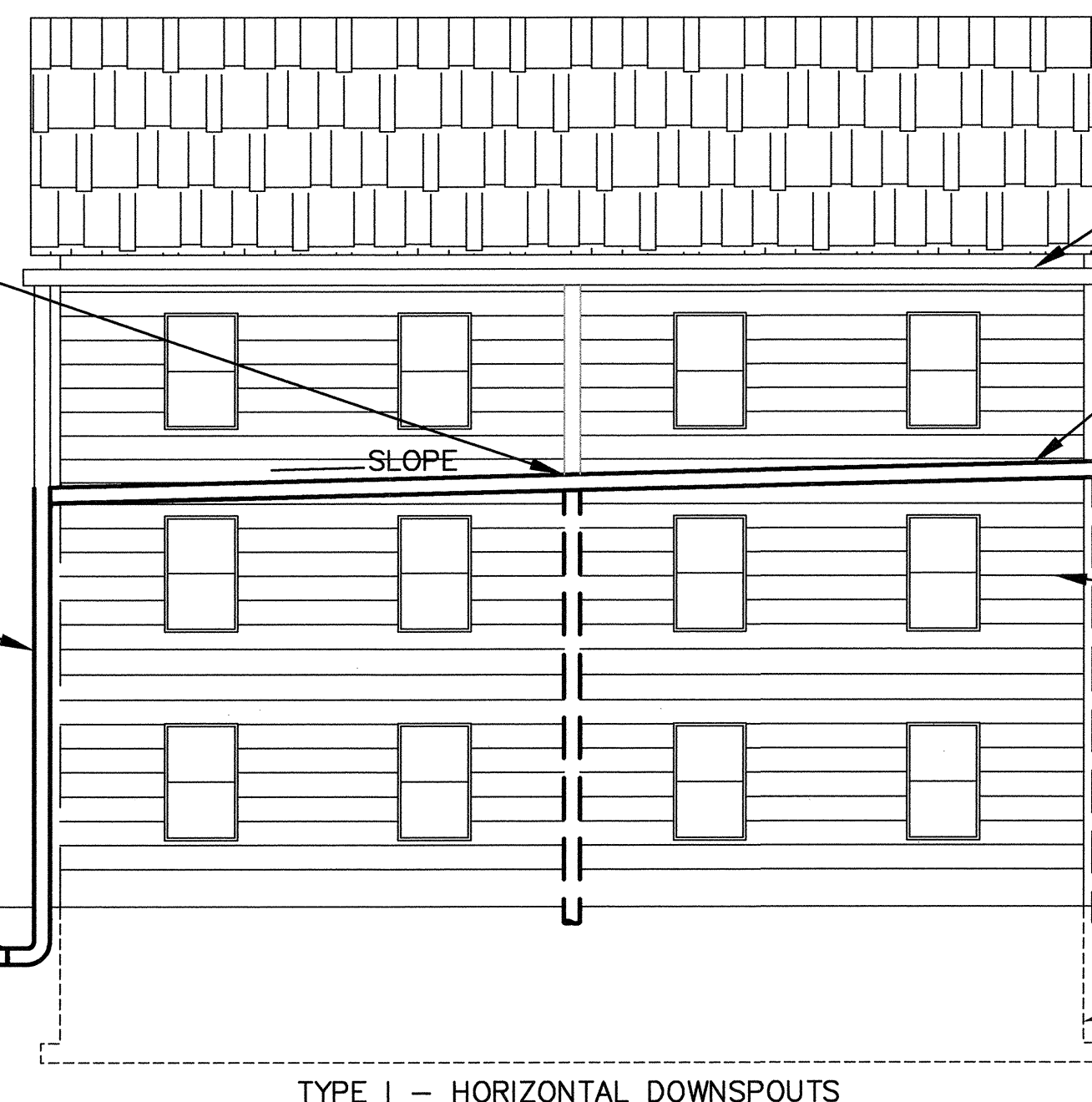
CONNECT ROOF LEADER TO DRAIN COLLECTOR (SEE DETAIL 12/D-15)

CONTRACTOR TO ASSUME MINIMAL CHANGES TO THE EXISTING EAVES IS INCLUDED

PROVIDE NEW GUTTER AND SUPPORTS (OR PROVIDE NEW SUPPORTS TO REINSTALL EXISTING GUTTER, IF SERVICABLE). SLOPE GUTTER AT 1/16" PER FOOT. SUPPORT AT LEAST EVERY 36 INCHES. PROVIDE EXPANSION JOINTS EVERY 40 FEET MAXIMUM SPACING. MAXIMUM LENGTH OF GUTTER FEEDING A SINGLE DOWNSPOUT SHALL BE 60 FEET.

REMOVE EXISTING ROOF LEADER AND PROVIDE NEW DOWNSPOUT SIZED TO SCHEDULE

CONNECT ROOF LEADER TO DRAIN COLLECTOR (SEE DETAIL 12/D-15)



TYPE I - HORIZONTAL DOWNSPOUTS

EXISTING GUTTER TO REMAIN

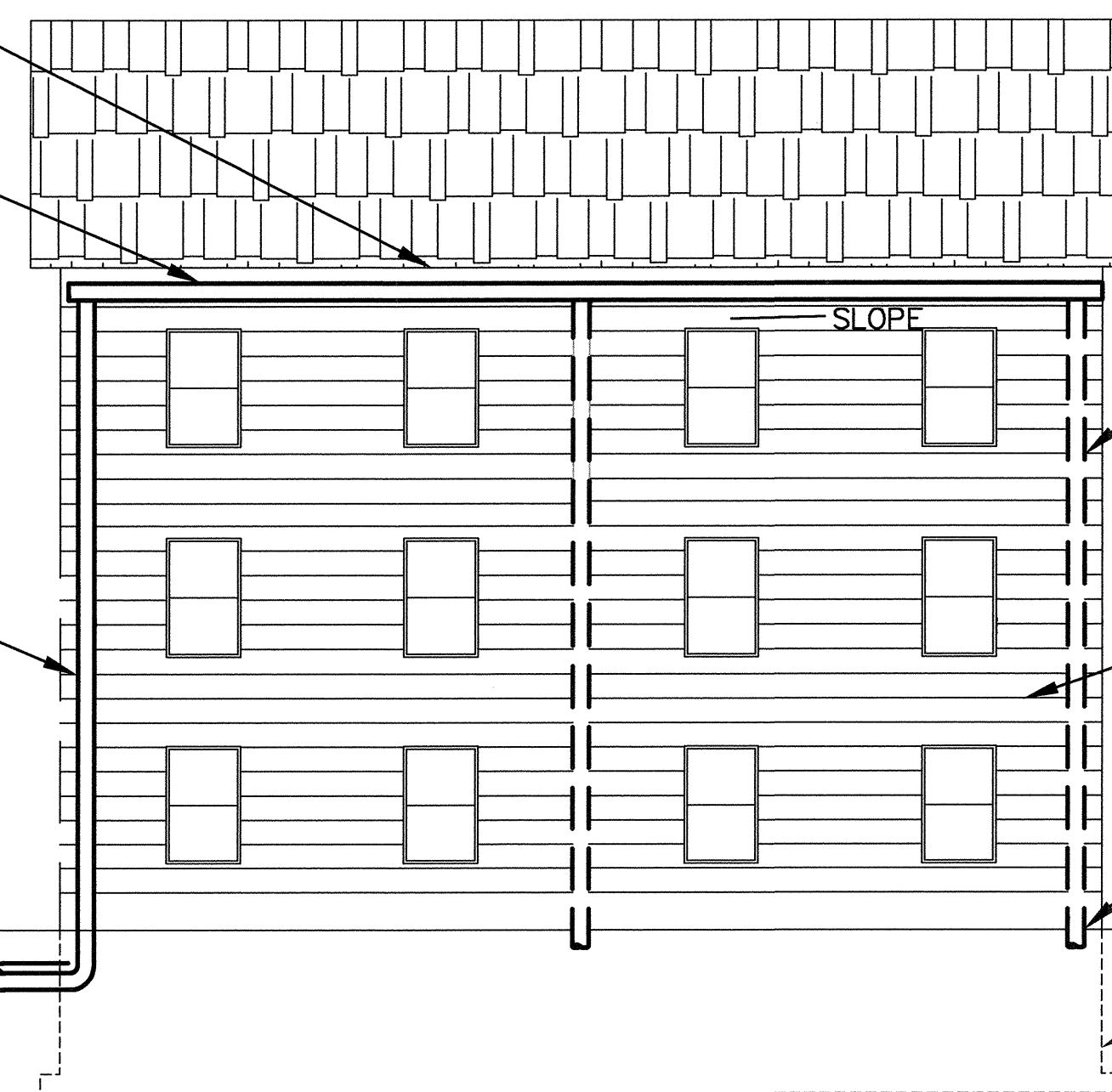
PROVIDE HORIZONTAL DOWNSPOUT TO REDIRECT FLOW. SUPPORT AT LEAST EVERY 36 INCHES. PROVIDE EXPANSION JOINTS EVERY 40 FEET MAXIMUM SPACING. MINIMUM SLOPE FOR HORIZONTAL DOWNSPOUT SHALL BE 1/4 INCH PER FOOT (2%). DO NOT BLOCK WINDOWS OR DOORS. HORIZONTAL DOWNSPOUT SHALL BE CONSTRUCTED OF CAST IRON IF INSTALLED WITHIN 3 FEET OF EXISTING GRADE. SEE SCHEDULE FOR SIZING.

PROTECT SIDING

REMOVE ROOF LEADER AND SUPPORTS BELOW PROP HORIZONTAL DOWNSPOUT (TYP.)

ABANDON ROOF LEADER PENETRATION (TYP.) SEE DETAIL 9/D-15 OR 10/D-15.

EXISTING FOUNDATION



TYPE II - REPITCHING GUTTER

REMOVE ROOF LEADER AND SUPPORTS (TYP.)

PROTECT SIDING

ABANDON ROOF LEADER PENETRATION (TYP.) SEE DETAIL 9/D-15 OR 10/D-15.

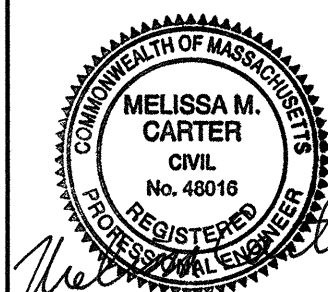
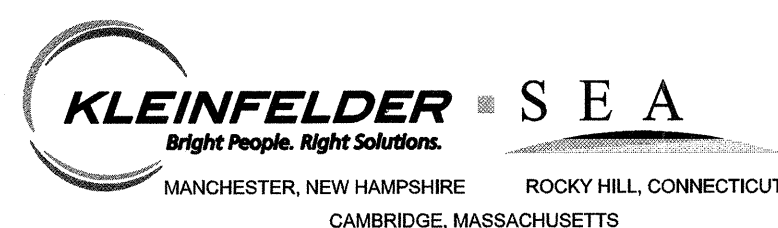
EXISTING FOUNDATION

GUTTER MODIFICATIONS 42

NOTE:
PROVIDE ALL MATERIALS VISIBLE ABOVE GROUND TO MATCH EXISTING, OR PAINT TO MATCH IF EXISTING MATERIALS ARE PAINTED. PROVIDE TOUCH-UP SEALANT TO SIDING TO RESTORE BUILDING APPEARANCE AFTER DEMOLITION ACTIVITIES.

DOWNSPOUT SCHEDULE		
NOMINAL SIZE (VERTICAL)	NOMINAL SIZE (HORIZ)	MAX HORIZ. ROOF AREA SERVED
2 X 3	2" X 3"	600 SF
3 X 4	2.5" X 3"	800 SF
3 X 4	3" X 4"	1400 SF

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CITY OF CAMBRIDGE, MASSACHUSETTS
HURON A SEWER SEPARATION PROJECT
CONTRACT NO. 8A
CIVIL GENERAL
INFLOW REMOVAL DETAILS II

Sheet No. **CG-15**
File No.