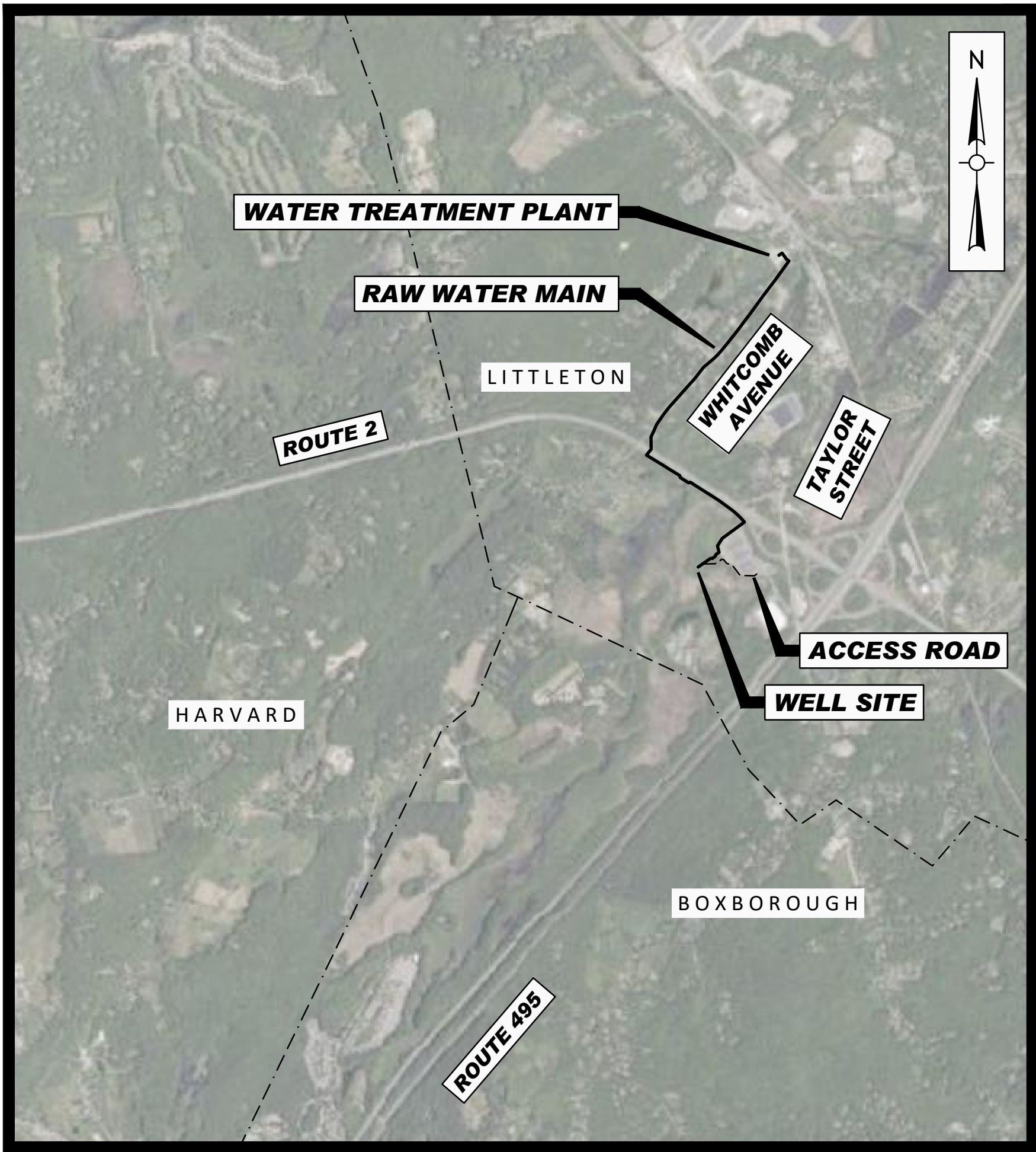


LITTLETON WATER DEPARTMENT



TRUMBULL WELL AND RAW WATER MAIN TOWN CONTRACT NO. IFB-2024 DWSRF NO. 12397 - CONTRACT NO.1 NICK LAWLER - GENERAL MANAGER DAVE KETCHEN - ASSISTANT GENERAL MANAGER COREY GODFREY - WATER SUPERINTENDENT

DRAWING INDEX	
SHEET	TITLE
G000	COVER AND SHEET LIST
G001	ABBREVIATIONS, NOTES, AND LEGEND
C101	RAW WATER PLAN WHITCOMB AVENUE
C102	RAW WATER PLAN WHITCOMB AVENUE
C103	RAW WATER PLAN CROSS COUNTRY
C104	ACCESS ROAD GRADING & DRAINAGE PLAN
C105	ACCESS ROAD GRADING & DRAINAGE PLAN
C201	BEAVER BROOK DIRECTIONAL DRILL
C501	DETAILS I
C502	DETAILS II
C503	DETAILS III
C504	DETAILS IV



LOCUS MAP
SCALE : 1"=2000'

Weston & Sampson
Weston & Sampson Engineers, Inc.
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Reading, MA 01867
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www.westonandsampson.com

Issued Date:
NOVEMBER 2023

811
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Call before you dig.



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\\w0131\all\IT\Projects\WMA\WMA001\000001.dwg - Plotting 10/2/2023 10:45:11 AM - Plotter: HP DesignJet 5000 Series, Plot Style: HP-GL/2, Plot Size: 36" x 48", Plot Scale: 1"=100', Plot Orientation: Landscape, Plot Date: 10/2/2023

LEGEND		
DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER	—S—	—S—
FORCE MAIN	---FM---	---FM---
WATER MAIN	---W---	---
TEMPORARY WATER		---TW---
STORM DRAIN	---D---	---D---
GAS	---G---	---G---
ELECTRIC	---E---	---E---
OVERHEAD WIRE	---OHW---	---OHW---
TELEPHONE	---T---	---T---
CABLE TELEVISION	---CATV---	---CATV---
GRINDER PUMP	○	● GP
SANITARY SEWER MANHOLE	⊙	● SMH
STORM DRAIN MANHOLE	⊙	● DMH
ELECTRICAL MANHOLE	⊙	● EMH
TELEPHONE MANHOLE	⊙	● TMH
AIR RELEASE VALVE MANHOLE	○	● ARMH
FORCE MAIN CLEANOUT MANHOLE	○	● FMCO
CLEANOUT	○	● CO
CATCH BASIN	□	■ CB
CATCH BASIN (CURB INLET)	⌘	
HYDRANT	⌘	⌘
TEMPORARY HYDRANT		⌘
GATE VALVE	⌘	⌘
CHECK VALVE	⌘	⌘
CURB STOP	⌘	⌘
BUTTERFLY VALVE	⌘	⌘
BALL VALVE	⌘	⌘
REDUCER	⌘	⌘
CAP OR PLUG	⌘	⌘
GAS GATE VALVE	⌘	⌘
UTILITY POLE	⌘	⌘
GUY POLE	⌘	⌘
LIGHT POST	☆	
EDGE OF PAVEMENT	=====	=====
EDGE OF UNPAVED ROAD	--- ---	--- ---
CURB	=====	=====
SIDEWALK	=====	=====
RAILROAD	+++++	+++++
STONE WALL	oooooo	oooooo
RETAINING WALL	===== RET WALL	===== RET WALL
FENCE	---X---X---	---X---X---
INDIVIDUAL DECIDUOUS TREE	☆	☆
INDIVIDUAL EVERGREEN TREE	✱	✱
TREE LINE	~~~~~	~~~~~
SURVEY MARKER	□	
PROPERTY LINE	—R—	
EASEMENT LINE	--- ---	--- ---
LIMIT OF WORK		--- . --- . ---
APPROX. LIMIT OF REFUSE	=====	=====
SPOT ELEVATIONS	x100.5	x100.5
CONTOUR LINES	---56---	---56---
DEPRESSION CONTOUR LINES		
HOUSE NUMBER	#35	
FLOOR ELEVATION	FL=56.7	
SILL ELEVATION	S=56.7	
WETLAND	↓ ↓ ↓	WF-7 WF-8
WETLAND FLAGS		WF-7 WF-8
RIP RAP	⊗⊗⊗⊗⊗⊗	⊗⊗⊗⊗⊗⊗
DRAINAGE DITCH / SWALE	=====	=====
STATE HIGHWAY STATION	10	
GUARD POST	△	▲
BOLLARD	○B	●B
SIGN	—	
BENCH MARK	⊙	
PERCOLATION TEST	⊙1	⊙ PT-1
TEST PIT	⊙1	⊙ TP-1
BORING	⊙ B-1	⊙ B-1
PROBE	⊙ P-1	⊙ P-1
GROUNDWATER MONITORING WELL	⊕ WS-1	⊕ WS-1
GAS MONITORING WELL	⊙ GMW-1	⊙ GMW-1
GAS VENT	○ GV	● GV
COMPOST FILTER TUBES		⊕ ⊕ ⊕ ⊕
ROCK OUTCROP	⊕⊕⊕⊕	

NOTE: ITEMS SHOWN IN THE LEGEND MAY NOT BE PRESENT IN THESE PLANS

ABBREVIATIONS

AC	ASBESTOS CEMENT PIPE
ACCOMP	ASPHALT COATED CORRUGATED METAL PIPE
ARV	AIR RELEASE VALVE
ASTM	ASTM INTERNATIONAL
BC	BITUMINOUS CONCRETE
BIT	BITUMINOUS
BLDG	BUILDING
BM	BENCH MARK
BO	BLOW OFF
BV	BUTTERFLY VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CC	CONCRETE CURB
CI	CAST IRON
€	CENTERLINE
CL	CEMENT LINED
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CU FT	CUBIC FEET
CY	CUBIC YARD
D	STORM DRAIN, DEPTH FROM RIM TO INVERT
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DMH	DRAIN MANHOLE
DWG	DRAWING
E	EAST, ELECTRIC
EA	EACH
EF	EACH FACE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FLG	FLANGE
FT	FEET, FOOT
G	NATURAL GAS
GALV	GALVANIZED
GC	GRANITE CURB
GR	GRANITE
HC	HOUSE CONNECTION
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HYD	FIRE HYDRANT
I	INVERT
INV	INVERT
ID	INSIDE DIAMETER
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
MAX	MAXIMUM
MB	MAIL BOX
MECH	MECHANICAL
MH	MANHOLE
MassDOT	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY
N	NORTH
NE	NORTH EAST
NW	NORTH WEST
NF	NOT FOUND
NO OR #	NUMBER
OD	OUTSIDE DIAMETER
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END, POLYETHYLENE
€	PROPERTY LINE
PL	PLATE
PVC	POLYVINYL CHLORIDE
PVCO	MOLECULARLY ORIENTED POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
RQD	ROCK QUALITY
S	SEWER, SOUTH
SE	SOUTH EAST
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SPEC	SPECIFICATIONS
SQ FT	SQUARE FEET
SS	SEWER SERVICE, STAINLESS STEEL
STA	STATION
STL	STEEL
SW	SIDEWALK, SOUTH WEST
T	HYDROSTATIC THRUST, TELEPHONE
TBM	TEMPORARY BENCH MARK
THK	THICK (NESS)
TYP	TYPICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY
VERT	VERTICAL
W	WATER, WEST
W/	WITH
W/O	WITHOUT

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AND CITY/TOWN DEPARTMENTS AS APPROPRIATE AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN.
3. TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER TO DETERMINE WHETHER TO RAISE OR LOWER THE PROPOSED WATER MAIN TO CLEAR EXISTING UTILITIES OR VERIFY EXISTING UTILITY LOCATION, SIZE AND TYPE.
4. STONE WALLS, FENCES, MAIL BOXES, SIGNS, CURBS, LIGHT POLES, ETC. SHALL BE REMOVED AS NECESSARY TO PERFORM THE WORK AND REPLACED TO A CONDITION AT LEAST EQUAL TO THAT BEFORE CONSTRUCTION BEGAN. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
5. ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
6. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
7. UNLESS OTHERWISE INDICATED, CONCRETE USED FOR PIPE ANCHOR BLOCKS, BACKING, PIPE CRADLES, ARCHES, AND FILL SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
8. APPROVED JOINT RESTRAINT METHODS SHALL BE PROVIDED FOR WATER MAINS WHERE ANY BENDS, TEES, PLUGS, OR WYES ARE INSTALLED. CONCRETE THRUST BLOCKS, ANCHOR BLOCKS AND TIE RODS MAY BE USED FOR 6-INCH AND 8-INCH PIPE WHERE JOINT RESTRAINT IS NOT FEASIBLE UPON APPROVAL OF THE ENGINEER. SEE TABLE 1 DETAIL FOR REQUIRED RESTRAINING LENGTHS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. THE CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS.
10. NEW WATER MAINS AND SERVICES SHALL BE INSTALLED AT THE MINIMUM DEPTH FROM FINISH GRADE TO TOP OF PIPE AS SHOWN ON THE DRAWINGS. WHERE NECESSARY, NEW WATER MAINS SHALL BE INSTALLED AT A GREATER DEPTH TO CLEAR OBSTACLES SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. MINIMUM CLEARANCES TO UTILITIES, AS SHOWN ON THE DRAWINGS SHALL BE MAINTAINED.
11. EXISTING SERVICES SHALL NOT BE CONNECTED TO THE PROPOSED WATER MAIN UNTIL THAT MAIN HAS PASSED PRESSURE TEST AND DISINFECTION REQUIREMENTS.
12. EXISTING WATER MAINS OR SERVICES SHALL NOT BE ABANDONED WITHOUT THE APPROVAL OF THE OWNER. WATER SERVICE SHALL NOT BE INTERRUPTED MORE THAN 4 HOURS WITHOUT PRIOR APPROVAL OF THE OWNER.
13. ALL HYDRANTS REMOVED SHALL BE SALVAGED AND DELIVERED TO A LOCATION TO BE DETERMINED BY THE OWNER. SURFACE RESTORATION SHALL BE IN KIND UNLESS OTHERWISE NOTED.
14. ANY HYDRANT WHICH IS NOT IN SERVICE SHALL BE COVERED WITH A SECURELY FASTENED AND APPROVED BAG.

15. THE LOCATION OF PIPES, CAPS, REDUCERS, BENDS, AND OTHER FITTINGS AT POINTS OF CONNECTIONS TO EXISTING MAINS IS APPROXIMATE. CONTRACTOR SHALL DIG A TEST PIT AT EACH LOCATION TO DETERMINE THE DIAMETER AND MATERIAL OF THE EXISTING PIPE AND THE LOCATION OF THE TIE-IN POINT.
16. ALL CATCH BASINS WITHIN PROJECT LIMITS SHALL BE PROTECTED AS SHOWN ON DETAIL SHEET.
17. THE CONTRACTOR SHALL NOTIFY THE MassDOT DISTRICT PERMITS ENGINEER AT 857-368-3000 TWO (2) DAYS PRIOR TO THE START OF WORK IN A STATE ROADWAY.
18. ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING. COVERING WITH STEEL PLATES MAY BE ALLOWED IF APPROVED BY THE ENGINEER.
19. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION AND SAFETY REQUIREMENTS, TO PREVENT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES.
20. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 72 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY IN WRITING 48 HOURS IN ADVANCE, ANY OCCUPANT THAT WILL BE WITHOUT WATER DUE TO A SHUTDOWN.
21. SOME WATER SERVICE CONNECTIONS MAY NOT BE SHOWN ON THE DRAWINGS. THE OWNER WILL MARK THE LOCATION OF SUCH CONNECTIONS, PROVIDED THE CONTRACTOR GIVES THE OWNER AT LEAST 72 HOURS ADVANCE NOTICE.
22. ALL NEW WATER SERVICES SHALL BE THE SAME SIZE AS THE EXISTING WATER SERVICE, EXCEPT THAT NO SERVICE SHALL BE LESS THAN 1" DIAMETER. COORDINATE THIS WORK WITH THE WATER DEPARTMENT.
23. ELEVATIONS REFERENCED ARE NAD83 MASSACHUSETTS STATE PLANES, MAINLAND ZONE, US FOOT.
24. EXISTING UTILITY INFORMATION, TOPOGRAPHIC INFORMATION, EDGE OF PAVEMENT, UTILITY POLE LOCATIONS, AND LOCATIONS OF EXISTING ABOVE GROUND STRUCTURES WERE TAKEN FROM PLANS PREPARED BY BEALS AND THOMAS, INC., KELLY ENGINEERING GROUP, GIS DATA, AND GROUND SURVEY CONDUCTED BY WESTON & SAMPSON.
25. ASSESSORS INFORMATION REPRESENTED ON THESE DRAWINGS IS TAKEN FROM THE CITY/TOWN ASSESSOR'S PARCEL MAPS, MASS GIS DATA AND IS INCLUDED FOR ILLUSTRATIVE PURPOSES ONLY. ASSESSORS INFORMATION IS NOT INTENDED TO BE AN AUTHORITATIVE RECORD OF PROPERTY BOUNDARIES OR A SOURCE OF INFORMATION FOR AN ACTUAL SURVEY OR LEGAL DESCRIPTION OF THE PROPERTY. NO WORK HAS BEEN PERFORMED TO DETERMINE THE DEPICTED PROPERTY LINES AND THEREFORE, THESE DRAWINGS ARE NOT INTENDED BE USED TO DELINEATE ANY EXISTING OR PROPOSED STRUCTURES, FEATURES OR BOUNDARIES RELATIVE TO PROPERTY LINES. AUTHORITATIVE RECORDS OF PROPERTY LINES MAY BE LOCATED AT THE STATE OR MUNICIPAL AGENCY RESPONSIBLE FOR MAINTAINING PUBLIC RECORDS IN WHICH THE PARCEL IS LOCATED. LEGALLY AUTHORITATIVE MAPS OF PROPERTY LINES MAY ONLY BE PRODUCED BY A PROFESSIONAL LAND SURVEYOR.

Project:

LITTLETON WATER DEPARTMENT



TRUMBULL WELL AND RAW WATER MAIN

TOWN CONTRACT NO. IFB-2024

DWSRF NO. 12397

CONTRACT NO.1



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GJK/RWS

Reviewed By:

SBR

Approved By:

TEM

W&S Project No.:

ENG23-0679

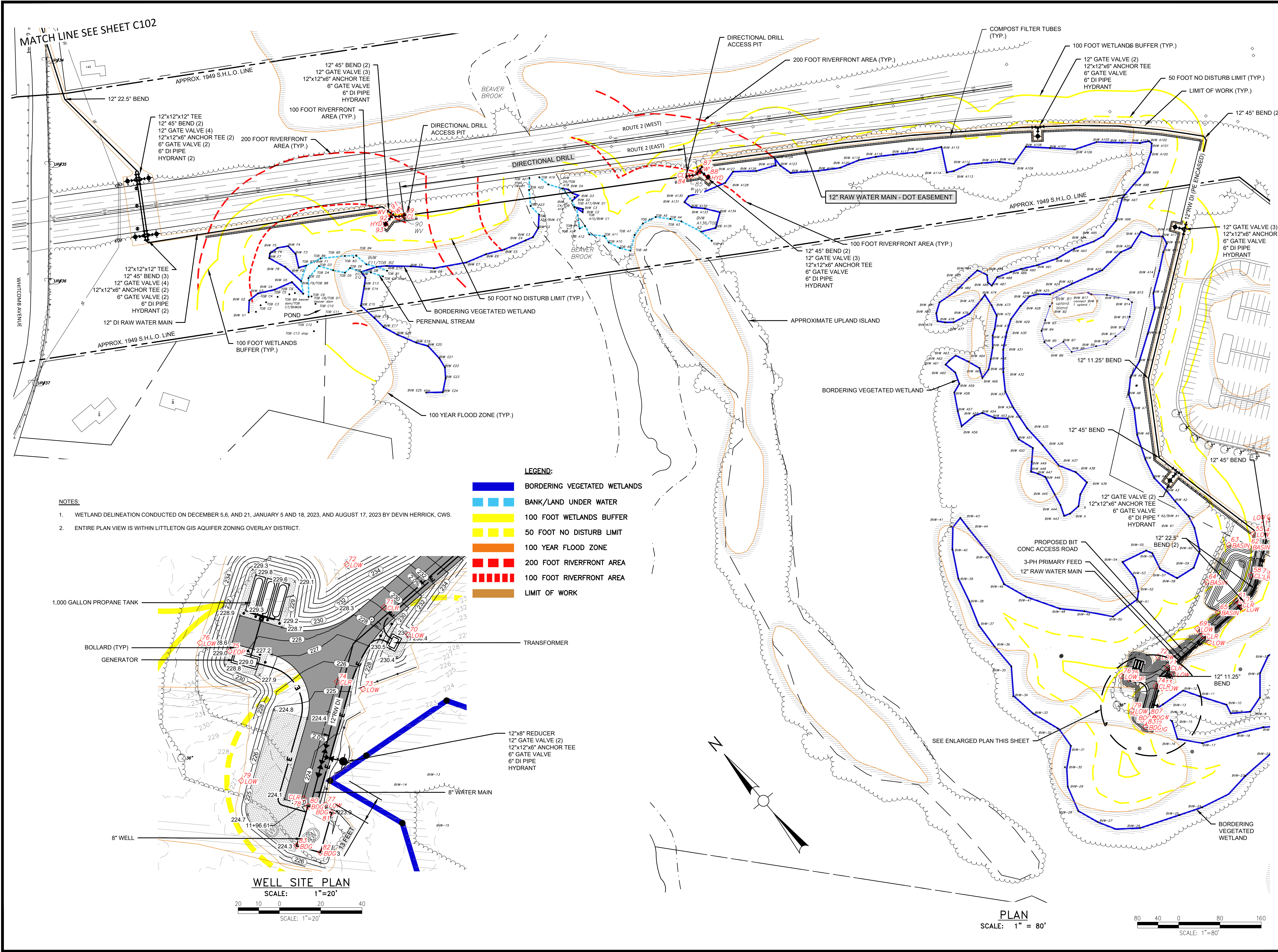
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Drawing Title:

ABBREVIATIONS, NOTES, & LEGEND

Sheet Number:

G001



Project:

LITTLETON WATER DEPARTMENT

LITTLETON

LELWD

ELECTRIC, GAS & WATER ESTABLISHMENTS

TRUMBULL WELL AND RAW WATER MAIN
TOWN CONTRACT NO. IFB-2024
DWSRF NO. 12397
CONTRACT NO.1

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TEM

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ENG23-0679

W&S File No.:

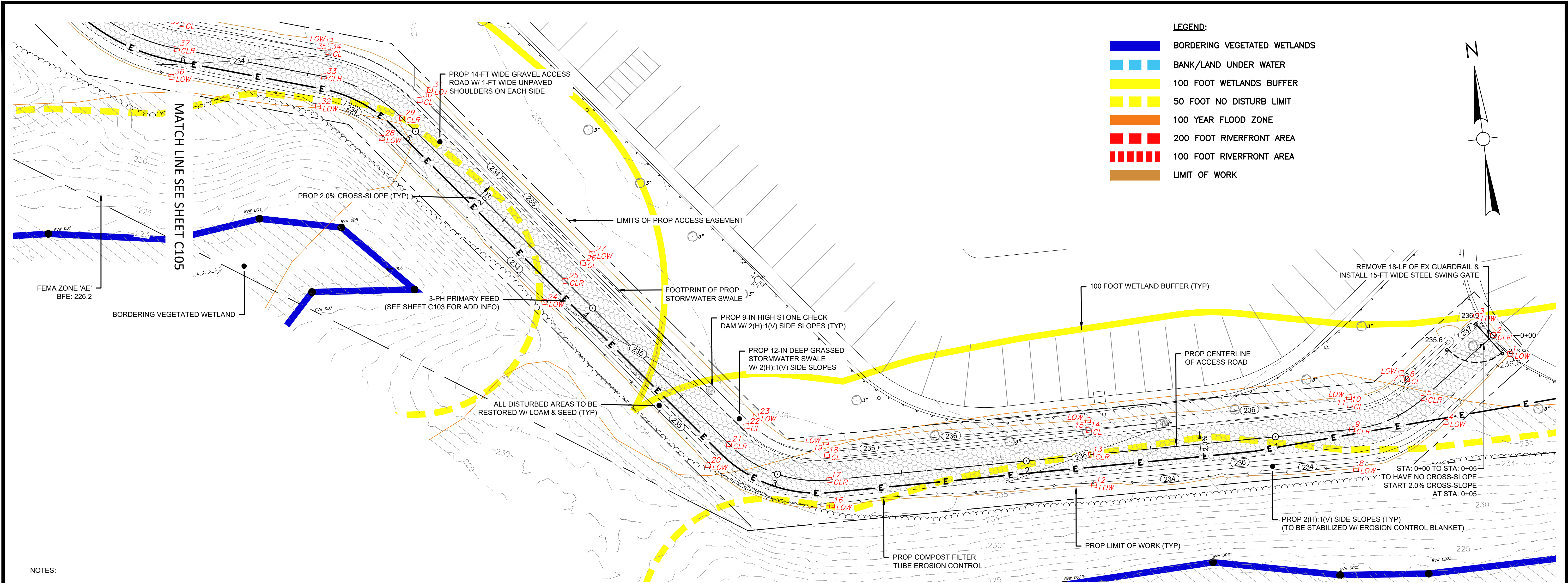
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RAW WATER PLAN CROSS COUNTRY

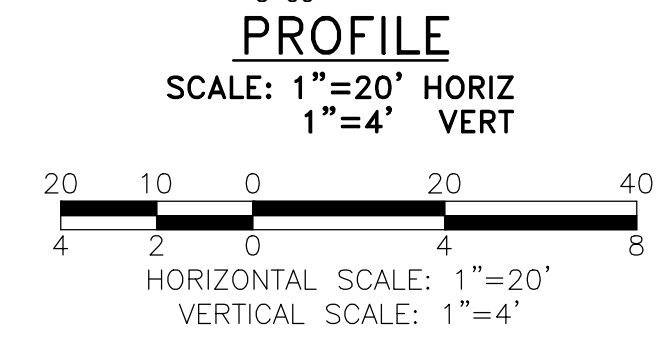
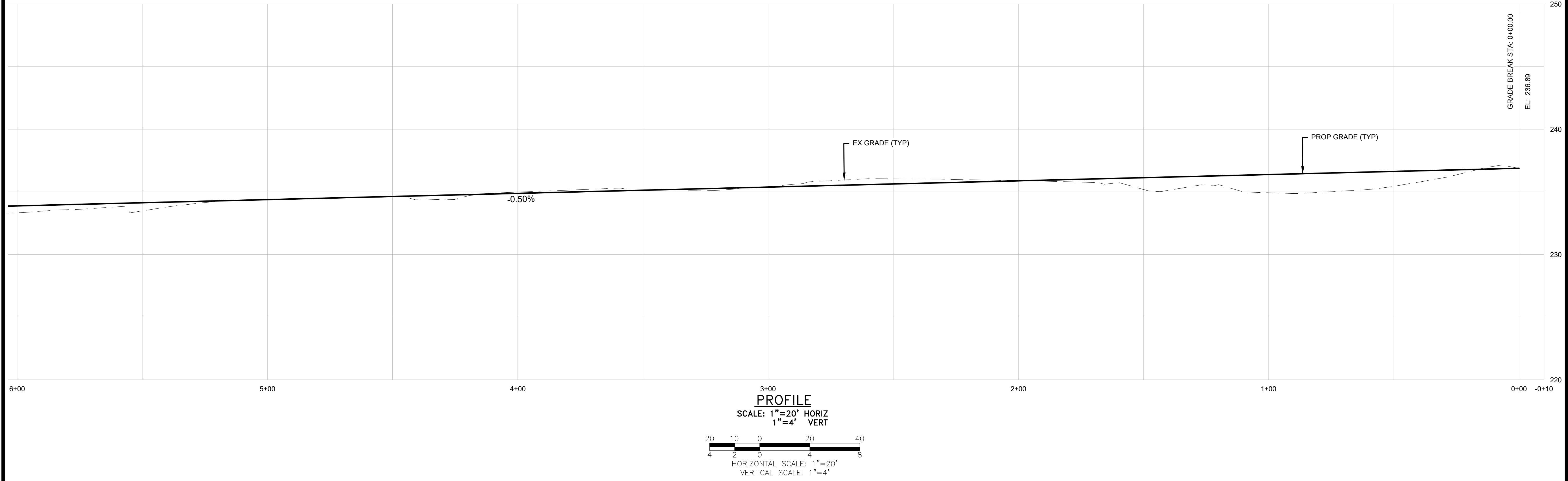
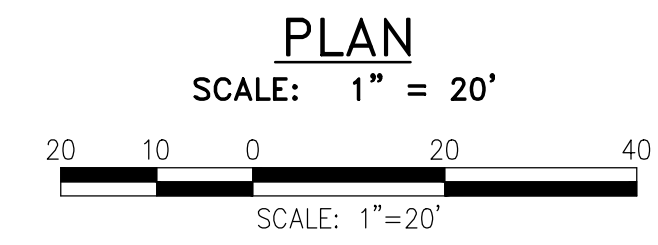
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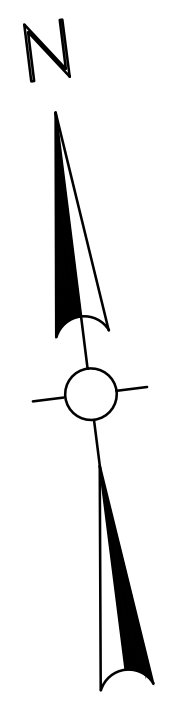
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- NOTES:
1. WETLAND DELINEATION CONDUCTED ON DECEMBER 5, 6, AND 21, JANUARY 5 AND 18, 2023, AND AUGUST 17, 2023 BY DEVIN HERRICK, CWS.
 2. ENTIRE PLAN VIEW IS WITHIN LITTLETON GIS AQUIFER ZONING OVERLAY DISTRICT.



- LEGEND:
- BORDERING VEGETATED WETLANDS
 - BANK/LAND UNDER WATER
 - 100 FOOT WETLANDS BUFFER
 - 50 FOOT NO DISTURB LIMIT
 - 100 YEAR FLOOD ZONE
 - 200 FOOT RIVERFRONT AREA
 - 100 FOOT RIVERFRONT AREA
 - LIMIT OF WORK



Project:
LITTLETON WATER DEPARTMENT
LITTLETON LELWD
ELECTRIC, LIQUID & WATER DEPARTMENTS
TRUMBULL WELL AND RAW WATER MAIN
TOWN CONTRACT NO. IFB-2024
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REGISTERED PROFESSIONAL ENGINEER

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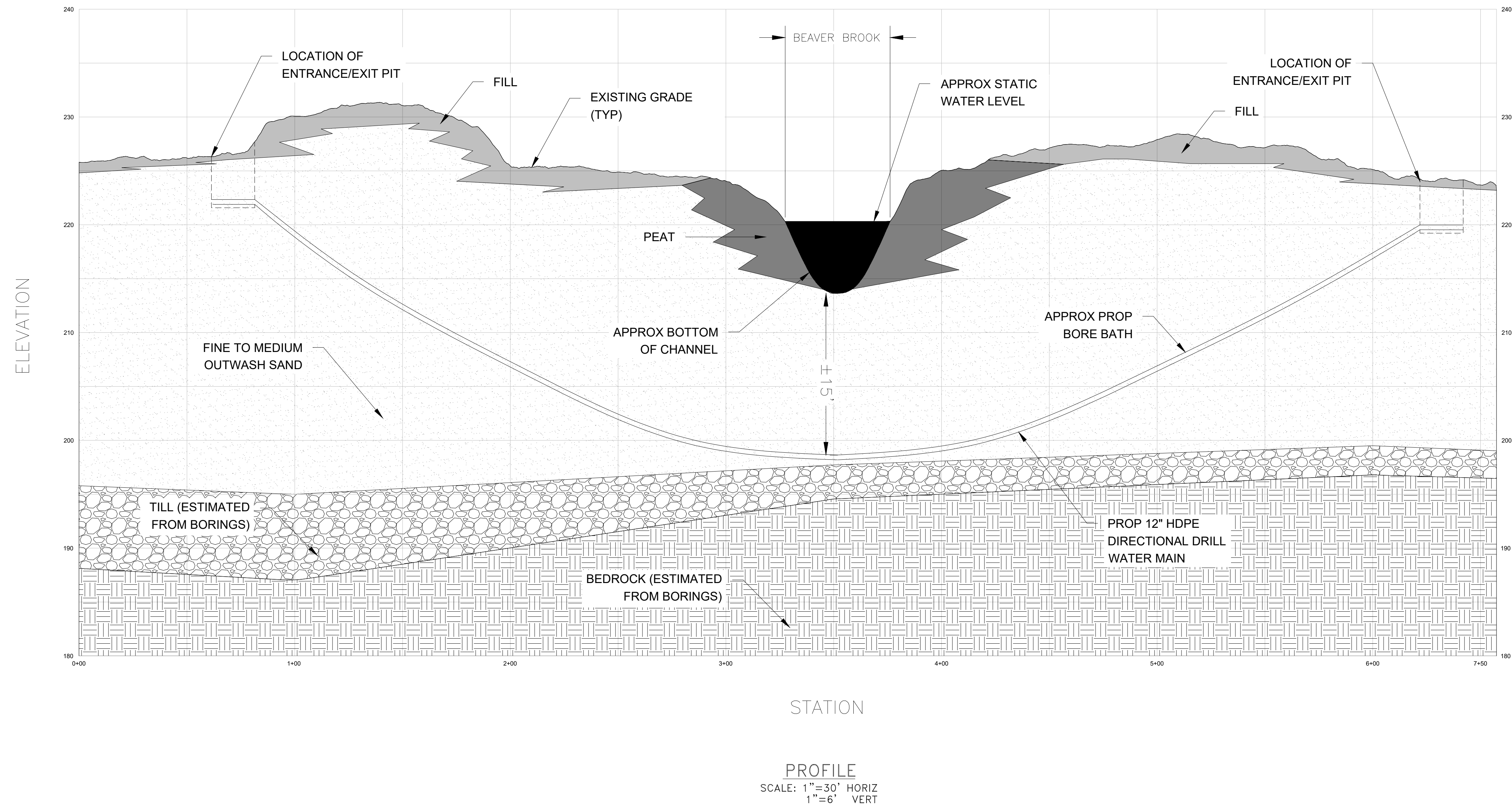
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Approved By: TEM
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W&S File No.:

Drawing Title:
ACCESS ROAD GRADING & DRAINAGE PLAN

Sheet Number:
C104

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Project: **LITTLETON WATER
DEPARTMENT**

**LITTLETON
LELWD**
ELECTRIC LIGHT & WATER DEPARTMENTS

**TRUMBULL WELL AND
RAW WATER MAIN
TOWN CONTRACT NO. IFB-20
DWSRF NO. 12397
CONTRACT NO.1**

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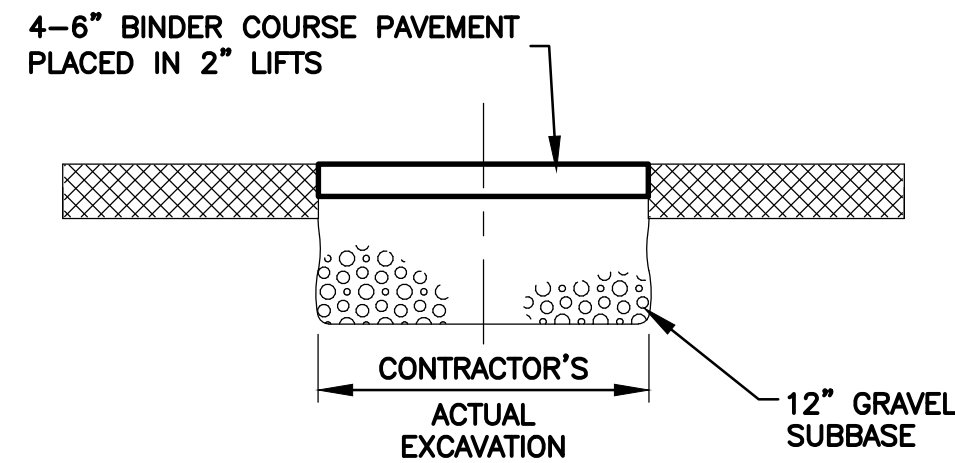
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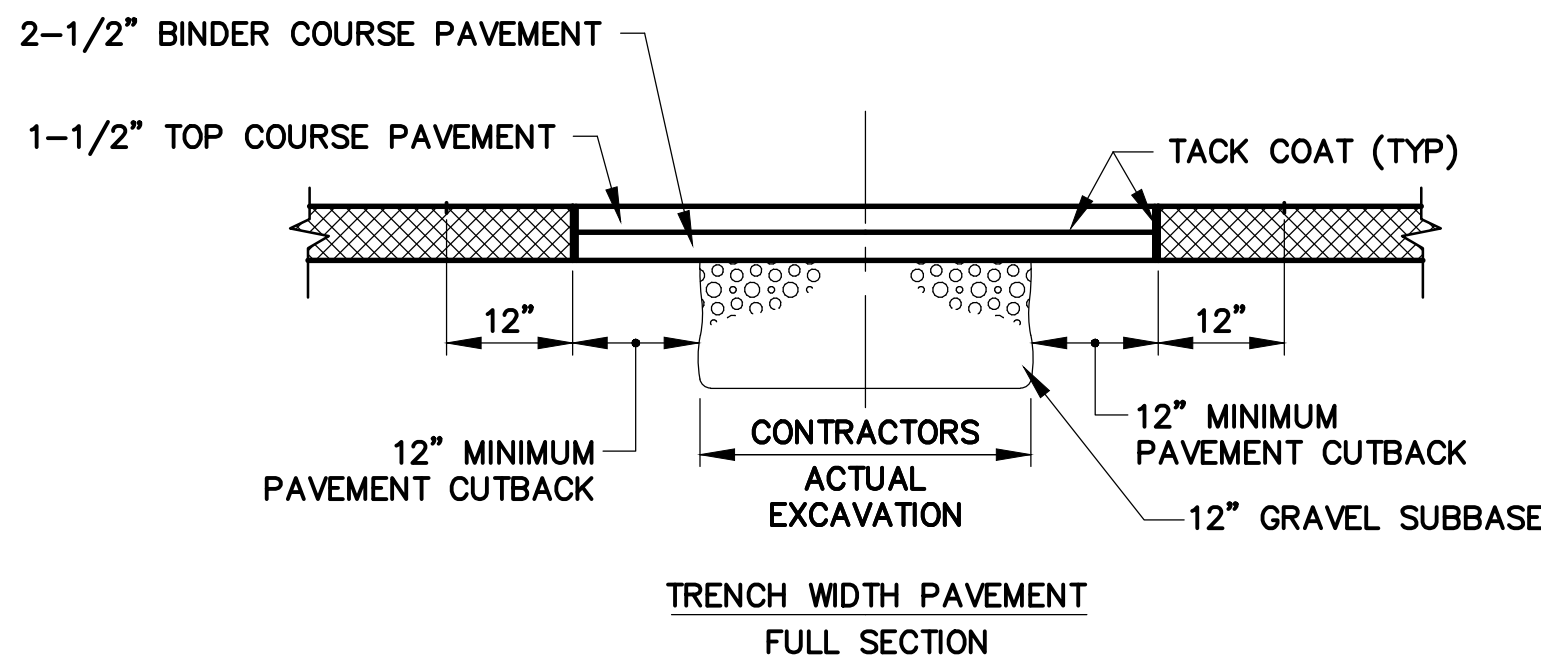
BEAVER BROOK
DIRECTIONAL DRILL

Sheet Number:

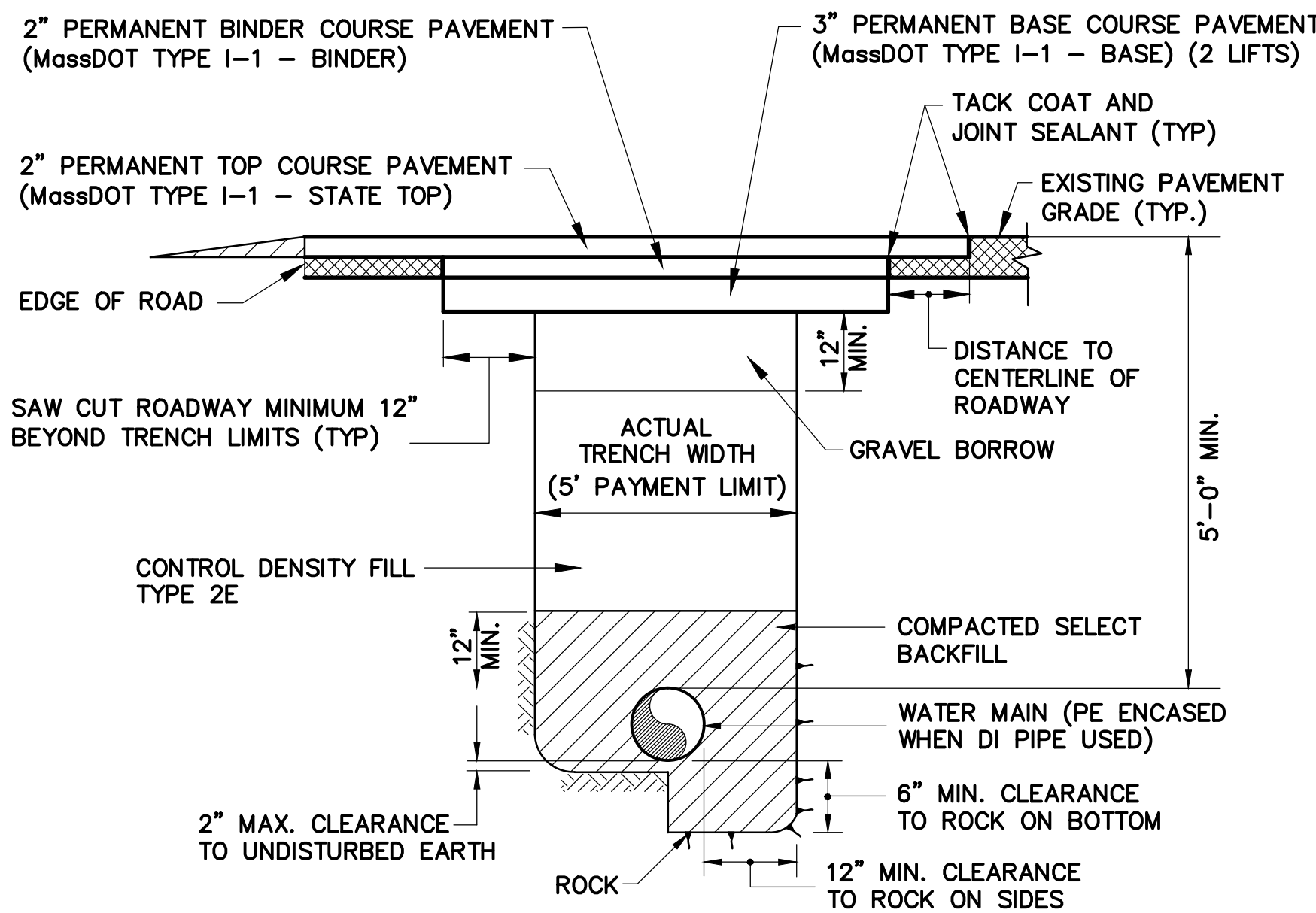
C201



TEMPORARY TRENCH PAVEMENT
N.T.S.



PERMANENT PAVEMENT REPLACEMENT DETAIL
N.T.S.

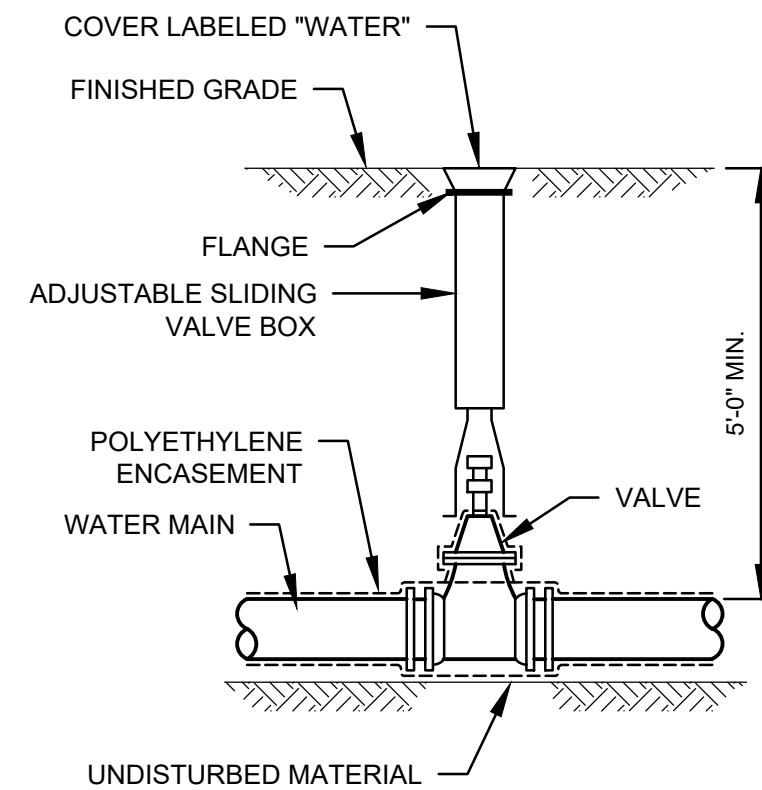


TYPE 3 AND TYPE 4
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MassDOT)
PERMANENT TRENCH PAVEMENT AND WATER MAIN TRENCH
N.T.S.

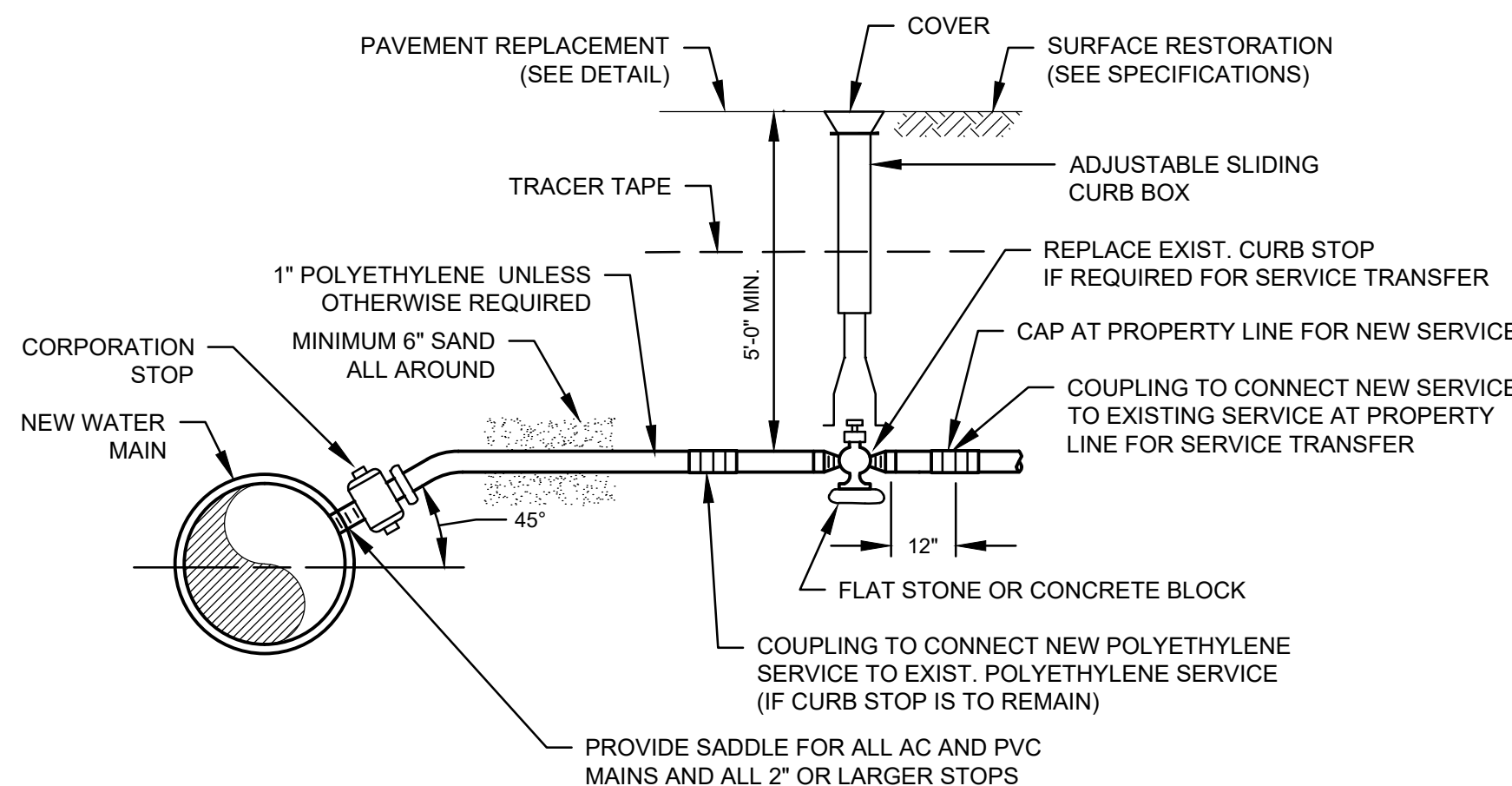
NOTES:

- SEE SECTION 32 11 00, PAVING FOR PAVEMENT SCHEDULE.
- FOR ALL TRENCH PAVEMENTS, CONTRACTOR SHALL INSTALL ASPHALT EMULSION TACK COAT TO ALL SUBSURFACES AND VERTICAL SAW CUTS PRIOR TO INSTALLATION OF PERMANENT PAVEMENT.
- PAVEMENT SHALL BE INSTALLED FLUSH WITH EXISTING GRADE BEFORE WINTER SHUTDOWN.
- TOP LAYER OF PAVEMENT SHALL BE INSTALLED BY MECHANICAL MEANS.

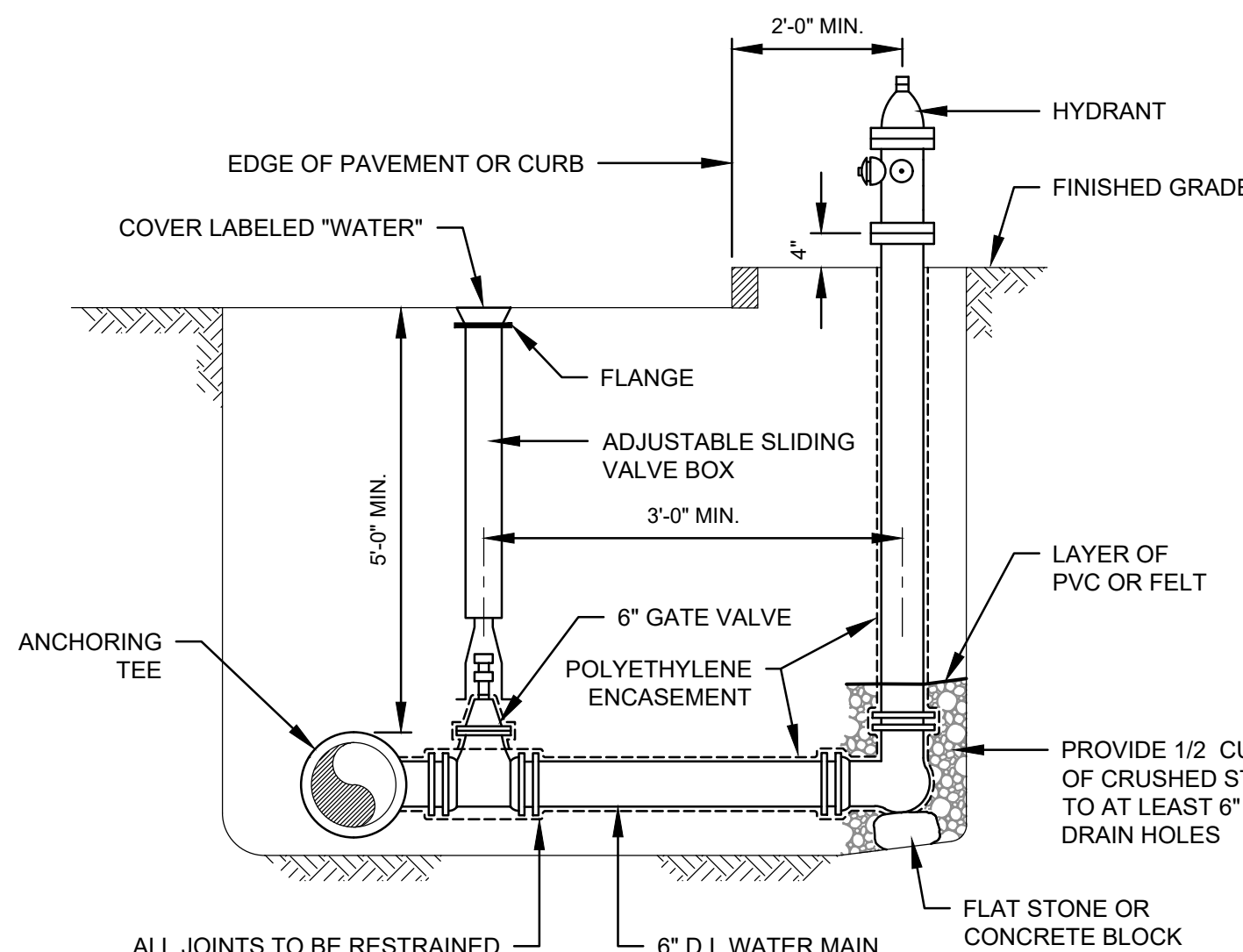
PAVEMENT REPLACEMENT DETAILS
N.T.S.



VALVE AND BOX DETAIL
N.T.S.



WATER SERVICE DETAIL
N.T.S.



NOTE:
USE TWO 6" BENDS OR OFFSET ON LATERAL TO ACHIEVE
REQUIRED HYDRANT ELEVATION IF NECESSARY.

HYDRANT AND VALVE DETAIL
N.T.S.

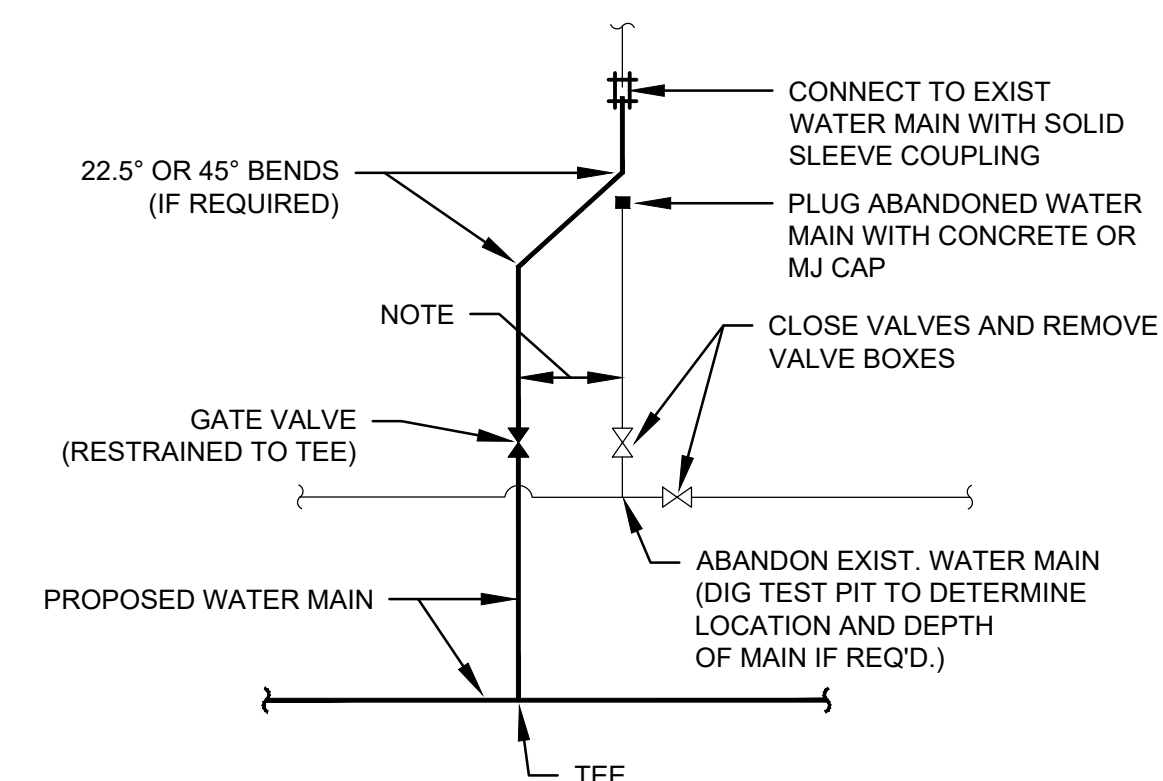
REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)

PIPE SIZE	90° BEND	45° BEND OR WYE BRANCH	22 1/2° BEND	11 1/4° BEND	PLUG, CAP OR IN-LINE VALVE	TEE (BRANCH)
6"	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)
8"	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)
10"	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)
12"	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)
16"	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)
20"	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)
24"	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)
30"	100 (120)	41 (50)	20 (24)	10 (12)	174 (261)	165 (247)

NOTES:

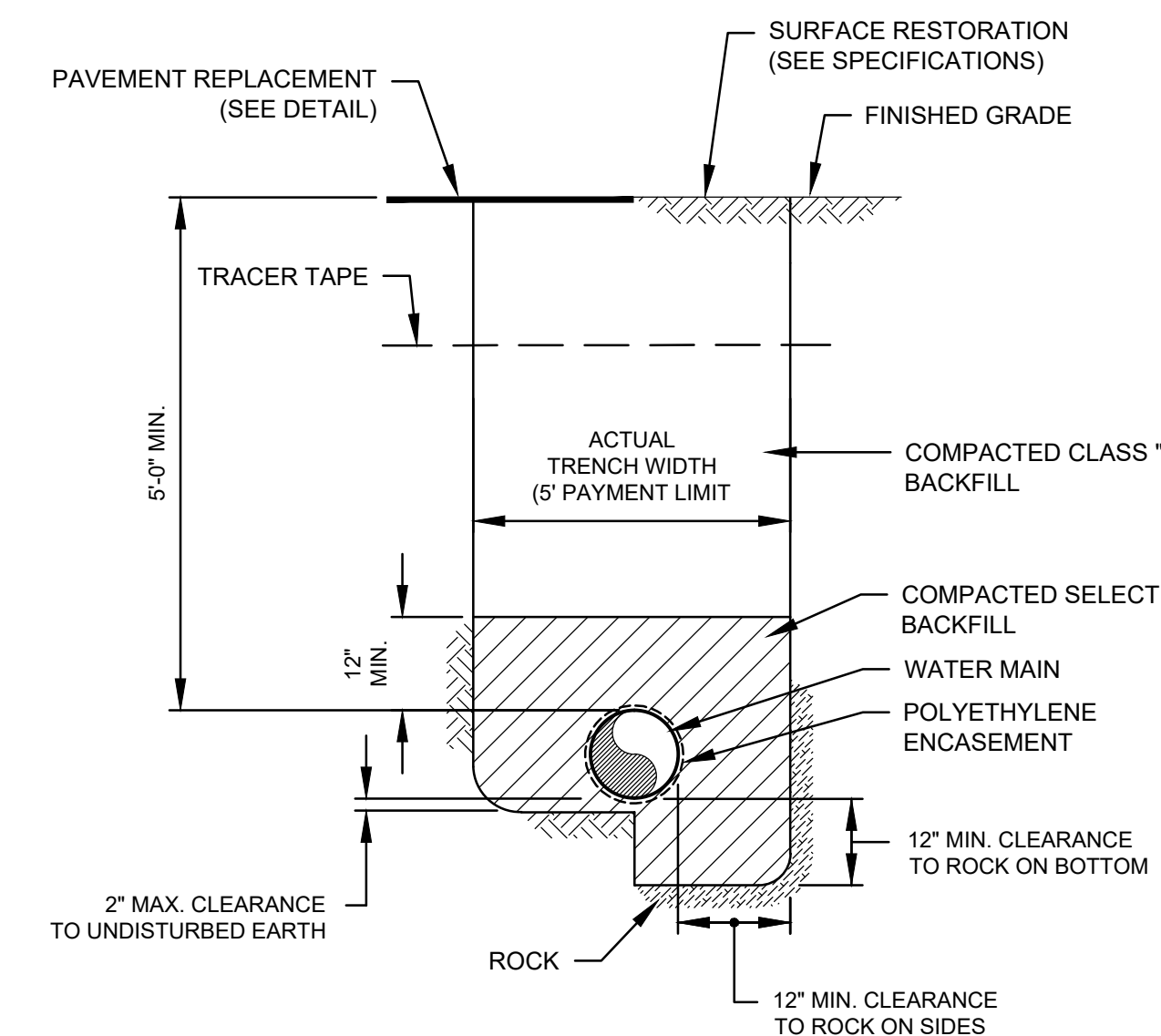
- RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE.
- THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE SPECIFICATION SECTION.

RESTRAINED JOINT TABLE



NOTE:
MINIMUM PRACTICAL DISTANCE - GENERALLY NO MORE THAN 2 FT.

WATER MAIN LATERAL CONNECTION
N.T.S.



WATER MAIN TRENCH DETAIL
N.T.S.

Consultants:

Revisions:		
No.	Date	Description

COA:



Seal:

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Approved By: TEM

W&S Project No.: ENG23-0679

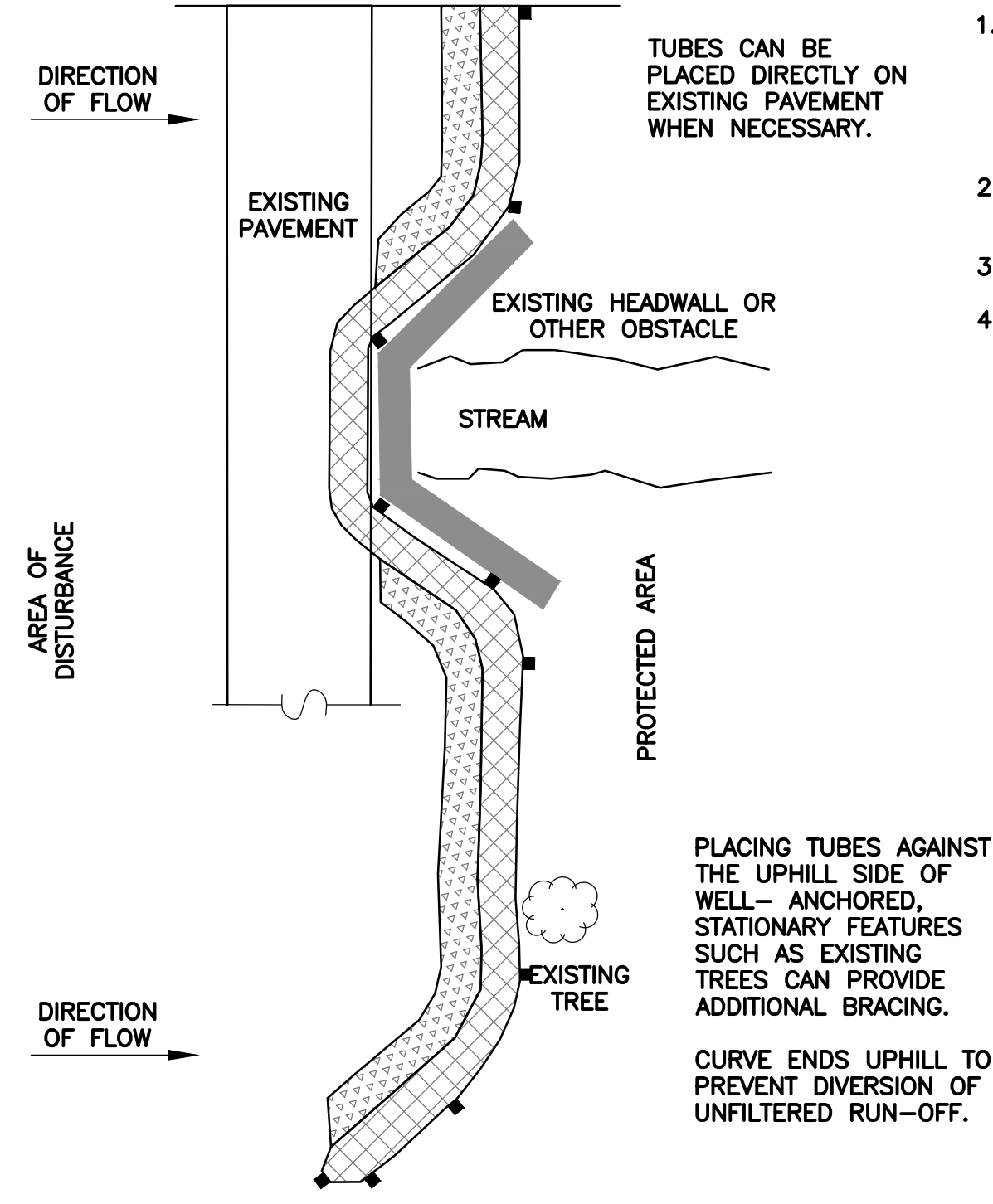
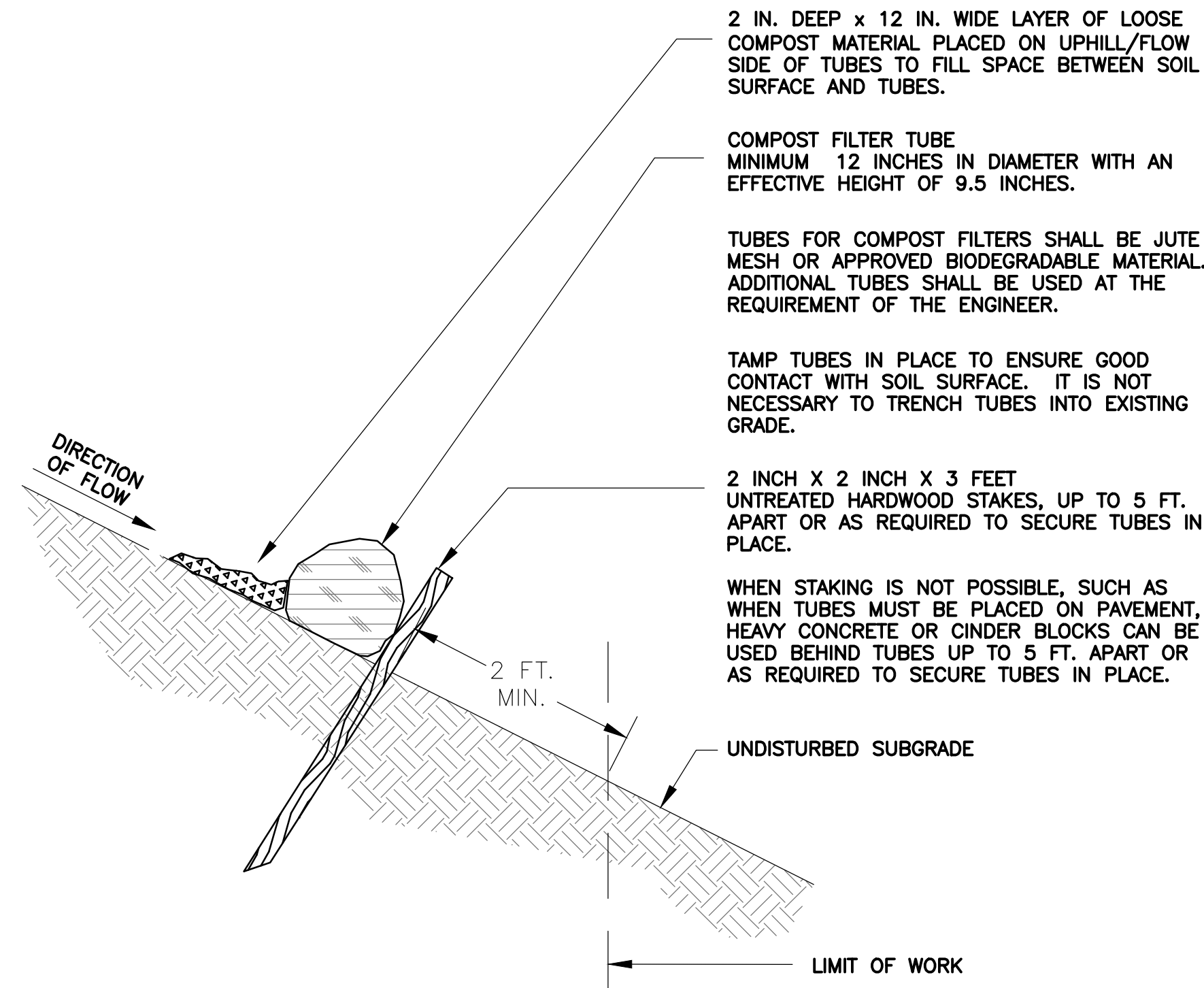
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Drawing Title:

DETAILS I

Sheet Number:

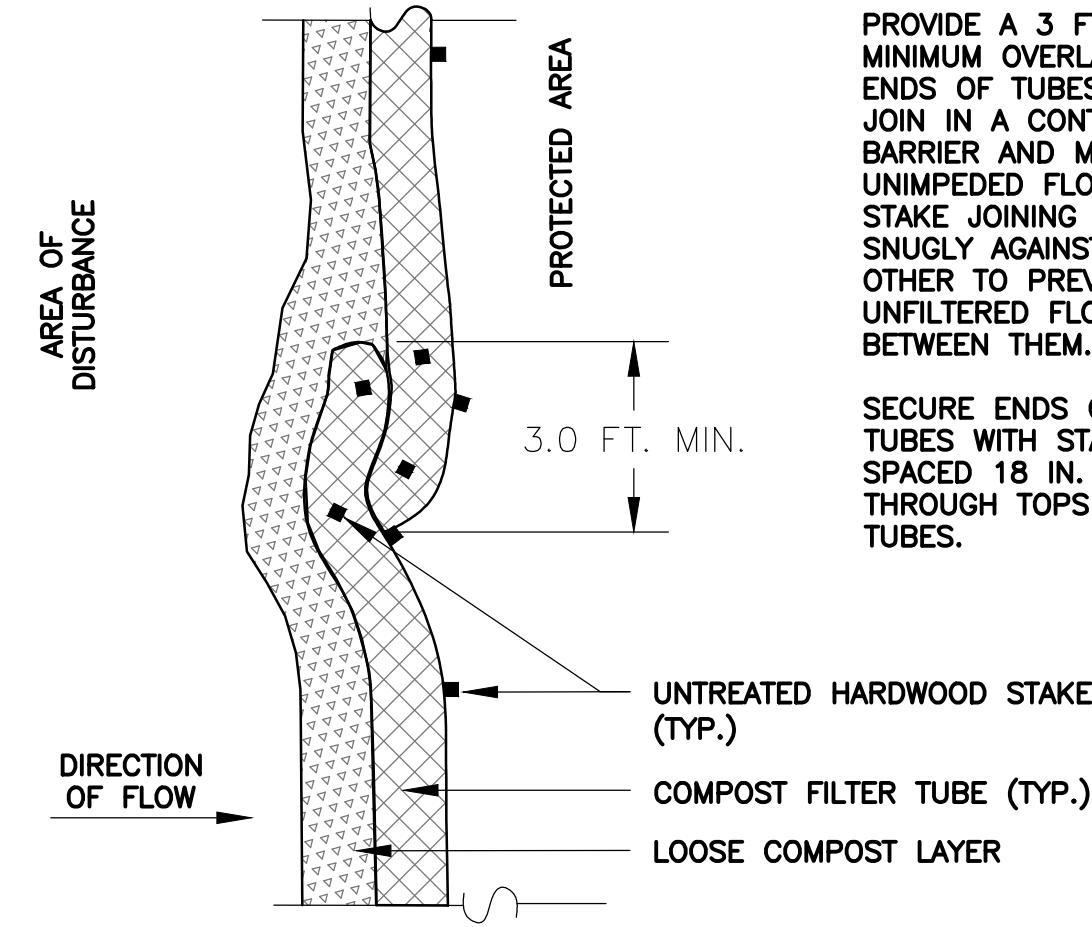
C501



PLAN VIEW
SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE

GENERAL NOTES:

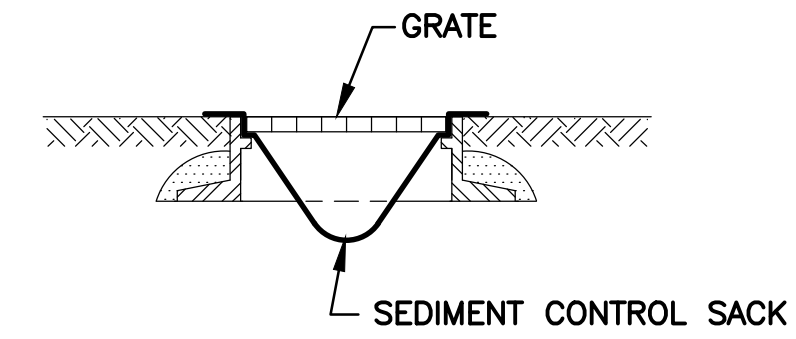
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSEING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.



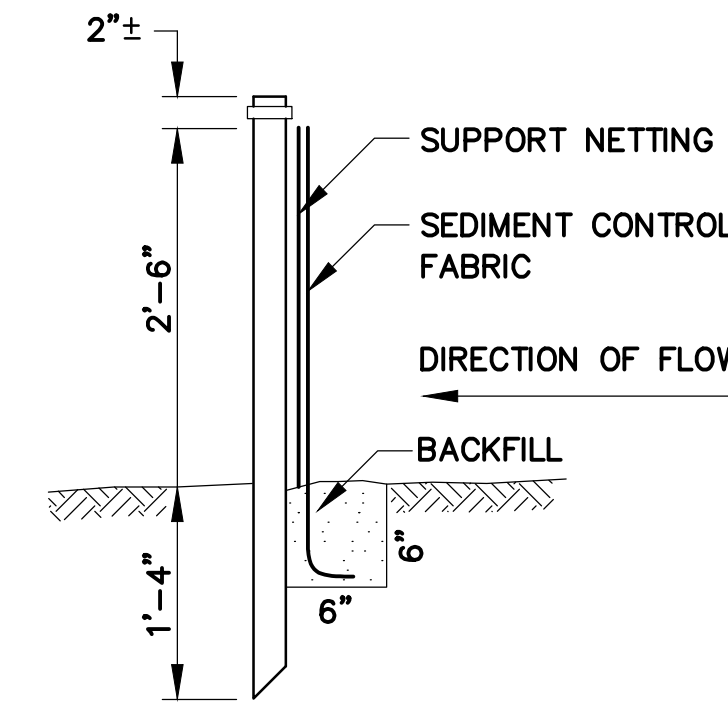
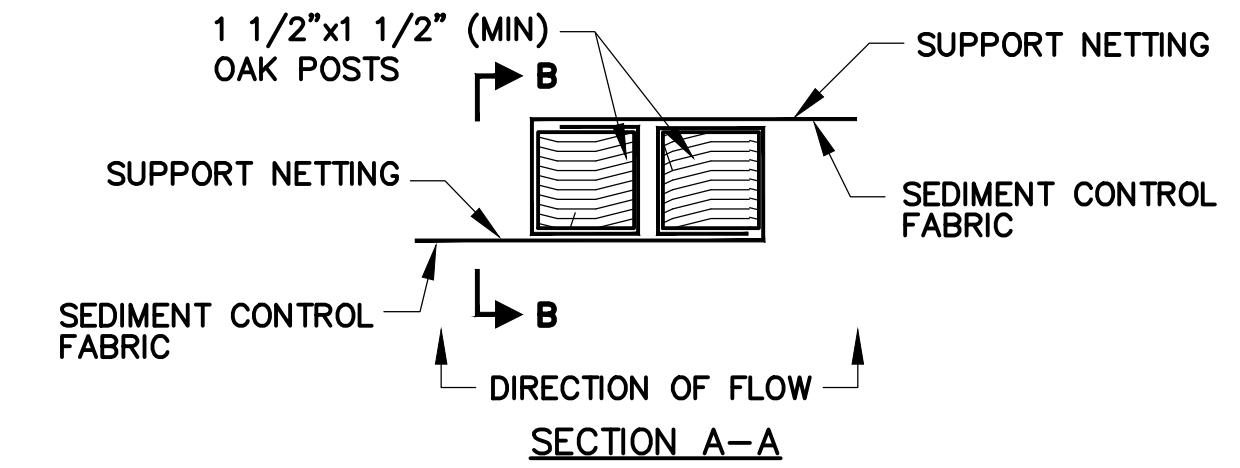
PLAN VIEW - JOIN DETAIL

PROVIDE A 3 FT. MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

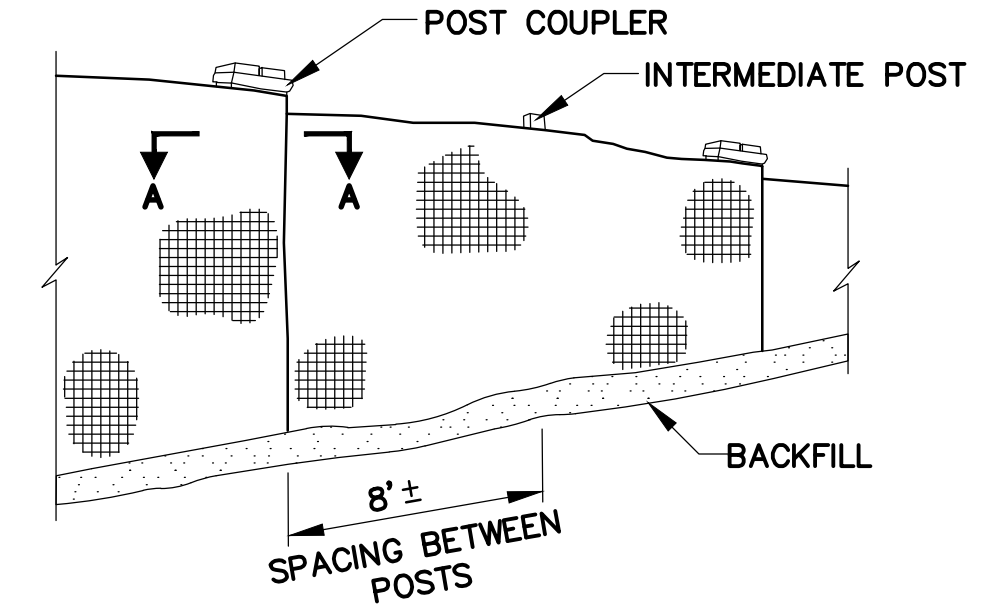
SECURE ENDS OF TUBES WITH STAKES SPACED 18 IN. APART THROUGH TOPS OF TUBES.



CATCH BASIN PROTECTION DETAIL
N.T.S.

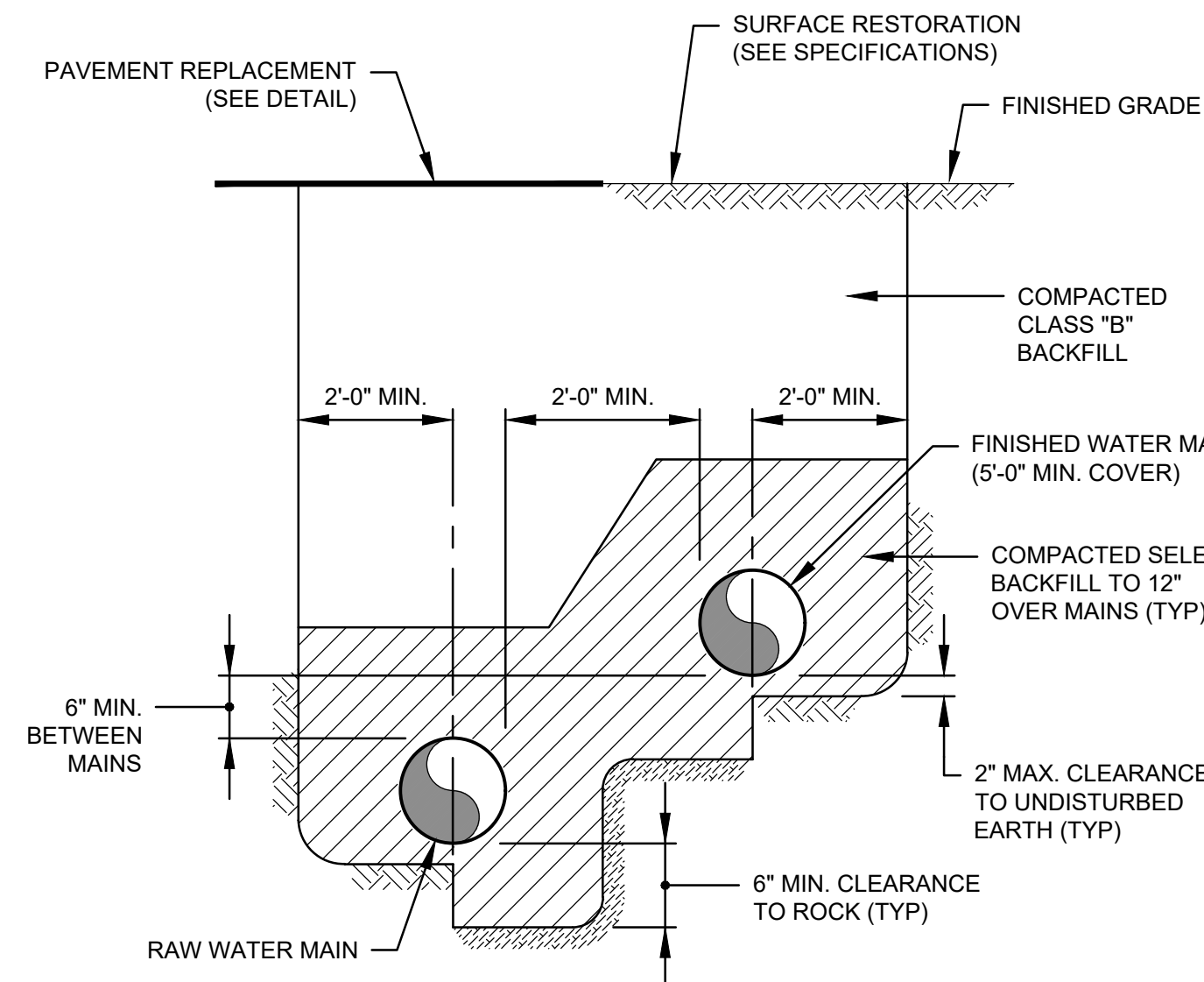


SECTION B-B

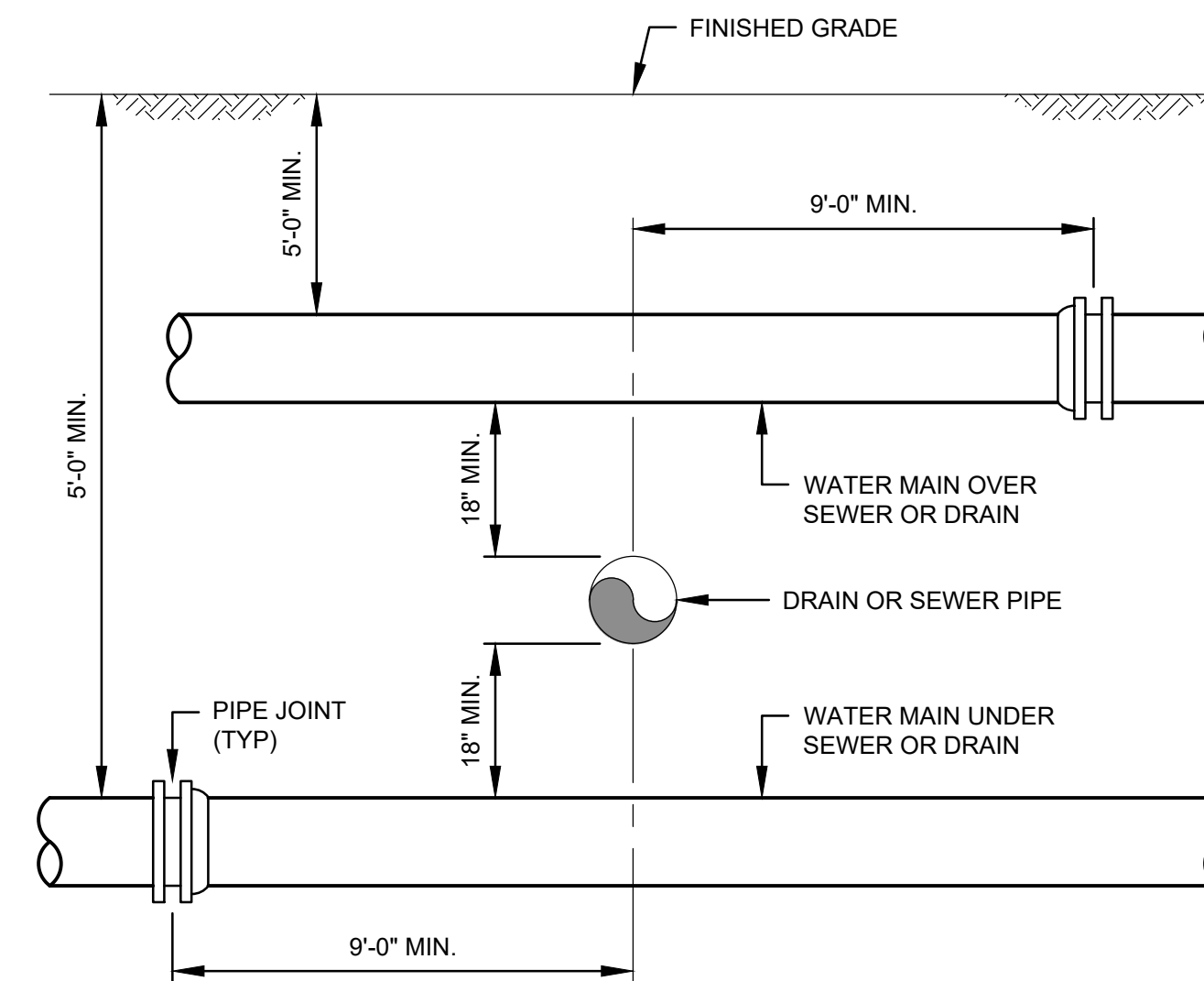


ELEVATION

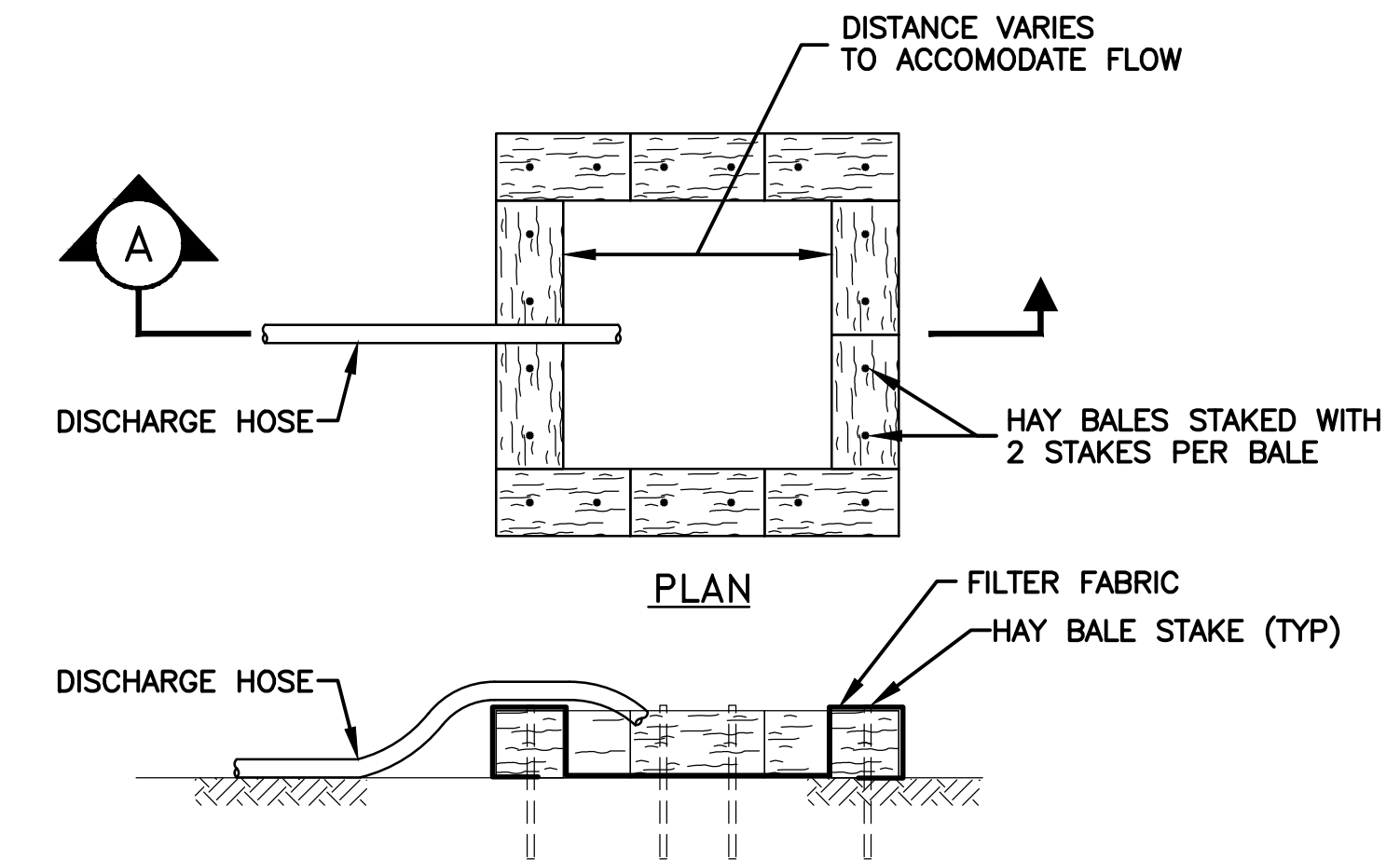
SILT FENCE DETAIL
N.T.S.



DUAL WATER MAIN TRENCH DETAIL
N.T.S.



SEWER OR DRAIN CROSSING DETAIL
N.T.S.



SECTION A

DEWATERING DISCHARGE DISPOSAL DETAIL
N.T.S.

Revisions:		
No.	Date	Description



Seal:

Issued For:
DEP REVIEW ONLY
Scale: AS NOTED

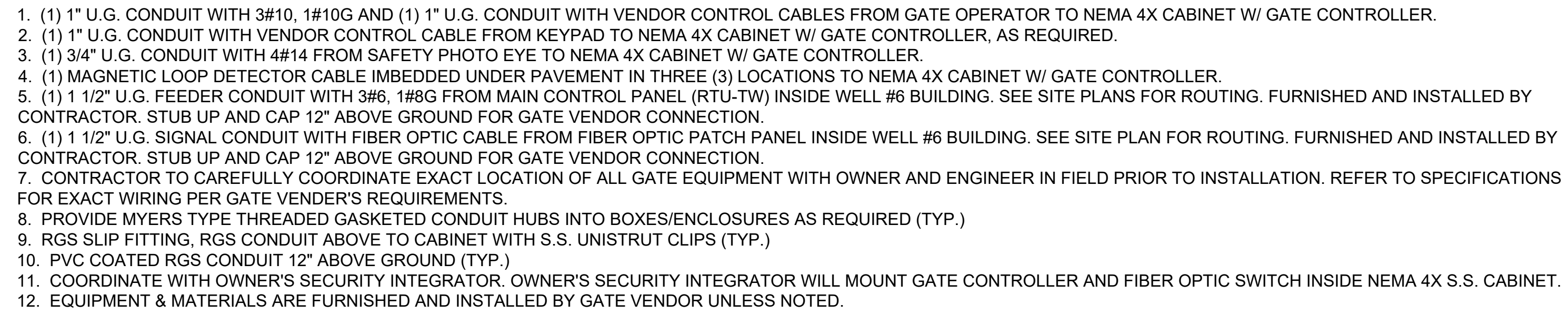
Date: NOVEMBER 2023
Drawn By: GJK/RWS
Reviewed By: SBR
Approved By: TEM
W&S Project No.: ENG23-0679
W&S File No.:

Drawing Title:

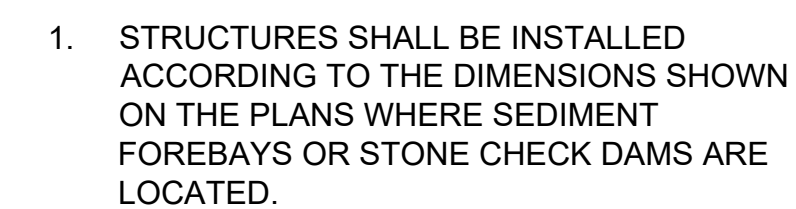
DETAILS II

Sheet Number:

C502



N.T.S.



N.T.S.

