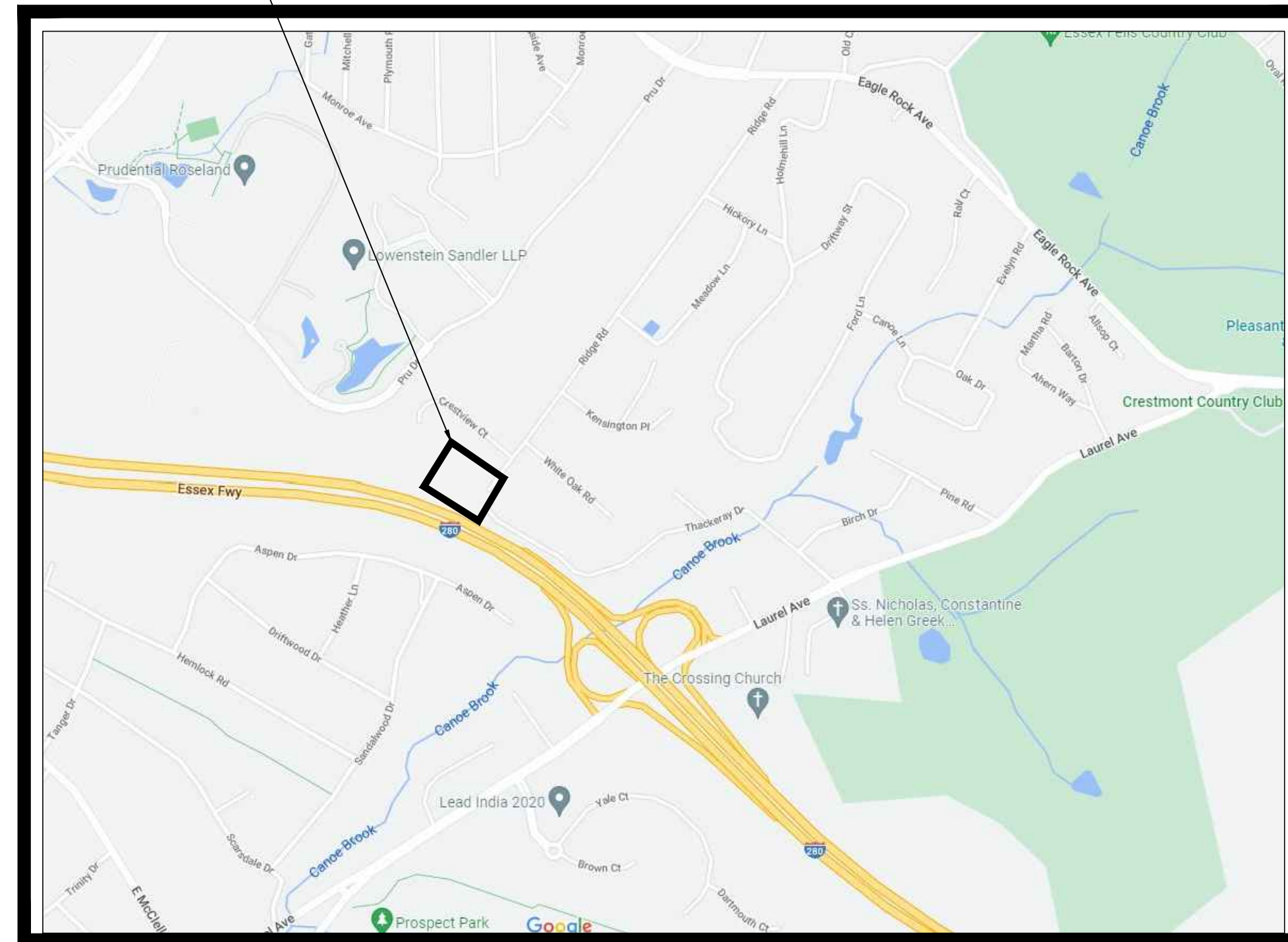


AUXILIARY WATER STORAGE TANK INSTALLATION AT RIDGE ROAD GROUND STORAGE TANK

PROJECT LOCATION

LIST OF UTILITIES AND EMERGENCY CONTACT INFORMATION	
WATER & SEWER	BOROUGH OF ROSELAND C/O WATER & SANITARY SEWER DEPT. 300 EAGLE ROCK AVENUE ROSELAND NJ 07068
GAS:	PSE&G GAS DIVISION ATTN: THOMAS ZIMMERMAN 150 CIRCLE AVENUE CLIF TON NJ 07011 (973) 414-1552 FAX (973) 478-4302
ELECTRIC:	PSE&G ELECTRIC DIVISION ATTN: SHARON MICCHELLI 50 CIRCLE AVENUE CLIFTON NJ 07011 (973) 365-2819 FAX (973) 772-9442
TELEPHONE:	VERIZON COMMUNICATIONS 540 BR OAD STREET NEWARK NJ 07101 (973) 649-9900 FAX (973) 482-0890
CABLE:	COMCAST CABLE COMPANY ATTN: RICHARD GUGULSKI 650 LIBERTY AVENUE UNION NJ 07083
STORM DRAIN:	ESSEX COUNTY DEPT. OF PUBLIC WORKS 900 BLOOMFIELD AVENUE VERONA NJ 07044



PROJECT LOCATION MAP

N.T.S.

SHEET INDEX	
SHEET #	DESCRIPTION
T-1	TITLE SHEET
G-1	LEGEND SHEET
C-1	EXISTING CONDITIONS SITE PLAN
C-2	PROPOSED CONDITIONS SITE PLAN
D-1	CONSTRUCTION DETAILS I
D-2	CONSTRUCTION DETAILS II
D-3	CONSTRUCTION DETAILS III
SESC-1	SOIL EROSION SEDIMENT CONTROL NOTES & DETAILS



**REMINGTON
& VERNICK
ENGINEERS**
2059 SPRINGDALE ROAD
CHERRY HILL, NJ 08003
(856) 795-9595, FAX (856) 795-1882
WEB SITE ADDRESS : WWW.RVE.COM
Certification of Authorization: 24 CA 28003300
~ENGINEERING EXCELLENCE~

DATE:
STEPHANIE A. CUTHBERT
NJ PROFESSIONAL ENGINEER LIC. No. 42136

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NO.	REVISION	DATE	BY/CHK

New Jersey One Call
CALL BEFORE YOU DIG
811 or 1-800-272-1000
ITS THE LAW
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT NJ ONE CALL PRIOR TO THE START OF CONSTRUCTION. CALL FOR MARKOUTS THREE (3) FULL BUSINESS DAYS IN ADVANCE AND BEGIN EXCAVATION WITHIN 10 DAYS. ALL CONTRACTORS ON-SITE MUST HAVE THEIR OWN MARKOUT.

**ROSELAND BOROUGH,
ESSEX COUNTY, NEW JERSEY**

JULY, 2022

TITLE SHEET	ROSELAND BOROUGH AUXILIARY WATER STORAGE TANK AT RIDGE ROAD GROUND STORAGE TANK NEW JERSEY		
	ROSELAND BOROUGH ESSEX COUNTY		
DRAWN BY: DATE: 7/29/2022 JOB No.: 0718T023	DESIGN BY:	CHECKED BY:	SCALE: AS NOTED SHEET No.: T-1

STANDARD LEGEND

NOTE: ALL SYMBOLS MAY NOT BE USED



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ITEM	DESCRIPTION	EXISTING	PROPOSED
	OVERHEAD WIRE		
	SANITARY FORCE MAIN PIPE		
	STORM SEWER PIPE ≤ 12"		
	STORM SEWER PIPE > 12"		
	GAS SERVICE		
	SANITARY SEWER PIPE ≤ 12"		
	SANITARY SEWER PIPE > 12"		
	ELECTRIC SERVICE		
	FIBER OPTIC SERVICE		
	TELEPHONE SERVICE		
	COMMUNICATIONS SERVICE		
	IRRIGATION PIPE		
	WATER SERVICE		
	WATER SHUT-OFF		
	WATER METER		
	WATER VALVE		NEW RESET
	WATER HYDRANT		NEW RESET
	WELL		
	YARD HYDRANT		
	METER PIT		
	GAS SHUT-OFF		
	GAS METER		
	GAS VALVE		NEW RESET
	GAS LINE MARKER		
	CLEANOUT		
	SEWER VENT		
	INLET TYPE A		NEW RESET/SET RECONSTRUCT
	INLET TYPE B		NEW RESET/SET RECONSTRUCT
	INLET TYPE E		NEW RESET/SET RECONSTRUCT
	AREA DRAIN		
	MANHOLES		NEW RESET RECONSTRUCT
	HEADWALL		
	HEADWALL W/ WINGS		NEW RESET
	IRRIGATION CONTROL VALVE		NEW RESET
	IRRIGATION BOX		
	IRRIGATION CONTROL BOX		
	SPRINKLER HEAD		
	UNKNOWN VALVE		
	COMMUNICATIONS PEDESTAL		
	COMMUNICATIONS LINE MARKER		
	TELEPHONE PEDESTAL		
	TELEPHONE LINE MARKER		
	ELEC. BOX		
	ELEC. METER		
	ELEC. TRANSFORMER PAD		
	ELEC. VAULT		
	ELEC. LINE MARKER		
	UTILITY POLE		STANDARD W/ LIGHT W/ SOLAR
	GUY ANCHOR		
	ELEC. OUTLET		
	LIGHTS		POLE AREA
	VENT		
	VENT PIPE		

ITEM	DESCRIPTION	EXISTING	PROPOSED
	BENCHMARK LOCATION		
	CROWS FOOT		
	AERIAL TARGET		
	CONCRETE MONUMENT		(SET)
	PK / MAG NAIL / DRILL HOLE / SPIKE		(SET)
	DRILL HOLE W/ WINGS		
	STAKE		(SET)
	HUB		(SET)
	PIN W/ CAP		(SET)
	IRON PIPE		(SET)
	IRON PIN		(SET)
	CROSS CUT		(SET)
	DISK		
	STONE		
	REBAR		
	BASELINE		
	CENTERLINE		
	EASEMENT		
	RIGHT-OF-WAY		
	PROPERTY BOUNDARY		
	ADJACENT PROPERTY BOUNDARY		
	RAILROAD TRACKS		
	STATE BOUNDARY		
	MUNICIPAL / COUNTY BOUNDARY		

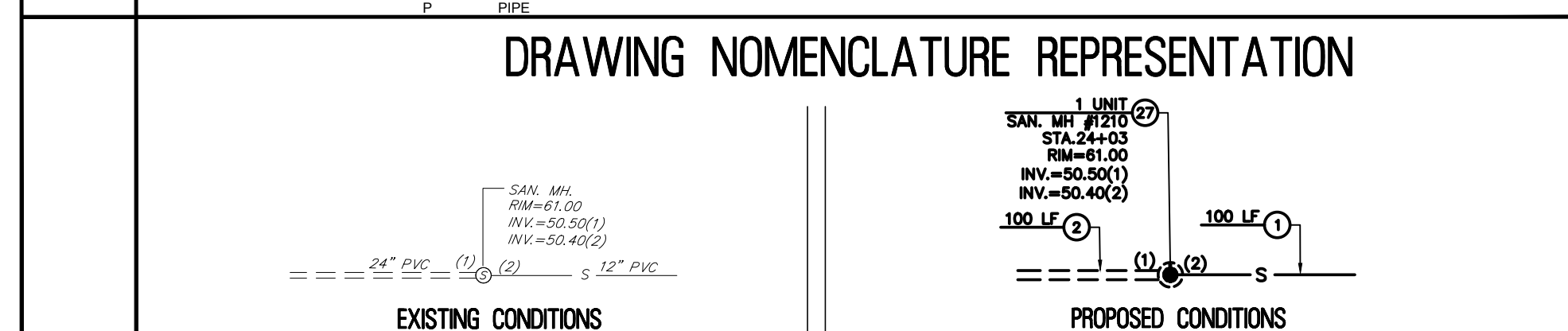
ITEM	DESCRIPTION	EXISTING	PROPOSED
	BORING LOCATION		
	MONITORING WELL LOCATION		
	TEST PIT LOCATION		
	FRESHWATER WETLAND FLAG		
	FRESHWATER WETLAND LINE		
	FRESHWATER WETLAND BUFFER		
	EDGE OF WATER		
	STREAM CENTERLINE		

ITEM	DESCRIPTION	EXISTING	PROPOSED
	GRASS/SOD		
	DECIDUOUS TREE		
	SHRUBS / BUSH		
	EVERGREENS		
	STUMP		
	WOODS / TREE LINE		
	WIRE FENCE		
	SPLIT RAIL FENCE		
	WOOD / VINYL FENCE		
	CHAIN-LINK FENCE		

ITEM	DESCRIPTION	EXISTING	PROPOSED
	TOP OF BANK / DITCH		
	BOTTOM OF BANK / DITCH		
	CONTOUR (MAJOR)		
	CONTOUR (MINOR)		
	FLOW LINE / SWALE		
	TIME OF CONCENTRATION		
	SPOT GRADE		
	ROADWAY GRADE		
	DRAINAGE FLOW		

ITEM	DESCRIPTION	EXISTING	PROPOSED
	EDGE OF PAVEMENT		
	CURB		
	PAVEMENT / CONC. / SIDEWALK		
	LIMIT OF EXCAVATION		
	GUIDE RAIL		
	BOLLARD		
	MAILBOX		
	SIGNS		
	FLAG POLE		
	BENCH		
	PILE		
	DETECTABLE WARNING SURFACE		
	TYPICAL STRIPING		
	ADA STRIPING		
	TRAFFIC CONTROL BOX		
	TRAFFIC LIGHT		
	DEPT. OF TRANSPORTATION MANHOLE		
	STATE HIGHWAY DEPARTMENT		
	RAILROAD CROSSING BEACON		
	CALL BOX		
	OIL FILL		
	UNDERGROUND STORAGE TANK LID		
	RISER PIPE		
	RAISED PAVEMENT MARKER		
	TYPICAL NORTH ARROW		

ABBREVIATIONS	EXISTING	PROPOSED
APR	APRON	EL ELEVATION
ASB	ASBESTOS CEMENT PIPE	EX EXISTING
AFF	ABOVE FINISHED FLOOR	FFE FINISH FLOOR ELEVATION
ASB	ASBESTOS	FT FEET
AL	ALUMINUM	E.B. W.B. EASTBOUND, WESTBOUND, N.B. S.B. NORTHBOUND, SOUTHBOUND
BL	BASELINE	GL GUTTER LINE
BM	BENCH MARK	GR GRATE
BIT.	BITUMINOUS	GALV. GALVANIZED
BLDG.	BUILDING	HW HEADWALL
BGS	BELOW GROUND SURFACE	HDPE HIGH DENSITY POLYETHYLENE PIPE
CL	CENTERLINE	INV. INVERT
CIP	CAST IRON PIPE	IP IRON PIN
CONC.	CONCRETE	IN INCHES
CMP	CORRUGATED METAL PIPE	JB JUNCTION BOX
CULV.	CULVERT	LSA LANDSCAPED AREA
CS	CARBON STEEL	LF LINEAR FEET
CF	CUBIC FEET	LST LANDSCAPE TIE
CY	CUBIC YARDS	LOM LIMIT OF MILLING
CMU	CONCRETE MASONRY UNIT	LOP LIMIT OF PAVING
D.C.	DEPRESSED CURB	MB MAILBOX
DH	DRILL HOLE	MAX. MAXIMUM
DIA.	DIAMETER	MIN. MINIMUM
DIP	DUCTILE IRON PIPE	MH MANHOLE
DWY	DRIVEWAY	NO. NUMBER
DYL	DOUBLE YELLOW LINE	N.T.S. NOT TO SCALE
		P PIPE
		PERF. PERFORATED
		PI POINT OF INFLECTION
		PT POINT OF TANGENCY
		PSI POUNDS PER SQUARE INCH
		PK PARKER KAYLON MASONRY NAIL
		PROP. PROPOSED
		TEMP. TEMPORARY
		PVC POLYVINYL CHLORIDE PIPE
		TYP. TYPICAL
		UD UNDERDRAIN
		PV CURVATURE
		UD UNDERDRAIN
		PV POINT OF VERTICAL INTERSECTION
		UP UTILITY POLE
		PV POINT OF VERTICAL TANGENCY
		V VOLTS
		R RADIUS
		VAR. VARIES
		RPC REINFORCED CONCRETE PIPE
		WM WATER METER
		RMC RIGID METALLIC CONDUIT
		R.O.W. RIGHT OF WAY
		R.R. RAILROAD
		RTE. ROUTE
		SAN. SANITARY
		SS STAINLESS STEEL
		SHD STATE HIGHWAY DEPARTMENT
		SHLD. SHOULDER
		STY. STORY
		STA. STATION



LEGEND SHEET

ROSELAND BOROUGH
 AUXILIARY WATER STORAGE TANK
 AT RIDGE ROAD GROUND STORAGE TANK
 ROSELAND BOROUGH
 ESSEX COUNTY
 NEW JERSEY

DATE: 7/29/2022
 SHEET No.: G-1
 JOB No.: 07181023

SCALE: AS NOTED

DESIGNED BY: CHECKED BY: SCALE: AS NOTED

DATE: 7/29/2022 SHEET No.: G-1

JOB No.: 07181023

REVISION

NO. BY DATE



REMINGTON & VERNICK ENGINEERS
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"ENGINEERING EXCELLENCE"

DATE:
STEPHANIE A. CUTHBERT
NJ PROFESSIONAL ENGINEER LIC. No. 42136

DISCLAIMER

THIS PLAN WAS BASED ON ORIGINAL PLANS

PREPARED BY: **SCHOOR DEPALMA**
TITLED: **RIDGE RD. TANK WATER BOOSTER PS SITE PLAN**
LOCATED IN: **MANALAPAN**
DRAWING NO.: **3 OF 7**
DATED: **5/22/1996**
REVISED:

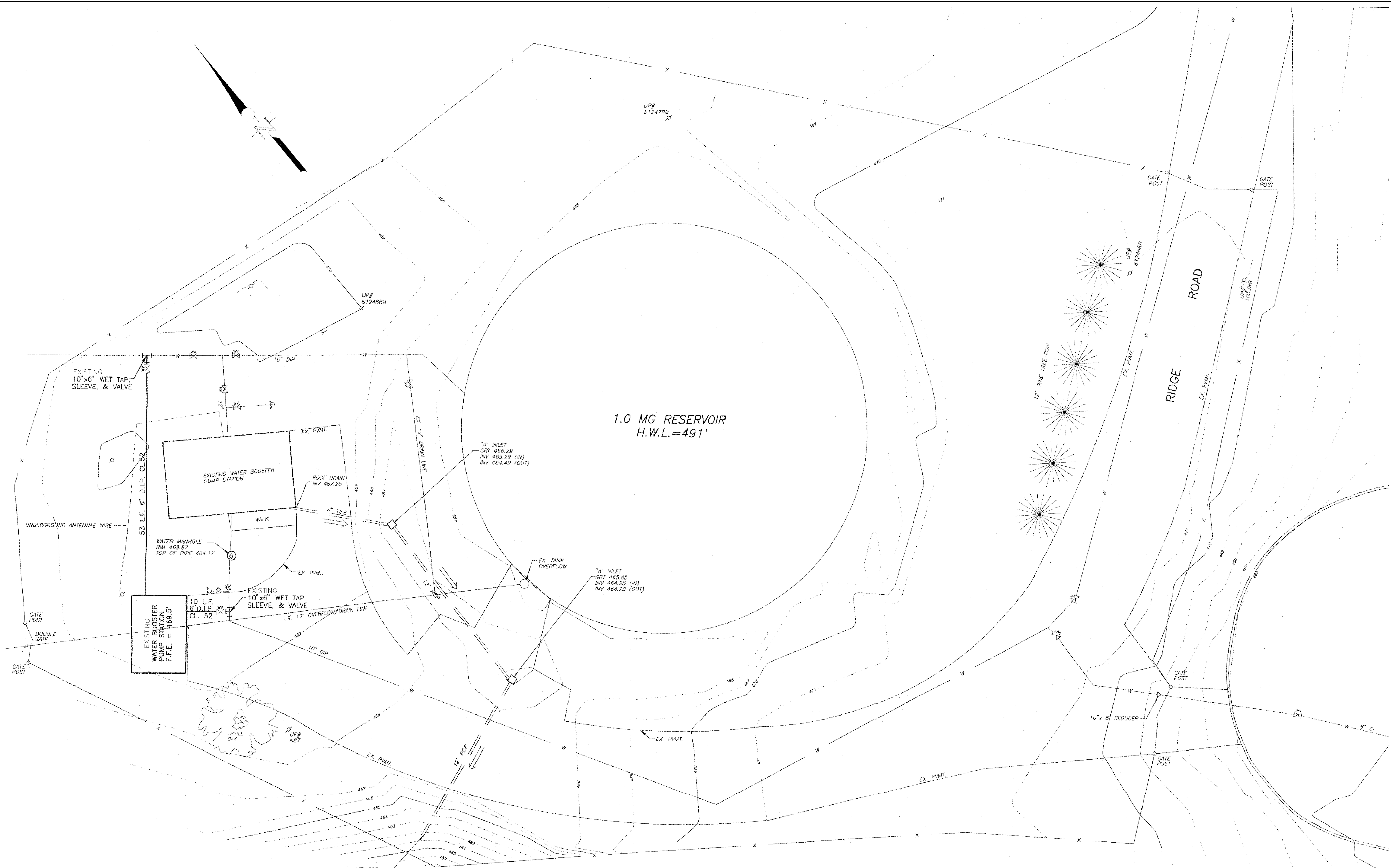
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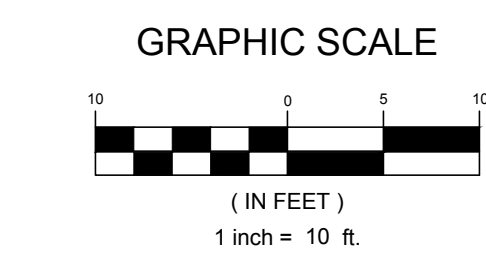
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EXISTING CONDITIONS SITE PLAN
ROSELAND BOROUGH
AUXILIARY WATER STORAGE TANK
AT RIDGE ROAD GROUND STORAGE TANK
ROSELAND BOROUGH ESSEX COUNTY NEW JERSEY

DRAWN BY:	DESIGN BY:	CHECKED BY:	SCALE:
KK	KK	SC	AS NOTED
DATE:	SHEET No.:		
7/29/2022	C-1		
JOB No.:			
07181023			



EXISTING CONDITIONS SITE PLAN
SCALE: 1"=10'





REMINGTON & VERNICK ENGINEERS
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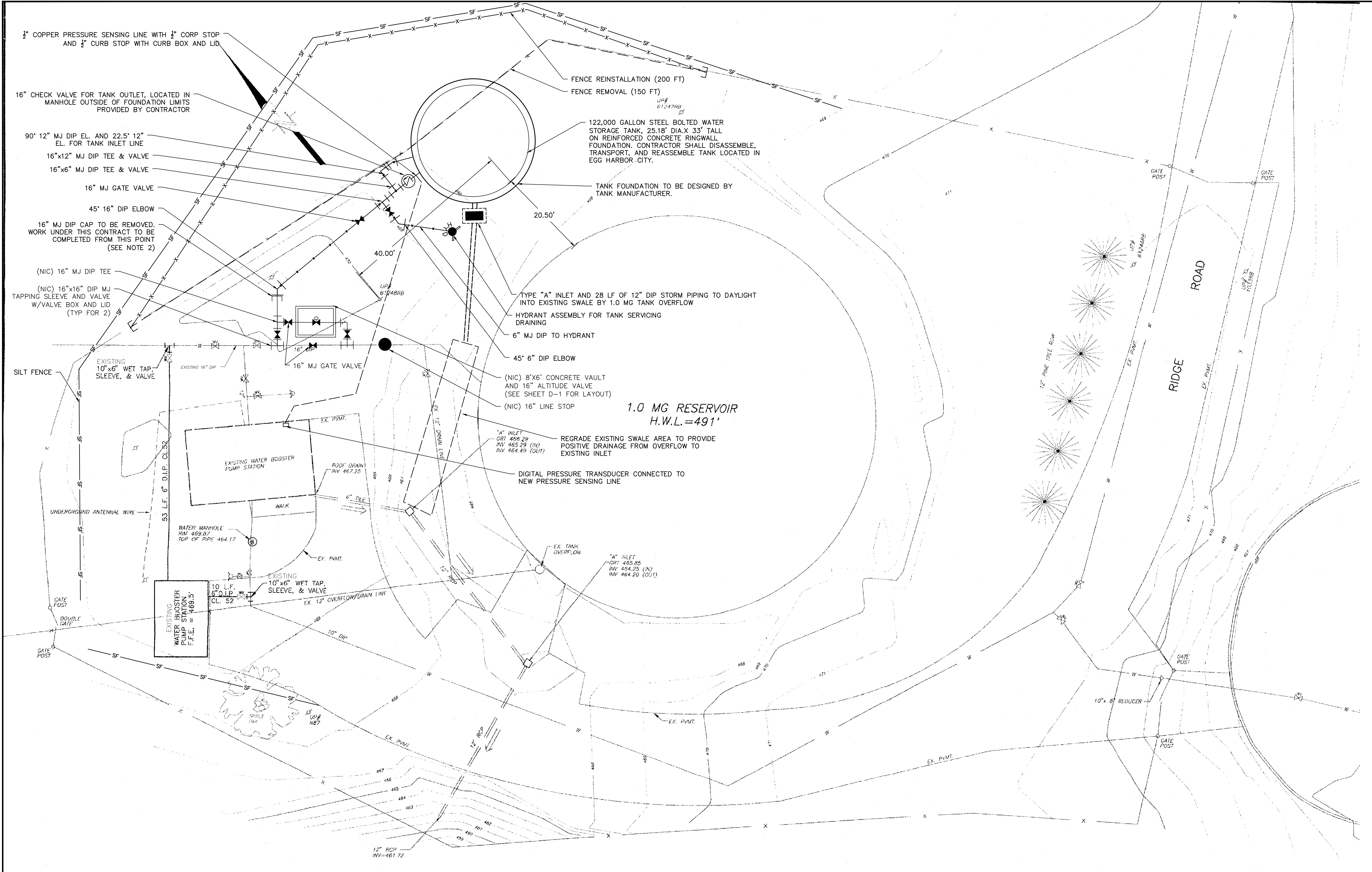
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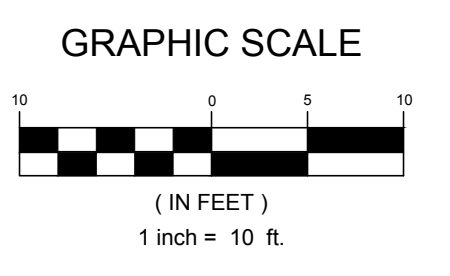
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PROPOSED CONDITIONS SITE PLAN
 ROSELAND BOROUGH
AUXILIARY WATER STORAGE TANK AT RIDGE ROAD GROUND STORAGE TANK
 NEW JERSEY
 ROSELAND BOROUGH ESSEX COUNTY

DRAWN BY:	DESIGN BY:	CHECKED BY:	SCALE:
KK	KK	SC	AS NOTED
DATE:	7/29/2022		
JOB No.:	C-2		
07181023			



PROPOSED SITE PLAN
 SCALE: 1"=10'



- NOTES:
 1. WORK DESIGNATED AS "FUTURE" SHALL NOT BE COMPLETED UNDER THIS CONTRACT AND IS DEPICTED.
 2. ALL WORK REQUIRED TO INSTALL THE PROPOSED VAULT, ALTITUDE VALVE TO THE EXISTING TANK AND ALL ASSOCIATED PIPING, FITTINGS AND APPURTENANCES SHALL BE BID AND CONSTRUCTED UNDER THIS CONTRACT, COMPLETE.

RVE

1901

**REMINGTON
& VERNICK
ENGINEERS**

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DRAWING NO.: 3 OF 7
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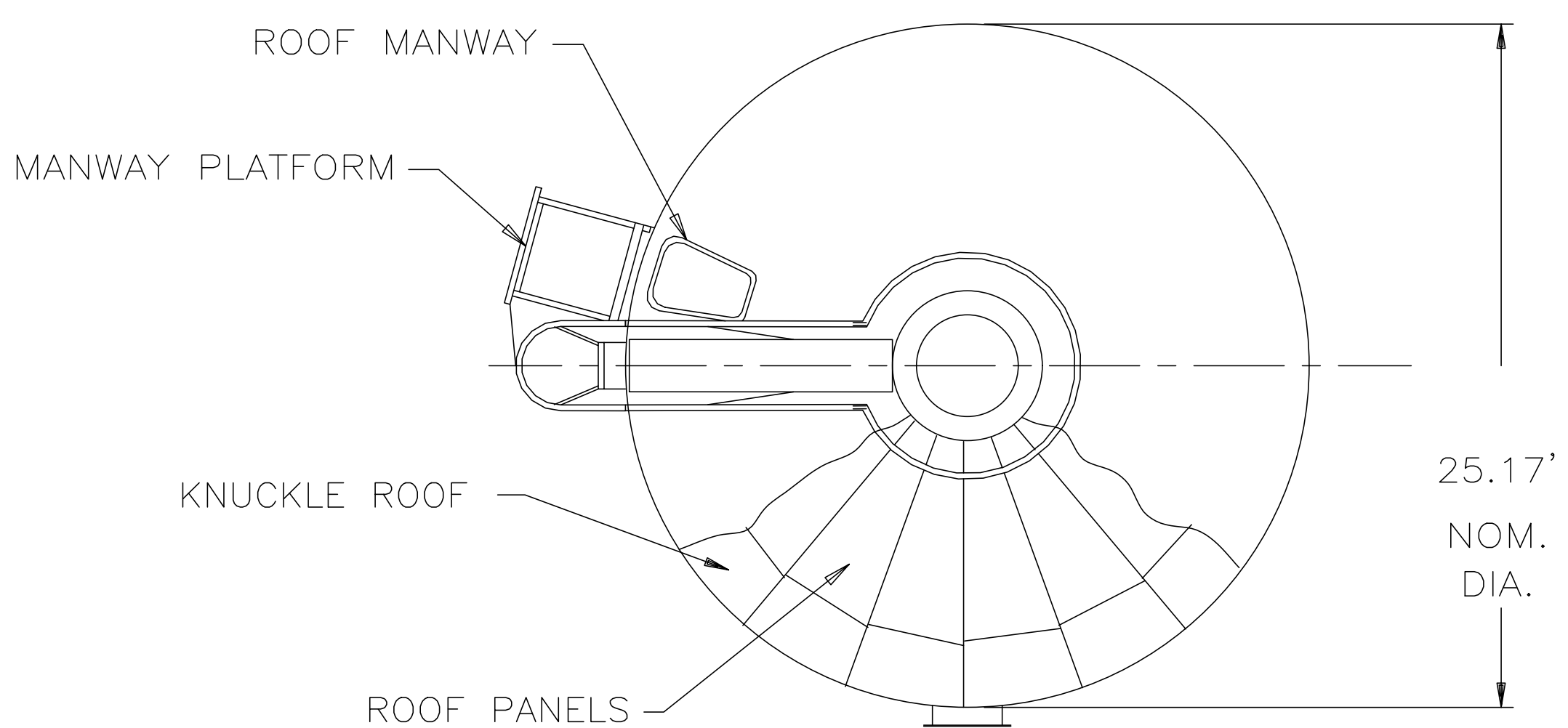
NO.	REVISION	DATE	BY / CHK.

CONSTRUCTION DETAILS I

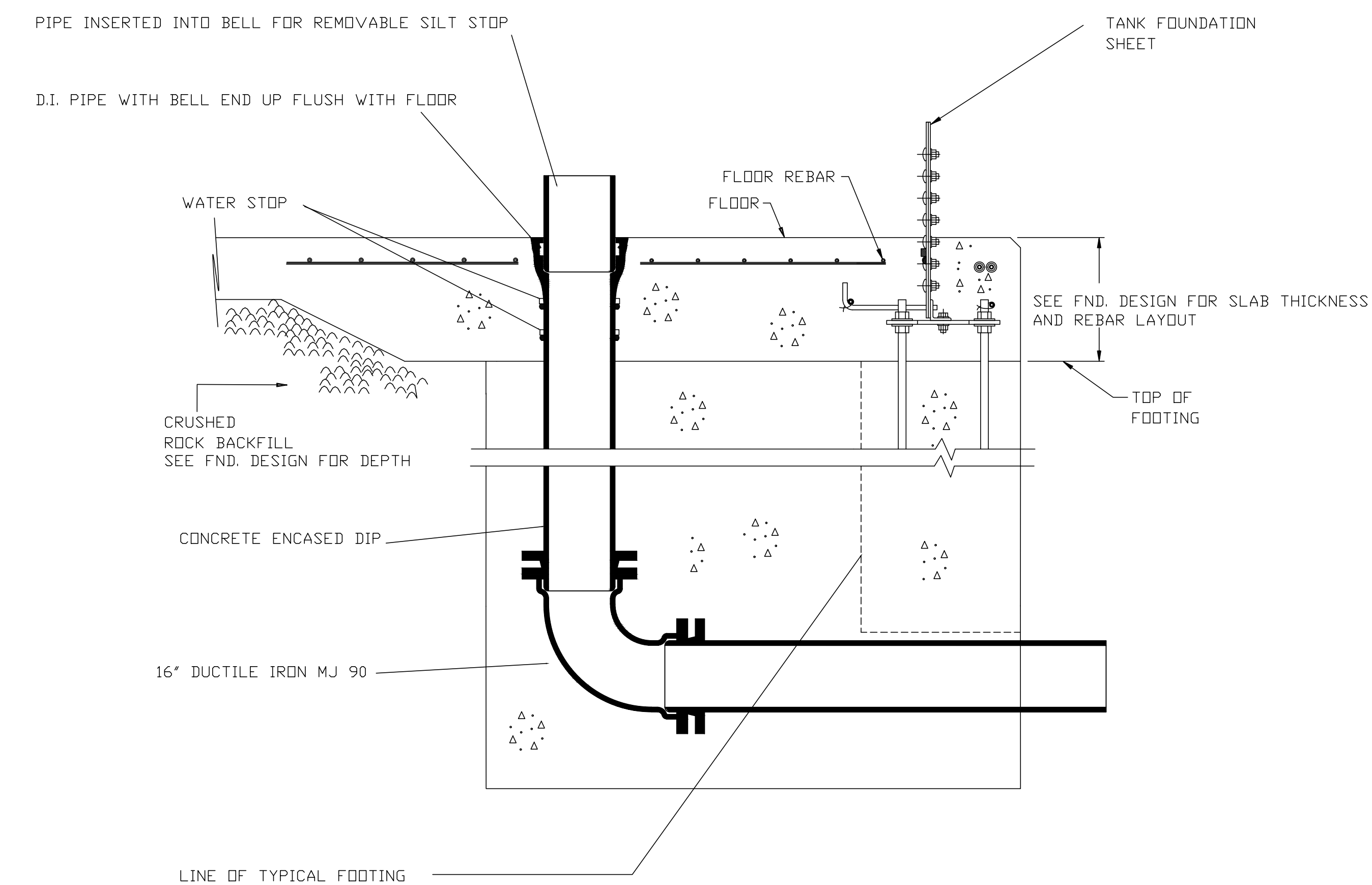
ROSELAND BOROUGH
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AT RIDGE ROAD GROUND STORAGE TANK

ROSELAND BOROUGH
ESSEX COUNTY
NEW JERSEY

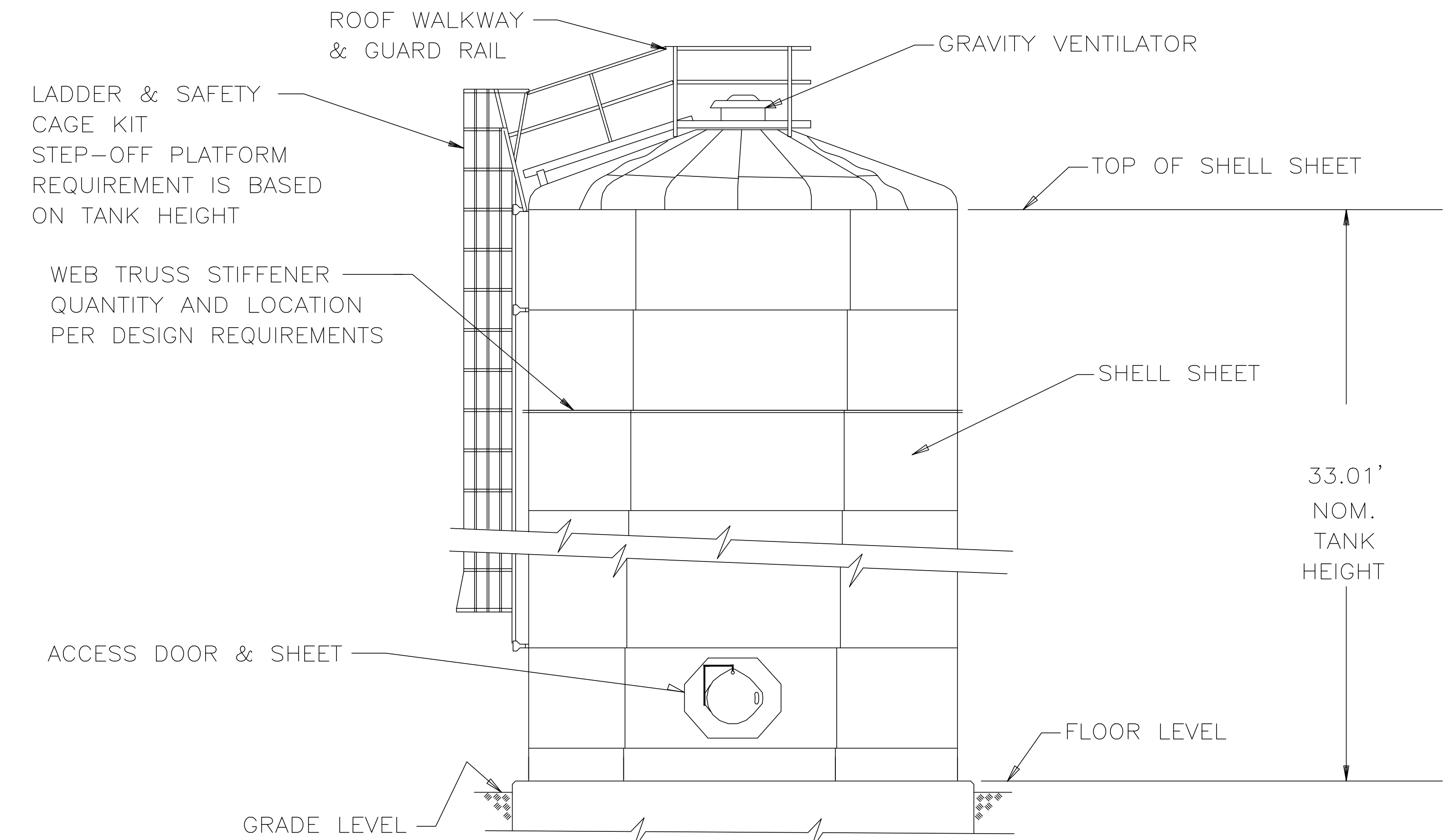
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JOB No.:	07181023		D-1



EXISTING TANK - PLAN VIEW
N.T.S.

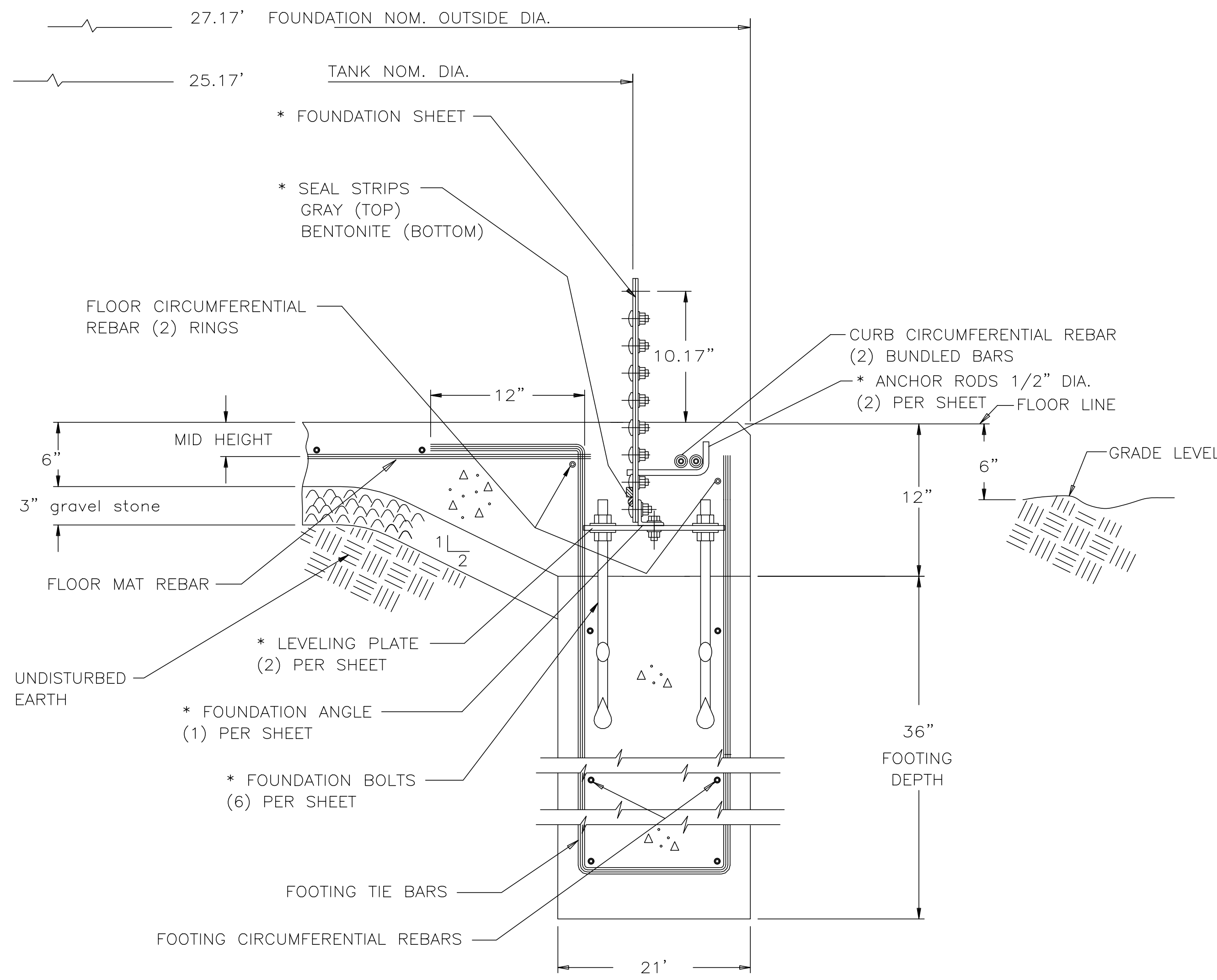


OUTLET PIPE THROUGH FOUNDATION WITH SILT STOP
N.T.S.



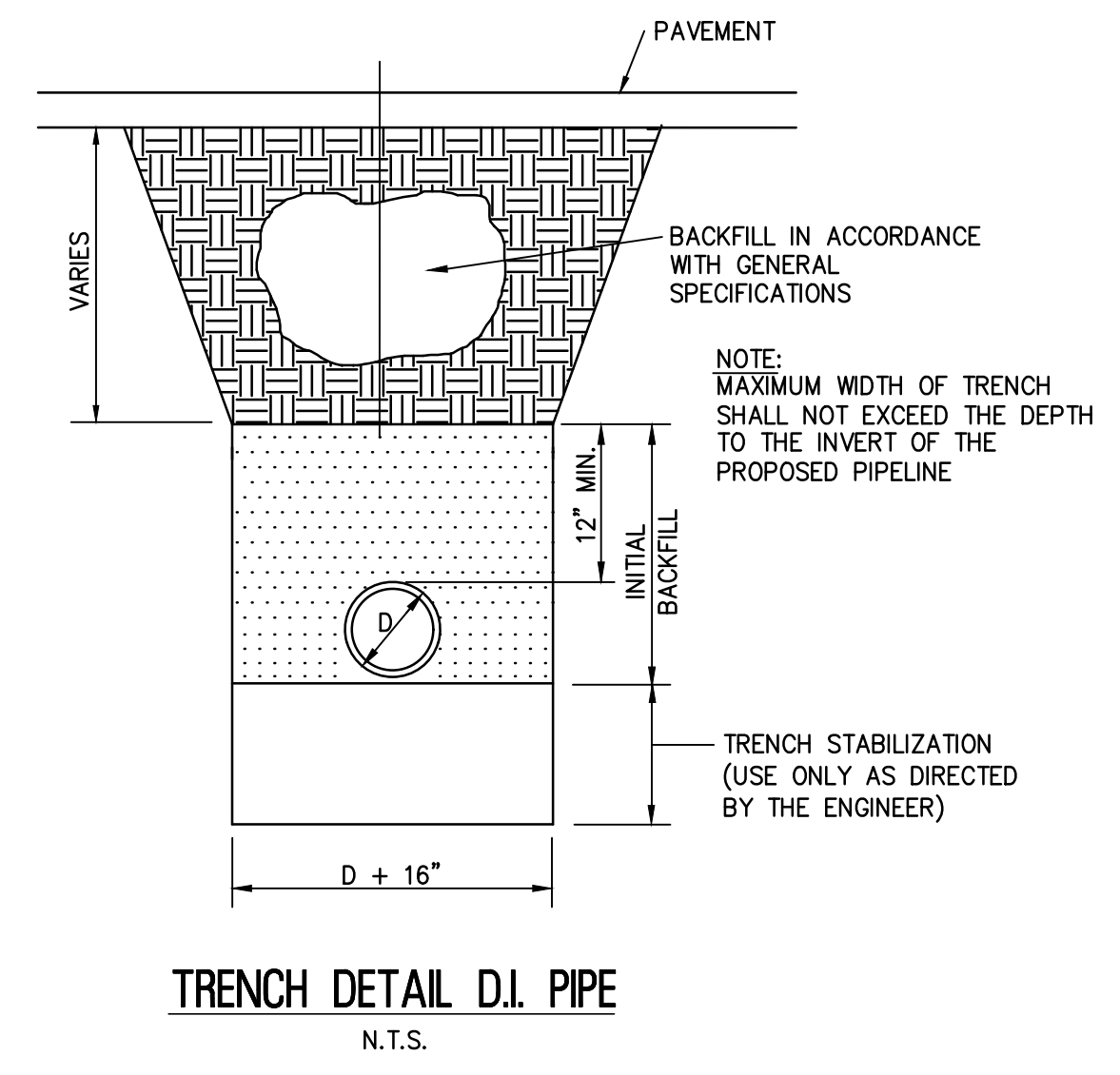
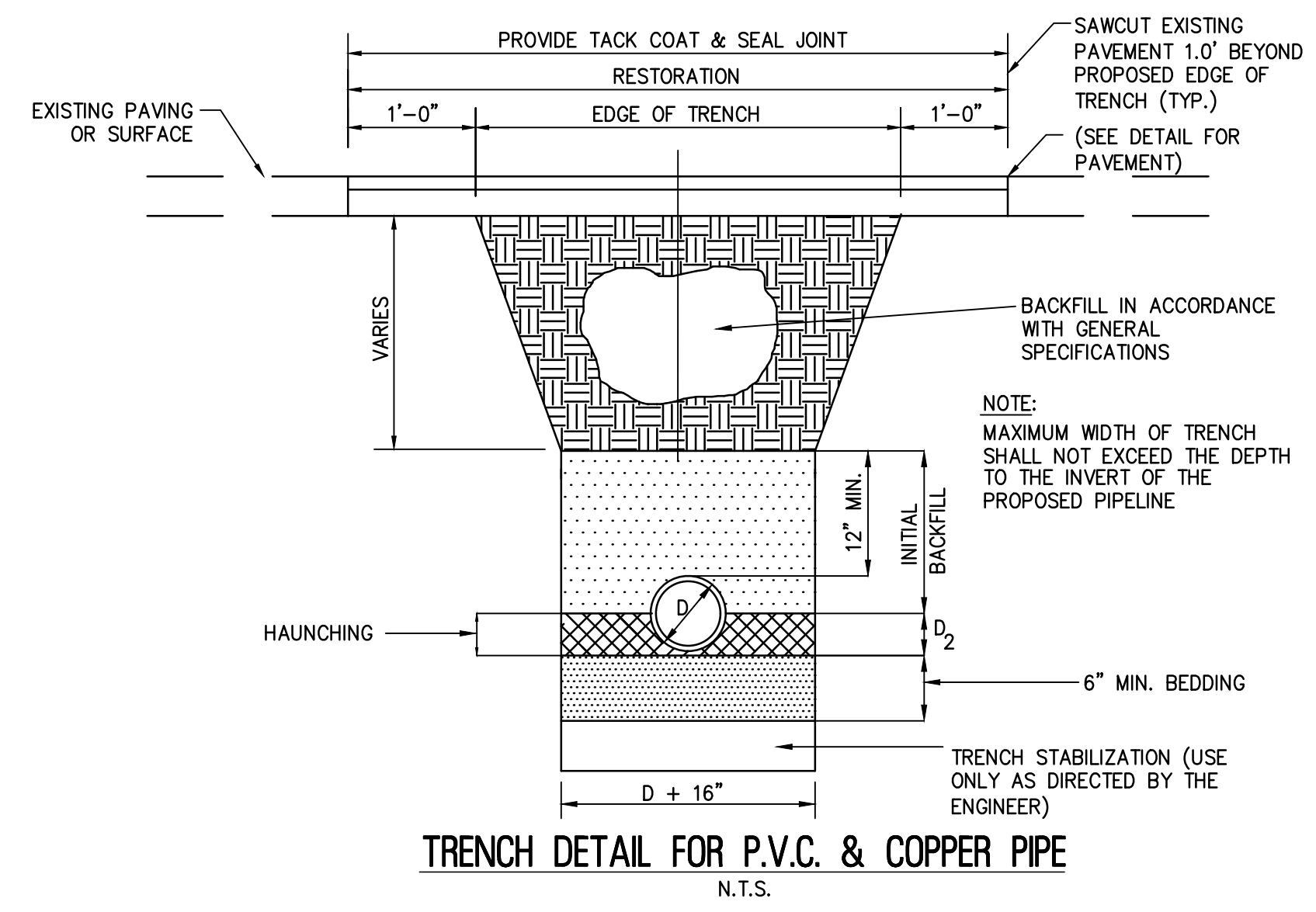
EXISTING TANK - PROFILE VIEW
N.T.S.

NOTE: THE TANK DETAILS ARE PROVIDED FOR A SIMILAR TANK.
THE DETAILS FOR THE TANK TO BE TRANSPORTED MAY DIFFER.

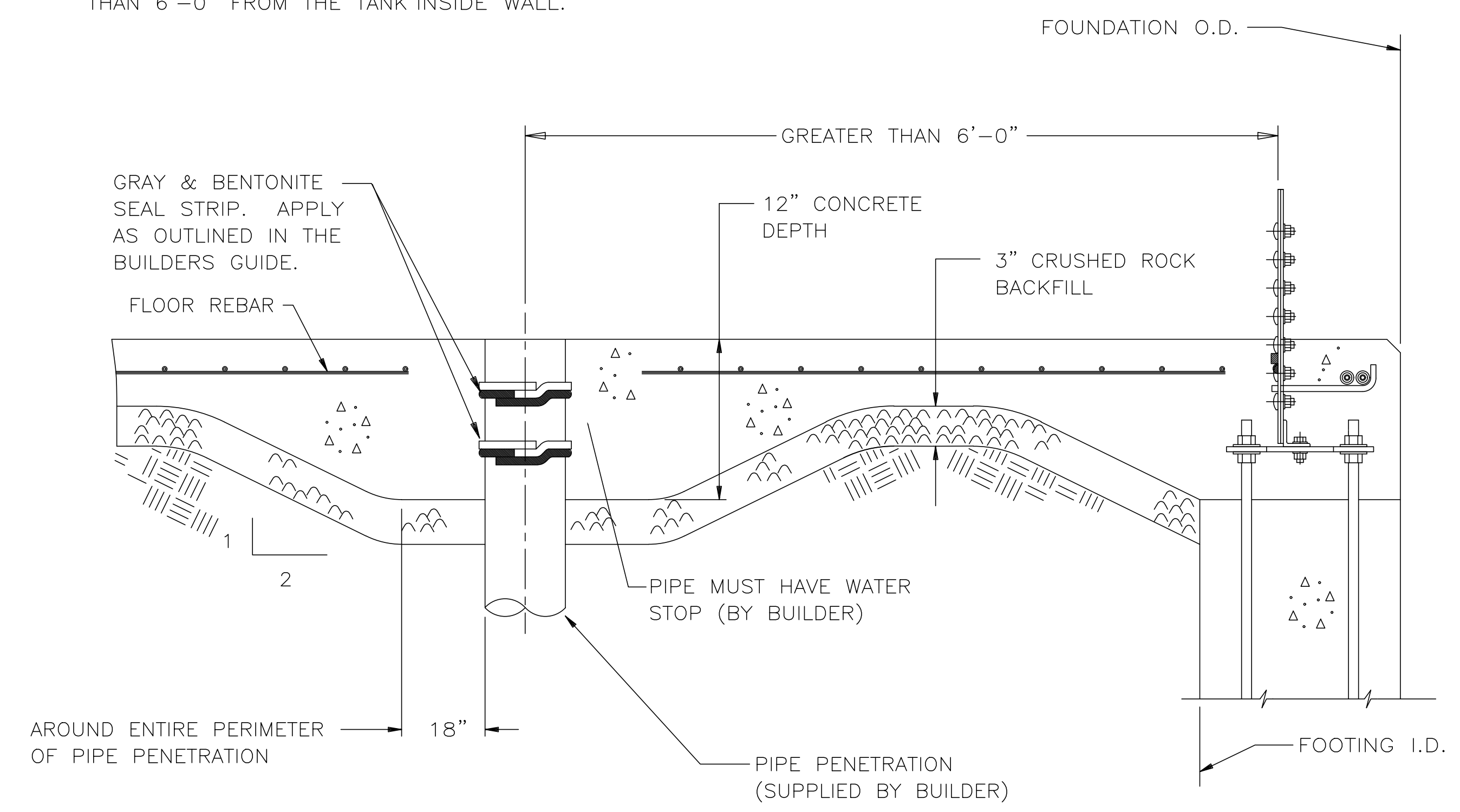


* THESE ITEMS TO BE SUPPLIED BY THE TANK MANUFACTURER.

SECTION THROUGH FOOTING
N.T.S.

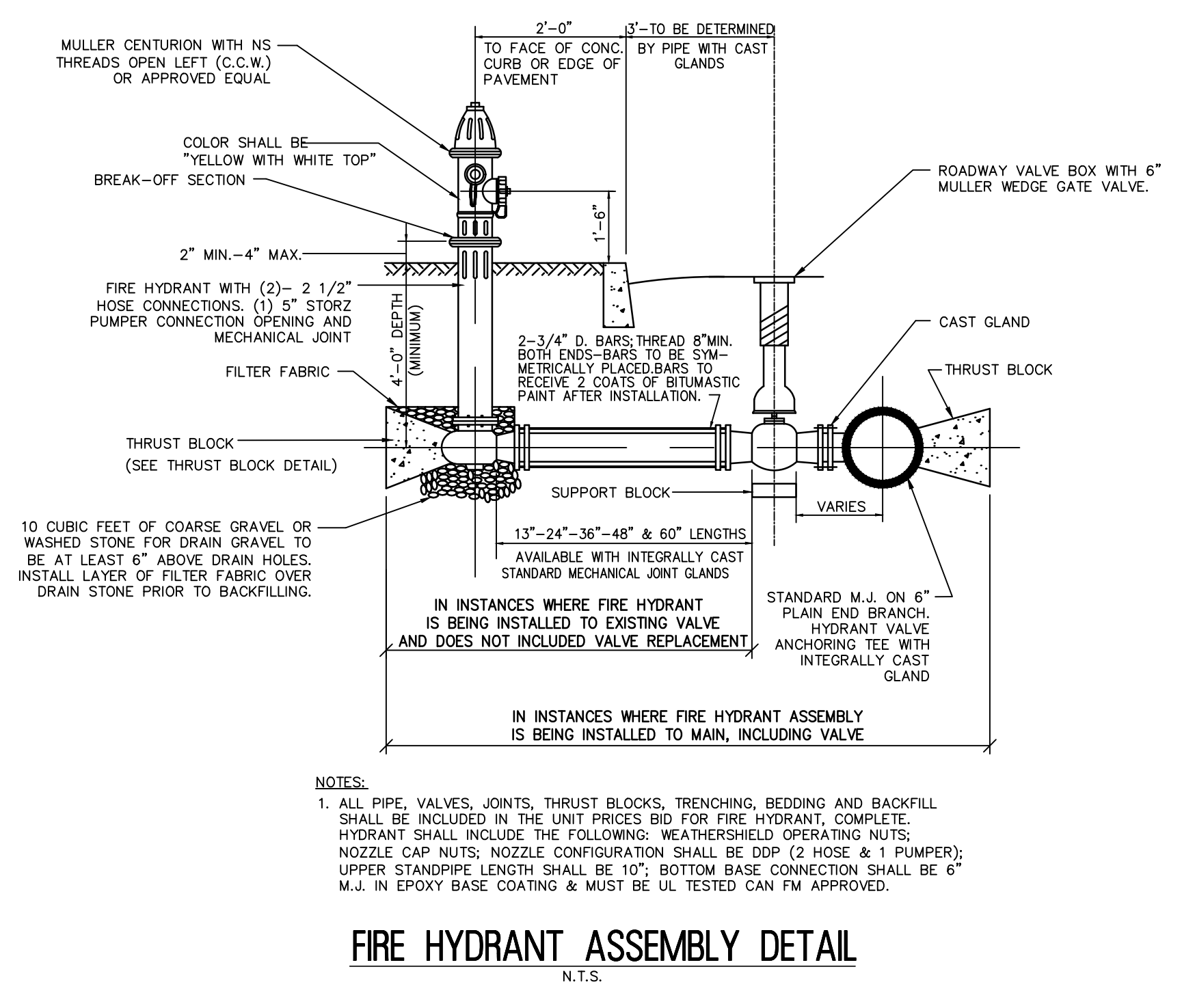


TYPICAL PIPE PENETRATION DETAIL THROUGH THE FOUNDATION FLOOR WHEN THE PIPE IS LOCATED GREATER THAN 6'-0" FROM THE TANK INSIDE WALL.



FOR FOUNDATION CONCRETE REINFORCEMENT STEEL REFER TO THE PROJECT SUBMITTAL DOCUMENTATION.

PIPE PENETRATION THROUGH FOUNDATION
N.T.S.



FIRE HYDRANT ASSEMBLY DETAIL
N.T.S.

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CONSTRUCTION DETAILS II
 ROSELAND BOROUGH
AUXILIARY WATER STORAGE TANK AT RIDGE ROAD GROUND STORAGE TANK
 NEW JERSEY
 ROSELAND BOROUGH ESSEX COUNTY

DRAWN BY:	DESIGN BY:	CHECKED BY:	SCALE:
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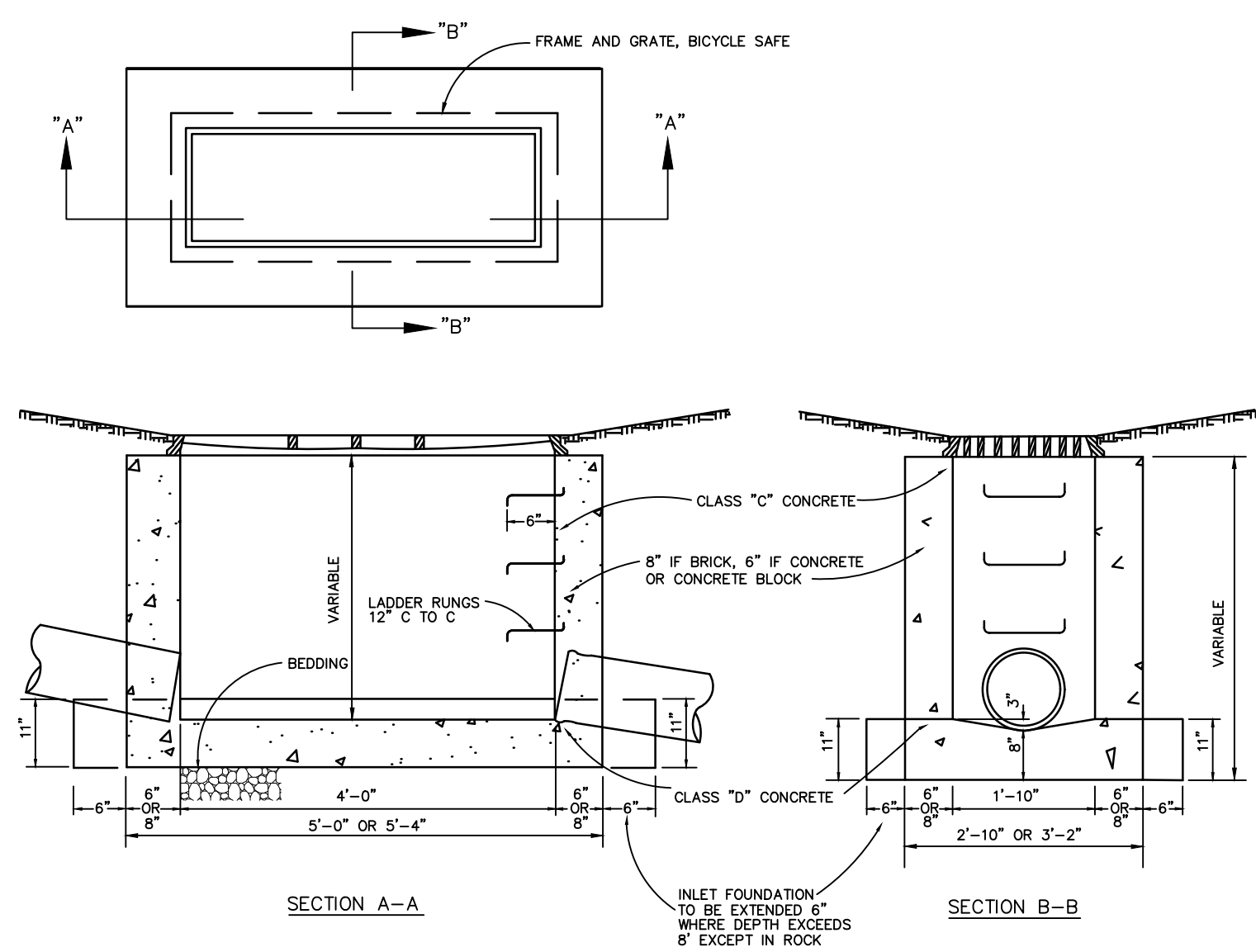
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 LOCATED IN: MANALAPAN
 DRAWING NO.: 3 OF 7
 DATED: 5/22/1996
 REVISED:

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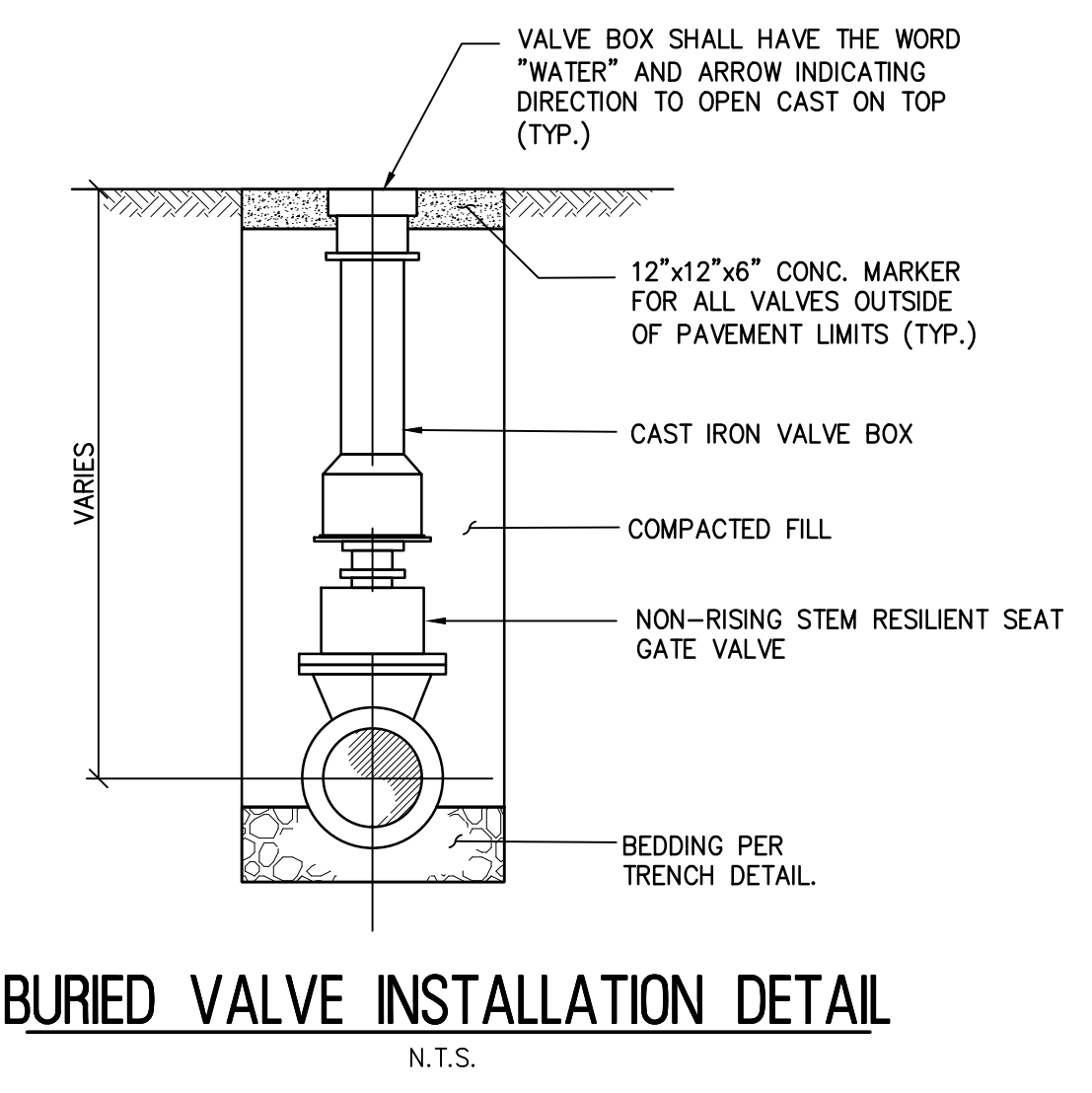
CONSTRUCTION DETAILS III
 ROSELAND BOROUGH
AUXILIARY WATER STORAGE TANK
AT RIDGE ROAD GROUND STORAGE TANK
 ROSELAND BOROUGH ESSEX COUNTY NEW JERSEY

DRAWN BY:	DESIGN BY:	CHECKED BY:	SCALE:
KK	KK	SC	AS NOTED
DATE:	SHEET No.:		
7/29/2022	D-3		
JOB No.:	07181023		

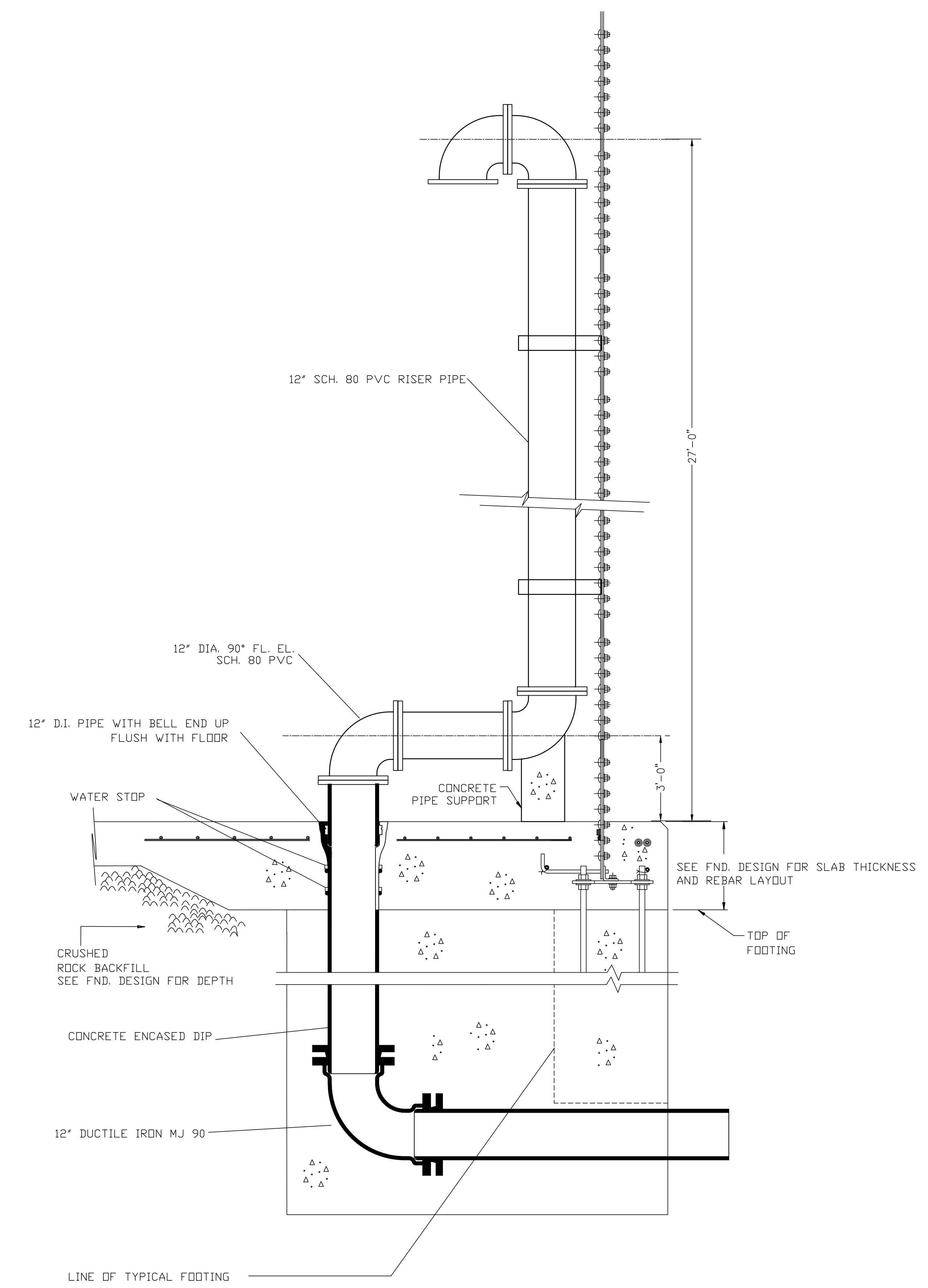


NOTES:
 INVERTS TO BE ELIMINATED IN BOTTOM OF TERMINAL INLETS. BOTTOM SHALL BE DISHED AND SLOPED TOWARDS THE OUTLET PIPE AT THE RATE OF 2" PER FOOT. THIS INLET MAY BE CONSTRUCTED OF BRICK, CONCRETE OR CONCRETE BLOCK. IF BRICK OR CONCRETE BLOCK IS USED THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE & THE OUTSIDE OF THE WALLS SHALL BE PLASTERED WITH 1/2" COAT BE DISHED AND SLOPPED 1:2 CEMENT SAND MORTAR.

TYPE "A" INLET DETAIL
 N.T.S.



BURIED VALVE INSTALLATION DETAIL
 N.T.S.



INLET PIPE THROUGH FOUNDATION
 N.T.S.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN WILL BE CONSTRUCTED IN ACCORDANCE WITH THE "NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL" LAST REVISED JULY 1999. THESE MEASURES WILL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. ALL SOIL TO BE EXPOSED OR STOCKPILED FOR A PERIOD OF GREATER THAN 60 DAYS, AND NOT UNDER ACTIVE CONSTRUCTION, WILL BE TEMPORARILY SEEDED AND SHALL BE OTHERWISE PROVIDED WITH VEGETATIVE COVER. THIS TEMPORARY COVER SHALL BE MAINTAINED UNTIL SUCH TIME WHEREBY PERMANENT RESTABILIZATION IS ESTABLISHED.
3. SEEDING DATES: THE FOLLOWING SEEDING DATES ARE BEST RECOMMENDED TO ESTABLISH PERMANENT VEGETATIVE COVER WITHIN MOST LOCATIONS IN THE HEPSCOD: SPRING- 3/1-5/15 AND FALL- 8/15-10/1.
4. SEDIMENT FENCES ARE TO BE PROPERLY TRENCHED AND MAINTAINED UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.
5. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY ONE OF THE PRACTICES ACCEPTED IN THE STANDARDS AND REMAIN UNTIL PERMANENT STABILIZATION HAS BEEN ESTABLISHED. STORM DRAINAGE OUTLET POINTS SHALL BE PROTECTED AS REQUIRED BEFORE THEY BECOME FUNCTIONAL.
6. MULCH MATERIALS SHALL BE UN-ROOTED SALT HAY OR SMALL GRASS STRAW APPLIED AT THE RATE OF 70-90 POUNDS PER 1000 SQUARE FEET (1.5-2.0 TONS/ACRE). ADDITIONAL REQUIRED MULCH PRACTICES ARE PRESCRIBED IN THE STANDARDS.
7. ALL EROSION CONTROL DEVICES SHALL BE PERIODICALLY INSPECTED, MAINTAINED AND CORRECTED BY THE CONTRACTOR, ANY DAMAGE INCURRED BY EROSION SHALL BE RECTIFIED IMMEDIATELY.
8. THE HUDSON-ESSEX-PASSAIC SOIL CONSERVATION DISTRICT WILL BE NOTIFIED IN WRITING AT LEAST 72 HOURS PRIOR TO ANY SOIL DISTURBING ACTIVITIES. FAX- (973) 364-0784 EMAIL- HEPSCOD@ERD.ZONENET
9. THE APPLICANT MUST OBTAIN A DISTRICT ISSUED REPORT-OF-COMPLIANCE PRIOR TO APPLYING FOR THE CERTIFICATE OF OCCUPANCY OR TEMPORARY CERTIFICATE OF OCCUPANCY FROM THE RESPECTIVE MUNICIPALITY, NJ-DEA OR ANY OTHER CONTROLLING AGENCY. CONTACT THE DISTRICT AND GIVE ADVANCED NOTICE UPON COMPLETION OF THE RESTABILIZATION MEASURES. A PERFORMANCE DEPOSIT MAY BE POSTED WITH THE DISTRICT WHEN WINTER WEATHER OR SNOW COVER PROHIBITS THE PROPER APPLICATION OF SEED, MULCH, FERTILIZER OR HYDRO-SEED.
10. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. DO NOT UTILIZE A FIRE OR GARDEN HOSE TO CLEAN ROADS UNLESS THE RUNOFF IS DIRECTED TO A PROPERLY DESIGNED AND FUNCTIONING SEDIMENT BASIN. ALL PUMP DOWATERING OPERATIONS SHALL BE DIRECTED TOWARD A FUNCTIONING SEDIMENT BASIN.
11. ALL SURFACES ARE TO BE PROVIDED WITH 6 INCHES OF TOPSOIL PRIOR TO RE-SEEDING.
12. ALL PLAN REVISIONS MUST BE SUBMITTED TO THE DISTRICT FOR PROPER REVIEW AND APPROVAL.
13. A CRUSHED STONE WHEEL CLEANING TRACKING-PAD IS TO BE INSTALLED AT ALL SITE EXITS USING 2 1/2" CRUSHED STONE TO A MINIMUM LENGTH OF 50 FEET. ALL DRIVEWAYS MUST BE PROVIDED WITH CRUSHED STONE UNTIL PAVING IS COMPLETE.
14. MAXIMUM SOIL SLOPES SHALL NOT EXCEED 2:1 UNLESS ADDITIONAL MEASURES ARE TAKEN AND APPROVED BY THE SOIL CONSERVATION DISTRICT. THESE "SPECIAL" MEASURES SHALL BE DESIGNED BY THE APPLICANT'S ENGINEER.
15. THE HUDSON-ESSEX-PASSAIC SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING, FOR THE SALE OF ANY PORTION OF THE PROJECT OR FOR THE SALE OF INDIVIDUAL LOTS. NEW OWNERS INFORMATION SHALL BE PROVIDED. ADDITIONAL MEASURES DEEMED NECESSARY BY DISTRICT OFFICIALS SHALL BE IMPLEMENTED AS CONDITIONS WARRANT.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

1. SITE PREPARATION
 - A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
 - B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
2. SEEDED PREPARATION
 - A. APPLY LIMESTONE AND FERTILIZER. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDES) AS FOLLOWS:

SOIL TEXTURE	TONS/ACRE	LBS./1000 SQ. FT.
CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

 PULVERIZED DOLOMITIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK-TRENTON LINE.
 WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEEDED IS PREPARED.
 C. INSPECT SEEDED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AS ABOVE.
 D. SOILS HIGH ON SULFIDES OR HAVING A PH OF 4 OR LESS SHOULD BE MULCHED ONLY.
 3. SEEDING
 - A. SEE TEMPORARY SEED MIXTURE FOR SPECIES AND APPLICATION RATES.
 - B. APPLY SEED UNIFORMLY BY HAND, CYCLONE(CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. MULCH SHALL NOT BE INCLUDED IN A HYDRO-SEEDER TANK WITH SEED. SEED SHALL BE INCORPORATED INTO THE SOIL BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COURSE TEXTURED SOIL.
 - C. AFTER SEEDING, FIRING THE SOIL SHALL BE PERFORMED WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDING EMERGENCE.
 4. MULCHING

MULCHING IS REQUIRED ON ALL SEEDING.

 - A. MULCH MATERIALS SHOULD BE UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1 1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION MUST BE DOUBLE THE LOWER RATE. MULCH CHIPPER-BLOWERS MUST NOT GRIND THE MATERIAL.
 - B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75% TO 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
 - C. MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.
 1. PEG AND TWINE- DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRSS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
 2. MULCH NETTING- STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTING TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
 3. CRIMPER(MULCH ANCHORING TOOL)- A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
 4. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

PERMANENT SEEDING MIXTURE (DRY)

THIS SEEDING MIXTURE IS COMPOSED OF DROUGHT-TOLERANT SPECIES WHICH CAN THRIVE WITH LOW MAINTENANCE. THE PROPRIETARY NAME OF THE MIXTURE IS RECLAIM CONSERVATION MIX-DRY FORMULA AS MANUFACTURED BY LOFTIS, INC., BOUND BROOK, N.J. 08805, (800)528-3890. A MIXTURE OF EQUAL QUALITY MAY BE SUBSTITUTED IF APPROVED BY OUR OFFICE.

%	COMMON NAME	BOTANICAL NAME
40	CLEMFINE TALL FESCUE	FESTUCA ARUNDINACEA "CLEMFINE"
20	WEeping LOvEGRASS	ERAGRISTIS CURVULA
10	RELiANT HARD FESCUE	FESTUCA LONGICOLA "RELiANT"
10	JAMESTOWN CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA "JAMESTOWN"
10	PALMER PERENNIAL RYE	LOLIUM PERENNE "PALMER"
5	WHiTE CLover	TRIFOLIUM REPENS
5	BLAcKWEll SWiTCHEGRASS	PANICUM VIRGATUM "BLAcKWEll"

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE FOUR (4) POUNDS/1000 SQUARE FEET OR 175 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE APRIL 1-MAY 31 AND AUGUST 16-OCTOBER 15.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

PERMANENT SEEDING MIXTURE (MOIST)

THIS SEEDING MIXTURE IS COMPOSED OF MOISTURE-TOLERANT SPECIES WHICH CAN THRIVE WITH LOW MAINTENANCE. THE PROPRIETARY NAME OF THE MIXTURE IS RECLAIM CONSERVATION MIX-MOIST FORMULA AS MANUFACTURED BY LOFTIS, INC., BOUND BROOK, N.J. 08805, (800)528-3890. A MIXTURE OF EQUAL QUALITY MAY BE SUBSTITUTED IF APPROVED BY OUR OFFICE.

%	COMMON NAME	BOTANICAL NAME
55	CLEMFINE TALL FESCUE	FESTUCA ARUNDINACEA "CLEMFINE"
15	NASSAU KENTUCKY BLUEGRASS	POA PRATENSIS "NASSAU"
10	PALMER PERENNIAL RYE	LOLIUM PERENNE "PALMER"
10	LEASER POA TRIVIALIS	POA TRIVIALIS "LASER"
5	STREAWEr PERSIC	AGROSTIS ALBA "STREAWEr"
5	RED CANARY GRASS	PHALARIS ARUNDINACEA

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE FIVE (5) POUNDS/1000 SQUARE FEET OR 220 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE APRIL 1-MAY 31 AND AUGUST 16-OCTOBER 15.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

TEMPORARY SEEDING MIXTURE

THIS SEEDING MIXTURE IS COMPOSED OF A SINGLE SPECIES WHICH GERMINATES QUICKLY IN ORDER TO REDUCE SOIL EROSION UNTIL A PERMANENT VEGETATIVE COVER CAN BE COVER ESTABLISHED. A MIXTURE OF EQUAL QUALITY MAY BE SUBSTITUTED IF APPROVED BY OUR OFFICE.

%	COMMON NAME	BOTANICAL NAME
100%	PERENNIAL RYE GRASS	LOLIUM PERENNE

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE ONE (1) POUND/1000 SQUARE FEET OR 100 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE MARCH 1-MAY 15 AND AUGUST 15-OCTOBER 1.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

1. SITE PREPARATION
 - A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDED PREPARATION, SEEDING, MULCH APPLICATION, AND MAINTENANCE.
 - B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

TOP SOILING

- TOPSOIL SHOULD BE USED WHERE SOILS ARE: SANDS, GRAVELY SOILS, CLAYS, SILTY CLAYS, VERY SHALLOW, OR WHERE THEY ARE EXTREMELY AOID (LESS THAN PH4.0) OR SALTY (COND. ACTIVITY GREATER THAN 1.0 MILLIMOHS PER CENTIMETER), OR WHERE TOPSOIL IS AVAILABLE ON SITE AND ASSURANCE OF IMPROVED VEGETATIVE GROWTH IS DESIRED.
1. MATERIALS
 - A. TOPSOIL SHOULD BE FRIABLE AND LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES AND CONTAIN NO TOXIC SUBSTANCE THAT MAY BE HARMFUL TO PLANT GROWTH. A PH RANGE OF 5.0-7.5 IS ACCEPTABLE. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIMOHS PER CENTIMETER). TOPSOIL HAULED IN FROM OFF SITE SHOULD HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.
 2. STRIPPING AND STOCKPILING
 - A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND/OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
 - B. STRIPPING SHOULD BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
 - C. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING SOIL PH TO 6.5. IN LACK OF SOIL TESTS, SEE LIME RATE GUIDE IN SEEDED PREPARATION FOR PERMANENT VEGETATIVE COVER.
 - D. A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
 - E. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
 - F. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH TEMPORARY SEEDING STANDARDS PREVIOUSLY DESCRIBED HEREIN.

SITE PREPARATION

- A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.
 - B. SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT AND LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL PH TO 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.
 - C. IMMEDIATELY PRIOR TO TOPSOIL DISTRIBUTION, THE SURFACE SHOULD BE SCARIFIED TO PROVIDE A GOOD BOND WITH THE TOPSOIL.
 - D. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS.
4. APPLYING TOPSOIL
 - A. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE, I.E., LESS THAN FIELD CAPACITY.
 - B. A UNIFORM APPLICATION TO A DEPTH OF 8 INCHES (UNSETTLED) IS RECOMMENDED. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE.

PERMANT SEEDING MIXTURE

1. PEG AND TWINE- DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRSS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTING- STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTING TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
3. CRIMPER(MULCH ANCHORING TOOL)- A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
4. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

STORMWATER MAINTENANCE SCHEDULE

A CONTINUOUS MAINTENANCE PROGRAM IS CRITICAL TO THE LONG-TERM PERFORMANCE OF THE OVERALL STORMWATER MANAGEMENT SYSTEM AT THE LIVINGSTON TOWNSHIP MUNICIPAL SERVICES AND POLICE BUILDING. THIS MAINTENANCE PROGRAM WILL BE PERFORMED BY THE FOLLOWING:

ROBERT SCHAEFER
 LIVINGSTON TOWNSHIP ENGINEER & STORMWATER
 MANAGEMENT COORDINATOR
 TOWNSHIP OF LIVINGSTON
 ENGINEERING DEPARTMENT
 357 S. LIVINGSTON AVENUE
 LIVINGSTON, NJ 07039
 PHONE: 973-535-7950
 E-MAIL: engineering@livingstonnj.org

PERMANENT SEEDING MIXTURE (DRY)

THIS SEEDING MIXTURE IS COMPOSED OF DROUGHT-TOLERANT SPECIES WHICH CAN THRIVE WITH LOW MAINTENANCE. THE PROPRIETARY NAME OF THE MIXTURE IS RECLAIM CONSERVATION MIX-DRY FORMULA AS MANUFACTURED BY LOFTIS, INC., BOUND BROOK, N.J. 08805, (800)528-3890. A MIXTURE OF EQUAL QUALITY MAY BE SUBSTITUTED IF APPROVED BY OUR OFFICE.

%	COMMON NAME	BOTANICAL NAME
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20	WEeping LOvEGRASS	ERAGRISTIS CURVULA
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10	PALMER PERENNIAL RYE	LOLIUM PERENNE "PALMER"
5	WHiTE CLover	TRIFOLIUM REPENS
5	BLAcKWEll SWiTCHEGRASS	PANICUM VIRGATUM "BLAcKWEll"

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE FOUR (4) POUNDS/1000 SQUARE FEET OR 175 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE APRIL 1-MAY 31 AND AUGUST 16-OCTOBER 15.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

PERMANENT SEEDING MIXTURE (MOIST)

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10	LEASER POA TRIVIALIS	POA TRIVIALIS "LASER"
5	STREAWEr PERSIC	AGROSTIS ALBA "STREAWEr"
5	RED CANARY GRASS	PHALARIS ARUNDINACEA

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE FIVE (5) POUNDS/1000 SQUARE FEET OR 220 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE APRIL 1-MAY 31 AND AUGUST 16-OCTOBER 15.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

TEMPORARY SEEDING MIXTURE

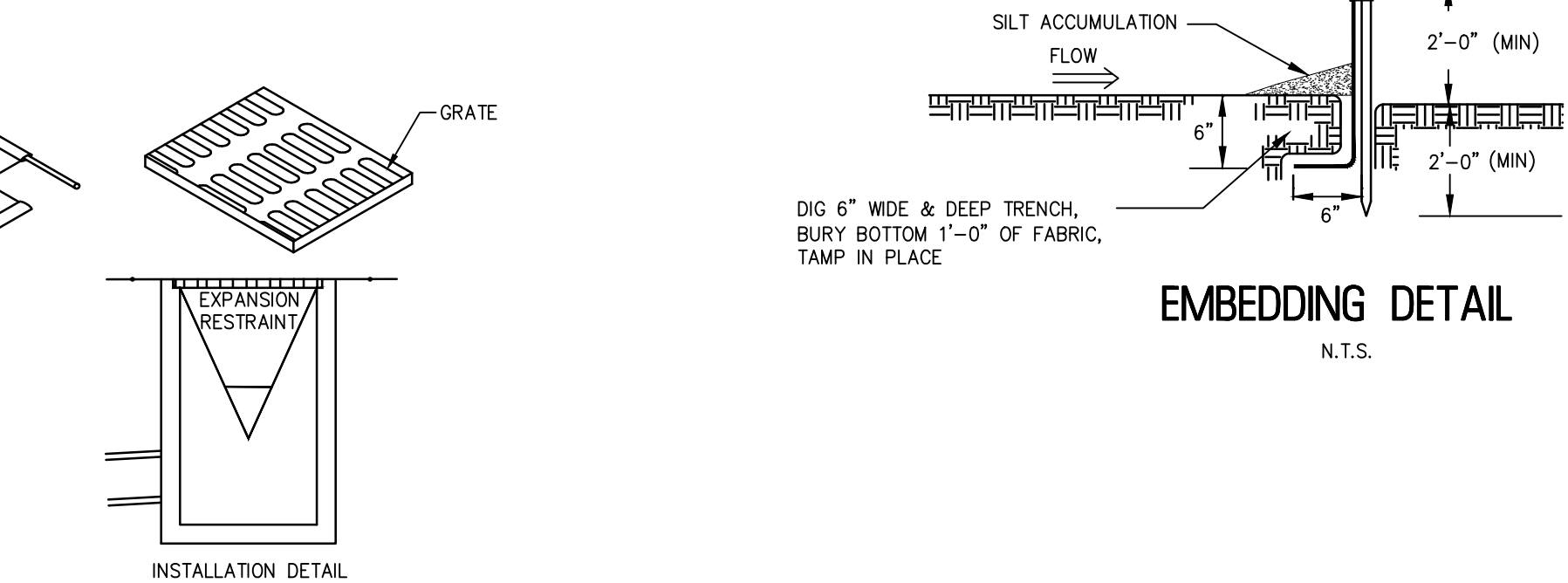
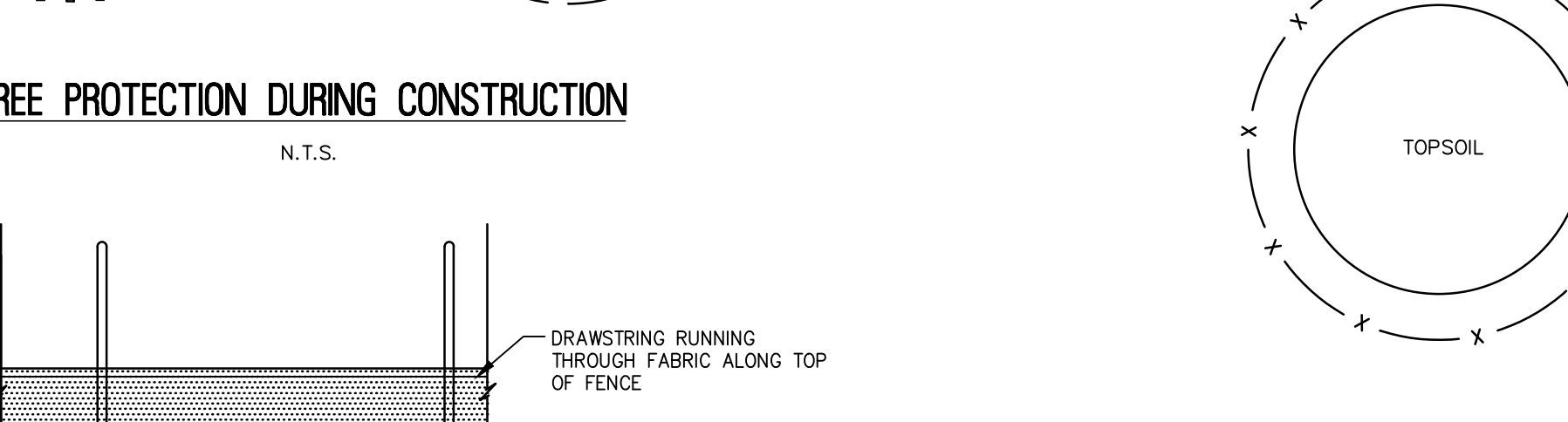
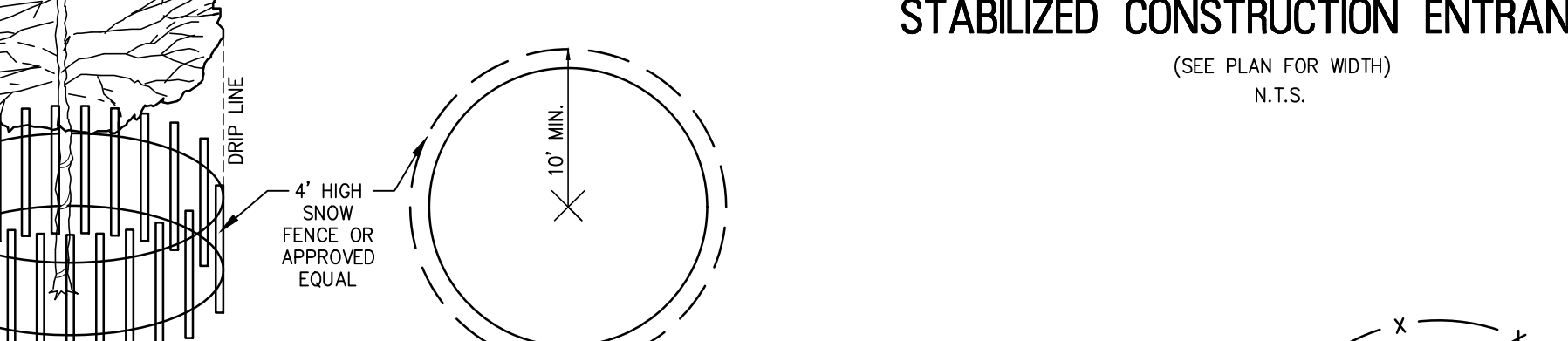
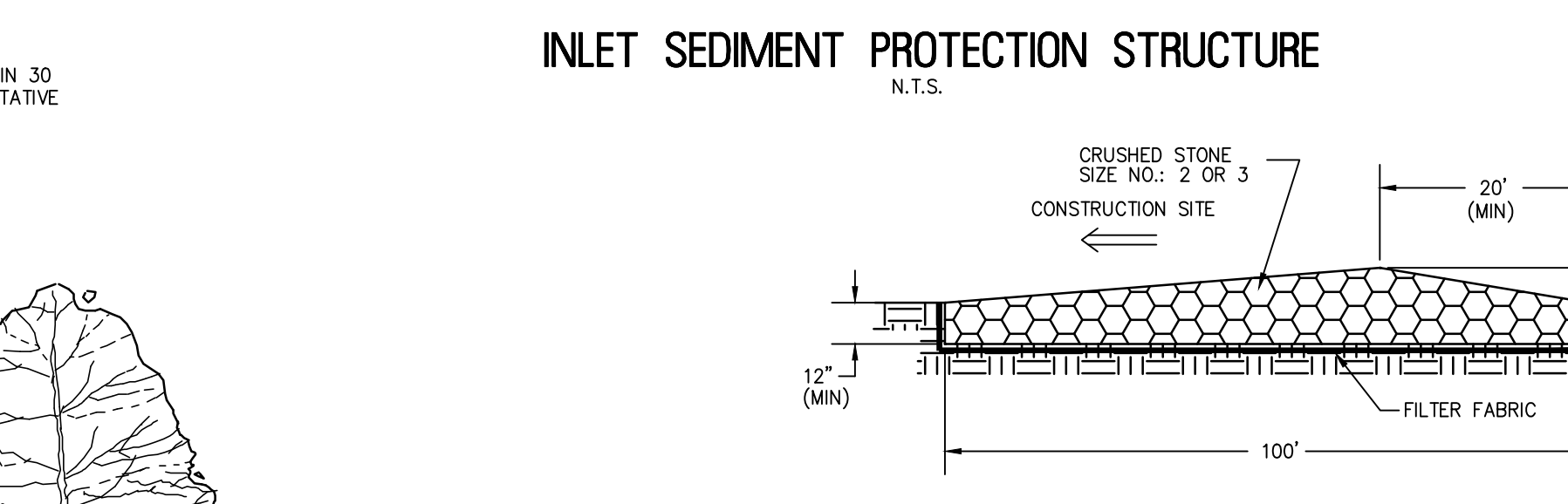
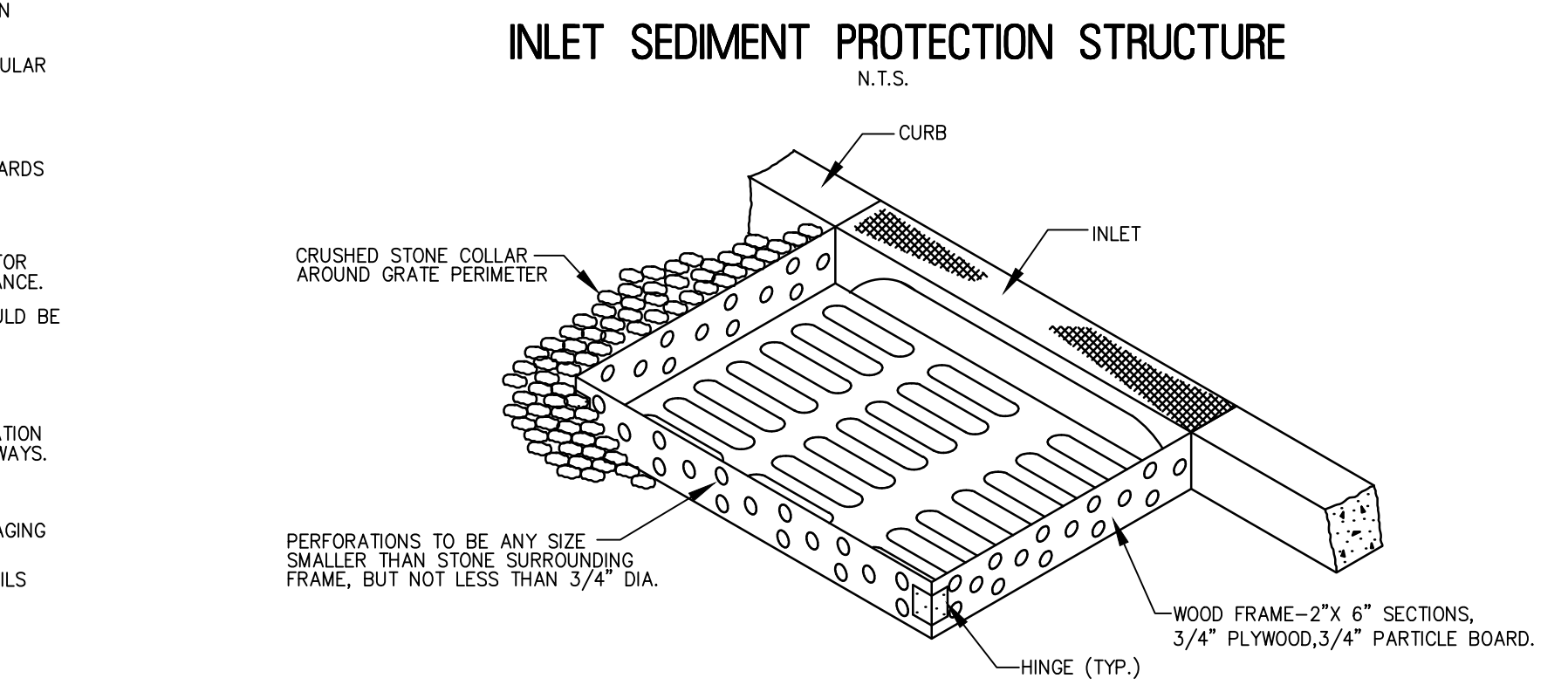
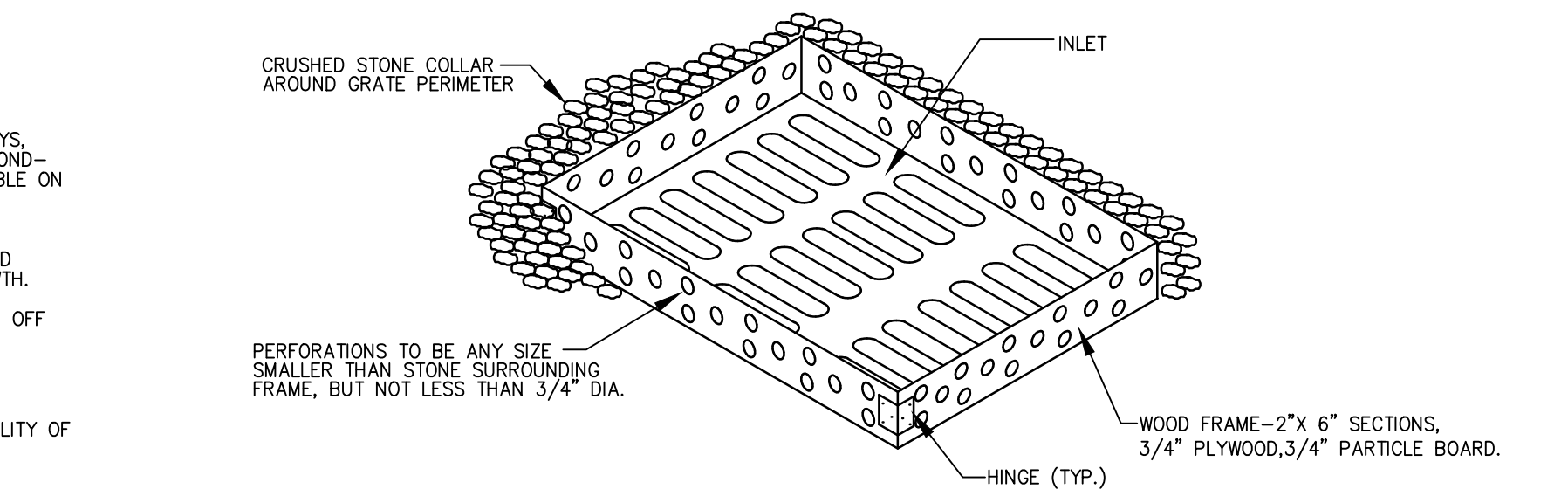
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%	COMMON NAME	BOTANICAL NAME
100%	PERENNIAL RYE GRASS	LOLIUM PERENNE

THE MINIMUM APPLICATION RATE FOR THIS SEEDING MIXTURE SHALL BE ONE (1) POUND/1000 SQUARE FEET OR 100 POUNDS/ACRE.
 RECOMMENDED SEEDING PERIODS ARE MARCH 1-MAY 15 AND AUGUST 15-OCTOBER 1.
 SUMMER SEEDING SHALL BE PERFORMED ONLY IF ADEQUATE IRRIGATION IS PROVIDED TO ENSURE SUCCESSFUL GERMINATION.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

1. SITE PREPARATION
 - A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDED PREPARATION, SEEDING, MULCH APPLICATION, AND MAINTENANCE.
 - B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.



THIS PLAN TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY!

PLANS WHICH DO NOT BEAR AN EMBOSSED SEAL ARE NOT VALID.

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NO.	DATE	BY	CHK.	REVISION

SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS
 ROSELAND BOROUGH
 AUXILIARY WATER STORAGE TANK
 AT RIDGE ROAD GROUND STORAGE TANK
 ROSELAND BOROUGH
 ESSEX COUNTY
 NEW JERSEY
 FILED FOR PUBLIC REVIEW AT THE OFFICE OF THE PLANNING BOARD, ROSELAND BOROUGH, ESSEX COUNTY, NEW JERSEY, ON 07/29/2022.

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