

# "SETTLER'S GLEN"

## COMPREHENSIVE PERMIT PLAN

### RED BROOK ROAD

### WAREHAM, MASSACHUSETTS

**OWNER:** TGC I EMNACA, LLC  
 C/O GROSSMAN COMPANY, INC.  
 1266 FURNACE BROOK PARKWAY, SUITE 100  
 QUINCY, MA 02169

**APPLICANT:** TGC I EMNACA, LLC  
 C/O GROSSMAN COMPANY, INC.  
 1266 FURNACE BROOK PARKWAY, SUITE 100  
 QUINCY, MA 02169



— U.S.G.S. LOCUS PLAN —  
 SCALE: 1"=1000'



— AERIAL OVERVIEW —  
 SCALE: 1"=500'

**SITE DATA:**

ASSESSORS MAP: 8 / LOT 1007C  
 ADDRESS: 3128B CRANBERRY HIGHWAY  
 ZONING DISTRICT: MULTIPLE RESIDENCE 30 (MR-30)  
 OVERLAY DISTRICT: GROUND WATER PROTECTION OVERLAY DISTRICT  
 WATER SUPPLY: TOWN WATER  
 SANITARY SEWER: TOWN SEWER

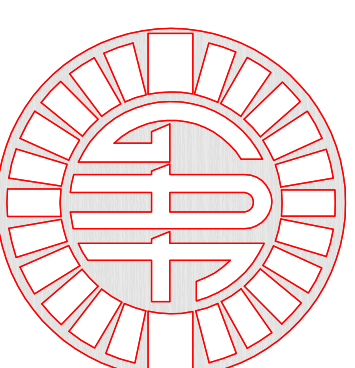
**ZONING DATA:**

ZONING DISTRICT	MR-30	MR-30	PROVIDED
	(1) FAMILY DWELLING	(2) FAMILY DWELLING	
	30,000 S.F.*	45,000 S.F.*	156,708 S.F.
	MIN. LOT AREA: 150'	200'	247.66'
	MIN. FRONT SETBACK: 20'	10'	21'
	MIN. SIDE SETBACK: 10'	10'	16'
	MIN. REAR SETBACK: 10'	35'	110'
	MAX. BLDG. HEIGHT: 35'	25%	21.9%
	MAX. IMPERV. COVERAGE: 25%	NR	45.4%

\* (80% OF THE MINIMUM REQUIRED LOT AREA MUST BE CONTIGUOUS UPLAND)

**FLOOD ZONE DATE:**

THE PROJECT IS LOCATED WITHIN FLOOD ZONE X. REFER TO THE F.E.M.A. FLOOD INSURANCE RATE MAP PANEL NUMBER 25023C0494I, DATED JULY 17, 2012.



**G.A.F. ENGINEERING, INC.**  
 PROFESSIONAL ENGINEERS & LAND SURVEYORS  
 266 MAIN STREET, WAREHAM, MA 02571  
 TEL: (508) 295-6600 FAX: (508) 295-6634  
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 JANUARY 12, 2021

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**PARKING DATA:**

REQUIRED: 2 PARKING SPACES FOR EACH DWELLING UNIT  
 20 DWELLING UNITS=40 PARKING SPACES  
 TOTAL REQUIRED=40 PARKING SPACES  
 PROVIDED:  
 40 PARKING SPACES  
 20 (2) CAR GARAGES=40 PARKING SPACES  
 TOTAL PROVIDED=80 PARKING SPACES

PERMIT SET  
 (NOT FOR CONSTRUCTION)

JOB NO.: 18-9247	DATE: JAN. 12, 2021	DRAWN BY: JMP	REV.	DATE	BY	APP'D	DESCRIPTION
		CHECKED BY: WFM					
JOB NO.: 18-9247	DATE: JAN. 12, 2021	JOB NO.: 18-9247					
		SCALE: AS NOTED					

**"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN COVER SHEET**

RED BROOK ROAD WAREHAM, MA

PREPARED FOR:  
**TGC I EMNACA, LLC**

1266 FURNACE BROOK PARKWAY QUINCY, MA

**G.A.F. ENGINEERING, INC.**  
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APPROVED BY:

APPROVED BY:



**GENERAL NOTES:**

- ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN, WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS AND IN PART FROM FIELD SURVEYS AND ARE APPROXIMATE ONLY. LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CHARGE OF UTILITIES NOT SHOWN ON THIS PLAN. SEE MGL CHAPTER 370, ACTS OF 1963. CONTRACTORS MUST CALL DIG-SAFE AT (1-888-DIG-SAFE OR 811) G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- EXISTING CONDITIONS INFORMATION IS BASED ON ACTUAL FIELD SURVEY, PRIVATE UTILITY PLANS, AND OTHER AVAILABLE SOURCES. FIELD SURVEY WAS PERFORMED BY G.A.F. ENGINEERING, INC., ON VARIOUS DATES AND MOST RECENTLY IN SEPTEMBER OF 2019.
- THE CONTRACTOR SHALL COORDINATE AND OBTAIN ALL REQUIRED PERMITS, GIVE ALL NOTICES, COMPLY WITH ALL LAWS AND REGULATIONS, AND PAY ALL FEES ASSOCIATED WITH THE INSTALLATION OF THIS WORK.
- THE CONTRACTOR SHALL FIELD VERIFY, PRIOR TO CONSTRUCTION ALL EXISTING UNDERGROUND UTILITY LOCATIONS AND POINTS OF INTERCONNECTION.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, SUPERVISION, TOOLS, EQUIPMENT, FUEL, POWER, SAFETY, UTILITIES AND INCIDENTS NECESSARY FOR THE FURNISHING, PERFORMANCE, TESTING, START-UP AND COMPLETION OF THIS WORK.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER OF ANY CONFLICTS DISCOVERED IN THE FIELD.
- ANY CHANGES TO THESE SITE PLANS THAT ARE MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS AND REPORTED TO THE OWNER AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN EXCAVATION AND TRENCH PERMIT PURSUANT TO 520 CMR 14.00 AS APPLICABLE PRIOR TO THE START OF CONSTRUCTION.

**CONSTRUCTION NOTES:**

- IN GENERAL, THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY FITTING, CHANGE IN DIRECTION OR DETAIL OF CONSTRUCTION.
- THE LOCATION OF UTILITIES WERE OBTAINED FROM VARIOUS SOURCES OF INFORMATION. THE EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION (1-888-DIG-SAFE OR 811) G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF PERSONNEL, AND PROTECTION OF PROPERTY AT THE SITE OR ADJACENT THERETO INCLUDING TREES, SHRUBS, LAWNS, PAVEMENTS, ROADWAYS, STRUCTURES AND UNDERGROUND UTILITIES NOT DESIGNED FOR REMOVAL, RELOCATION, OR REPLACEMENT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THIS WORK.
- ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND OF GOOD QUALITY.
- THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THIS WORK.
- ALL PAVEMENT MARKINGS DISTURBED BY CONSTRUCTION SHALL BE RESTORED AS PART OF THIS WORK.
- THE CONTRACTOR SHALL INSTITUTE ALL SAFETY MEASURES NECESSARY TO PROTECT THE PUBLIC SAFETY. THIS SHALL INCLUDE, BUT NOT LIMITED TO, BARRICADES, SIGNS, LIGHTING, FENCES, POLICE DETAILS, AND ANY OTHER MEANS AS DIRECTED. NO TRENCHES ARE TO REMAIN OPEN OVERNIGHT.
- ELEVATIONS ARE IN FEET AND TENTHS AND ARE BASED ON THE DATUM OF NAVD-88.
- SIDE SLOPE GRADING SHALL BE AS NOTED ON THE SITE PLANS.
- ALL SIDE SLOPES SHALL BE DRESSED WITH 4 INCHES OF TOPSOIL, WHERE SIDE SLOPES EXCEED 3:1. PROVIDE AN EROSION CONTROL BLANKET OVER THE PLANTED SEED BED. SEE PLAN FOR LOCATIONS.
- PERMANENT SEEDING (BEFORE SEPTEMBER 15) LIME TO PH OF 6.5 ACCORDING TO SOIL TEST OR APPLY AT THE RATE OF 100 TO 150 LBS. PER 1000 SQUARE FEET. APPLY 10-20-20 FERTILIZER AT 1,000 LBS. PER ACRE, INCORPORATE LIME AND FERTILIZER IN TOP 4 INCHES OF SOIL. SEED 100 LBS. PER ACRE OF THE FOLLOWING SEED MIX:  
 PIPE BERGENT SEED  
 CREEPING RED FESCUE 30-35%  
 PERENNIAL RYEGRASS 20-25%  
 KENTUCKY BLUEGRASS 10-15%  
 ANNUAL RYEGRASS 10-15%  
 HYDRO SEEDING IS AN ALTERNATIVE FOR THIS APPLICATION, A MIXTURE OF SEED WATER AND MULCH IS SPRAYED ON THE SEED BED COMBINING THREE (3) SEPARATE ACTIONS INTO ONE (1) OPERATION
- ALL SEWER AND PLUMBING WORK SHALL CONFORM WITH 248 CMR 10.00 UNIFORM STATE PLUMBING CODE AND THE TOWN OF WAREHAM SEWER DEPARTMENTS SPECIFICATIONS.
- ALL METHODS AND MATERIALS SHALL CONFORM WITH MAGSDOT STANDARDS AND SPECIFICATIONS, AND THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
- ALL UTILITY INSTALLATIONS SHALL BE IN CONFORMANCE WITH ALL APPLICABLE TOWN, STATE AND FEDERAL REQUIREMENTS & REGULATIONS.
- DEWATERING IF REQUIRED SHALL BE DIRECTED TO A 5' MIN. DIAMETER RING OF HAYBALES OR A DIRTBAG. CONTRACTOR SHALL PROVIDE AND MAINTAIN DEWATERING EQUIPMENT FOR THE CONTROL, COLLECTION AND DISPOSAL OF GROUND AND SURFACE WATER WHERE NECESSARY TO COMPLETE THE WORK.

**EROSION CONTROL NOTES:**

- THE SITE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SUITABLE EROSION AND SEDIMENTATION CONTROL DEVICES ON SITE DURING CONSTRUCTION AS REQUIRED TO PREVENT SILT FROM LEAVING THE SITE. SILT WILL NOT BE ALLOWED BEYOND CONSTRUCTION LIMITS. ADDITIONAL PROTECTION: ON-SITE PROTECTION MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNFRESHEN CONDITIONS OR ACCIDENTS.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLANS DOES NOT PROVIDE SUFFICIENT EROSION AND SEDIMENT CONTROL, ADDITIONAL CONTROL MEASURES SHALL BE IMPLEMENTED. CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING EROSION CONTROL DEVICES WHICH BECOME INEFFECTIVE.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL GRADING AND OTHER LAND DISTURBING ACTIVITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY BUILDUP OF SEDIMENT WHICH ESCAPES FROM THE SITE.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING SILT AND DEBRIS OUT OF ALL STORM DRAINAGE STRUCTURES UPON THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL TEMPORARY EROSION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FINES LEAVED AGAINST THE SITE FOR VIOLATIONS OF EROSION CONTROL REGULATIONS.
- CONTRACTOR SHALL PROVIDE TEMPORARY GROUND COVER FOR ALL AREAS WITH EXPOSED SOIL WHICH WILL NOT BE DISTURBED BY GRADING OPERATIONS FOR A PERIOD OF THIRTY DAYS OR MORE.
- IF WORK ON THIS PROJECT IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL FACILITIES IN GOOD CONDITION DURING THE SUSPENSION OF WORK.
- SPRINKLE OR APPLY DUST SUPPRESSERS TO MINIMIZE DUST AT THE CONSTRUCTION SITE. MAINTAIN DUST CONTROL MEASURES UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- THE CONTRACTOR WILL ALSO NEED TO COMPLY TO ANY ORDER OF CONDITIONS THAT MAY BE ISSUED BY THE TOWN OF WAREHAM CONSERVATION COMMISSION.

**DRAINAGE OPERATION AND MAINTENANCE SCHEDULE:**

- THE OPERATION AND MAINTENANCE (OM&M) SCHEDULE DURING THE CONSTRUCTION PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. THE DUTIES BELOW SHALL BE FOLLOWED TO ENSURE THE PROPER CONSTRUCTION AND FUNCTION OF THE DRAINAGE FACILITIES.
- IN CONJUNCTION WITH THE SITE CONSTRUCTION, ALL DRAINAGE STRUCTURES SHALL BE INSTALLED AND THE AFFECTED AREAS STABILIZED (LOAM AND SEED) HYDROSEED, MULCH, RIP-RAP, ETC.). PERMANENT STABILIZATION OF THESE AREAS SHALL BE STARTED AS SOON AS POSSIBLE.
  - EROSION CONTROL SHALL BE PLACED ALONG THE LIMITS OF WORK WHERE SHOWN ON THE PLAN.
  - ALL CATCH BASINS SHALL HAVE TEMPORARY SILT SOCKS OR AN APPROVED EQUAL INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THEM AT THE COMPLETION OF CONSTRUCTION. THE CATCH BASINS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIALS REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
  - STONE FILLED TRENCHES SHALL BE COVERED WITH AN ADDITIONAL TEMPORARY LAYER OF FILTER FABRIC UNTIL THE ABOVE GRADIENT SLOPE IS STABILIZED. IF THERE IS ANY EVIDENCE OF SEDIMENT ENTERING THE TRENCHES, THE AFFECTED AREA OF THE TRENCH SHALL BE FULLY RECONSTRUCTED INCLUDING THE FILTER FABRIC.
  - THE SEDIMENT FOREBAY AND INFILTRATION BASIN SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL LOCAL REQUIREMENTS.
  - ALL AREAS SHALL BE INSPECTED WEEKLY, AND AFTER LARGE STORMS, IF THERE IS EVIDENCE OF EROSION, REOCCURRENCE. THIS SCHEDULE MUST BE ADHERED TO BY THE CONTRACTOR UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

**POST-CONSTRUCTION OPERATION AND MAINTENANCE PLAN:**

UPON THE COMPLETION OF CONSTRUCTION, MAINTENANCE SHALL BE CONDUCTED BY THE OWNER OR OWNER'S AGENT ON THE SITE. THE FOLLOWING SHALL BE CARRIED OUT BY THE RESPONSIBLE PARTY AND SHALL BE ADHERED TO THROUGHOUT THE LIFE OF THE DRAINAGE FACILITIES.

- STREET SWEEPING IS AN EFFECTIVE NONSTRUCTURAL SOURCE CONTROL THAT WILL REMOVE SEDIMENT FROM PAVED SURFACES. STREET SWEEPING SHOULD BE DONE BY THE USE OF A HIGH EFFICIENCY VACUUM SWEEPER OR REGENERATIVE AIR SWEEPER. STREET SWEEPING SHALL BE DONE TWICE PER YEAR, ONCE REMOVED FROM PAVED SURFACES. THE SWEEPINGS MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS APPROVED BY MASSDEP (SEE POLICY # BAW-18-001: REUSE & DISPOSAL OF STREET SWEEPINGS).
- DEEP SLUMP CATCH BASINS ARE UNDERGROUND RETENTION SYSTEMS DESIGNED TO REMOVE TRASH, DEBRIS AND COARSE SEDIMENT FROM STORMWATER RUNOFF AND SERVE AS TEMPORARY SILT CONTAINMENT DEVICES. DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM CATCH BASINS ON A REGULAR BASIS. LASTING TIMES PERIODS SHALL BE USED TO PREVENT OVERFLOW. CATCH BASINS SHALL BE CLEANED AT LEAST ONCE PER YEAR. THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT. SEDIMENT SHALL BE REMOVED THROUGH THE USE OF A VACUUM TRUCK. SEDIMENT MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS ALREADY APPROVED BY MASSDEP (SEE MASSDEP POLICY ON MANAGEMENT OF CATCH BASIN CLEANINGS). IF THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS, THE CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE MASSDEP HAZARDOUS WASTE REGULATIONS. 310 CMR 30.00 AND HANDLED AS HAZARDOUS WASTE.
- SEDIMENT FOREBAY IS AN EXCAVATED PIT, BERMED AREA DESIGNED TO SLOW INCOMING STORMWATER RUNOFF AND MAINTAINING THE GRADIENT OF SUB-DRENCH SLOPES. SEDIMENT FOREBAYS SHALL BE DESIGNED AND MAINTAINED TO HOLD AT LEAST 30 (3) MINUTES PER YEAR. THE OWNER OR GRASSEE (E) THE GRASSES SHOULD GET AFTER THAT SHALL BE (6) INCHES PER YEAR. THE OWNER SHOULD REMOVE THE GRASSES AFTER FOR SIGNS OF PINNING CULTURES, AND REPAIR AS NEEDED. AFTER REMOVING SEDIMENT, RESEED ANY VEGETATION DAMAGED DURING THE CLEAN-OUT BY EITHER RESEEDING OR REGRASSING. WHEN RESEEDING, INCORPORATE PRACTICES SUCH AS HYDROSEEDING WITH A TACKLER, BLANKET OR SIMILAR PRACTICE TO ENSURE THAT NO SCOUR OCCURS IN THE FOREBAY, WHILE THE SEEDS GERMINATE AND DEVELOP ROOTS.
- INFILTRATION BASIN AREAS SHALL BE INSPECTED AT LEAST FOUR TIMES PER YEAR TO ENSURE THE BASINS ARE OPERATING AS INTENDED. ALSO INSPECT THE BASINS DURING AND AFTER MAJOR STORM EVENTS TO DETERMINE IF THE BASINS ARE MEETING THE EXPECTED DETENTION TIMES. POTENTIAL PROBLEMS TO BE MONITORED INCLUDE: INFILTRATION STOPPAGE, INFILTRATION RATES, INFILTRATION ON THE EMBANKMENT, SEDIMENT ACCUMULATION, ROOTS, AND EROSION WITHIN THE BASIN AND BANKS. MAKE ANY NECESSARY REPAIRS IMMEDIATELY. MOW THE UPPER-STAGE, SIDE SLOPES AND EMBANKMENTS AT LEAST TWICE PER YEAR. REMOVE SEDIMENT AS NECESSARY, BUT AT LEAST ONCE EVERY FIVE YEARS. SEDIMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
- STONE FILLED TRENCHES SHALL BE INSPECTED DURING AND 24 HOURS AFTER ALL MAJOR STORM EVENTS TO LOOK FOR FOUNDED WATER. IF THERE IS EVIDENCE OF FOUNDED WATER AT THE SURFACE OF THE TRENCH, THE TRENCH SHALL BE REPAIRED IMMEDIATELY. THE TRENCH SHALL BE REPAIRED BY REMOVING THE AGGREGATE AND FILTER FABRIC. IF WATER IS POUNDED INSIDE THE TRENCH, THEN THE TRENCH HAS FAILED. IN THIS CASE REMOVE ALL ACCUMULATED SEDIMENT, STONE AND FILTER FABRIC, THE BOTTOM OF THE TRENCH MUST BE SCRAPED AND TILED TO INDUCE INFILTRATION AND REPLACE WITH NEW STONE AND FILTER FABRIC. INSPECT STONE TRENCHES EVERY 6 MONTHS AND ROUTINELY REMOVE DEBRIS, TRASH, LEAVES, AND ANY SEDIMENT FROM THE SURFACE OF THE TRENCH, ADD STONE IF NECESSARY.

**DRAINAGE INSTALLATION NOTES:**

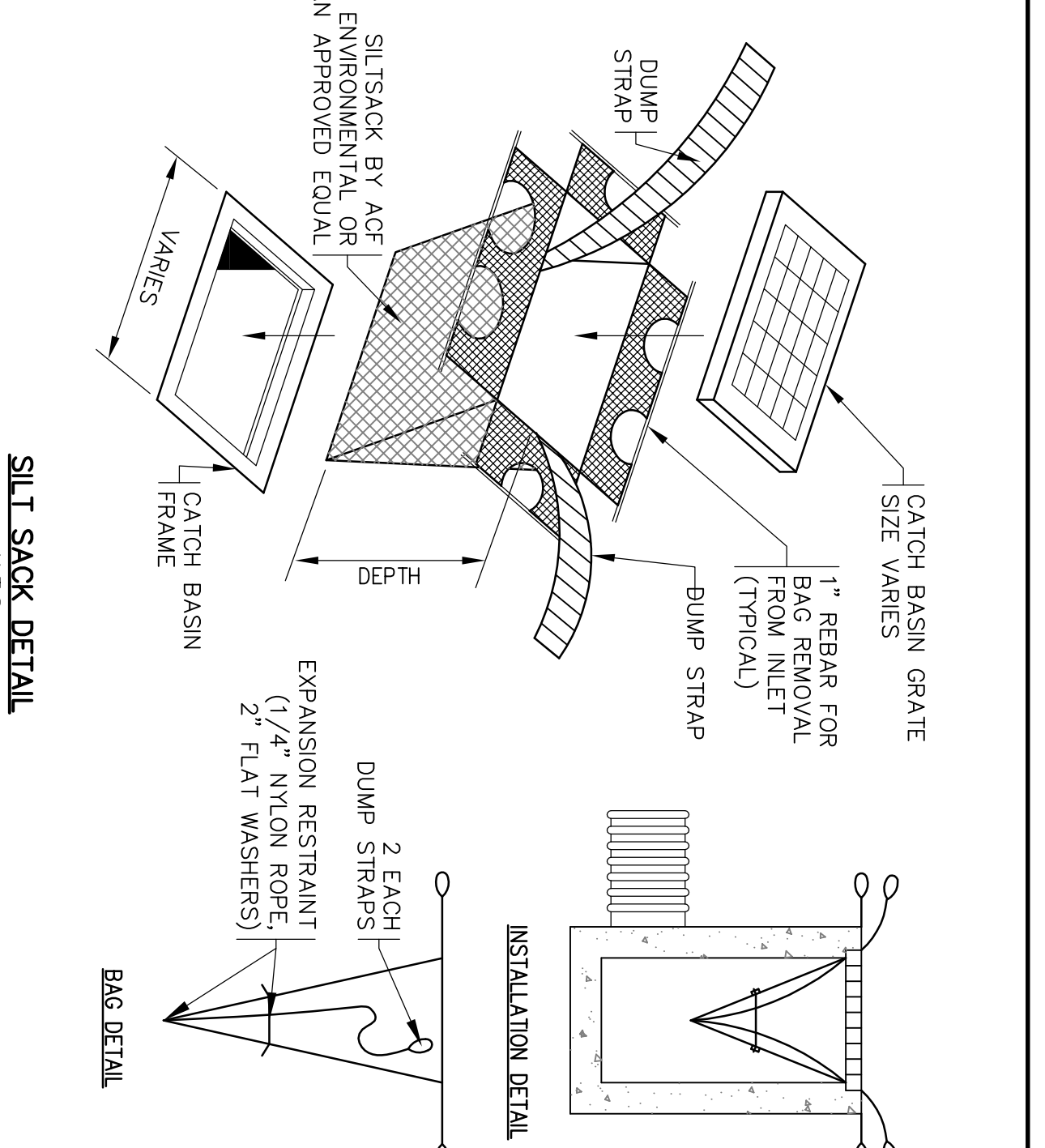
- ALL DRAINAGE PIPES, UNLESS OTHERWISE NOTED, ARE TO BE ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. REFER TO PLAN FOR LOCATION, SIZES AND SLOPES.
- ALL ROOF DRAIN PIPES, UNLESS OTHERWISE NOTED, ARE TO BE 4" ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. MINIMUM SLOPE TO BE 1:00K. REFER TO PLAN FOR LOCATION.
- MIN. COVER ON PIPES SHALL NOT BE LESS THAN 1.5 FEET.
- WHERE REQUIRED ALL PIPE PERFORATIONS SHALL BE AASHTO CLASS II.
- ALL WORK AND MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
- WHERE REQUIRED CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS AND REPLACE WITH CLEAN SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.

**WATER INSTALLATION NOTES:**

- ALL WATER MAINS, SERVICES, GATE VALVES/GATE BOX, CURB STOPS, HYDRANTS, PRESS. REG. & METHOD OF INSTALLATION SHALL CONFORM TO THE DISTRICT AND ONSET WATER DEPARTMENT'S RULES & REGULATIONS.
- WATER MAIN SHALL BE TESTED & DISINFECTED IN ACCORDANCE WITH THE ONSET FIRE DISTRICT REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH THE ONSET FIRE DISTRICT FOR THE INSPECTIONS OF THE WATER MAIN INSTALLATION.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE INSTALLATION OF THE WATER SERVICE.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE REGULATIONS FROM THE ONSET FIRE DISTRICT BEFORE PROCEEDING WITH THE INSTALLATION OF THE WATER SERVICE.

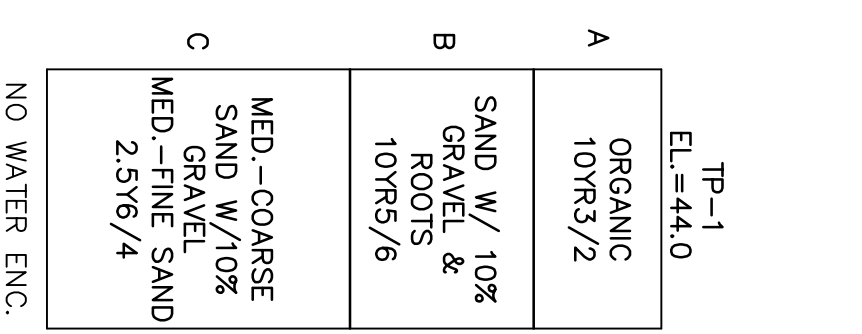
**ABBREVIATIONS**

AC	ASBESTIC CONCRETE	ASBESTIC CONCRETE
ADS	ADVANCED DRAINAGE SYSTEM	ADVANCED DRAINAGE SYSTEM
APPROX.	APPROXIMATE	APPROXIMATE
BT	BOTTOM OF CURB	BOTTOM OF CURB
BR	BRIQUETTES OF CONCRETE	BRIQUETTES OF CONCRETE
BUILD	BUILDING	BUILDING
BW	BORDERING OF WALL	BORDERING OF WALL
CB	CATCH BASIN	CATCH BASIN
CB/BH	CONCRETE BOUND/DRILL HOLE	CONCRETE BOUND/DRILL HOLE
CCB	CAPE COB BERM	CAPE COB BERM
CEM	CEMENT	CEMENT
C.I.	CAST IRON	CAST IRON
CONC.	CONCRETE	CONCRETE
C.O.D.	CLEANED DUCTILE IRON	CLEANED DUCTILE IRON
CHP	CORROGATED METAL PIPE	CORROGATED METAL PIPE
C.P.P.	CORROGATED PLASTIC PIPE	CORROGATED PLASTIC PIPE
C.T.B.	CONCRETE THRUST BLOCK	CONCRETE THRUST BLOCK
DIA	DIAMETER	DIAMETER
DMH	DRAIN MANHOLE	DRAIN MANHOLE
DS	DUCTILE IRON	DUCTILE IRON
DSS	DRAINAGE CONTROL STRUCTURE	DRAINAGE CONTROL STRUCTURE
ELV.	ELEVATION	ELEVATION
EVY.FL.	EDGE OF FINISH	EDGE OF FINISH
EX.	EXISTING	EXISTING
F.D.C.	FIRE DEPARTMENT CONNECTION	FIRE DEPARTMENT CONNECTION
F.E.S.	FLARED END SECTION	FLARED END SECTION
F.F.E.	FINISHED FLOOR ELEVATION	FINISHED FLOOR ELEVATION
FND.	FOUND	FOUND
FP	FIRE PROTECTION	FIRE PROTECTION
GC.GV	GAS GATE, GAS VALVE	GAS GATE, GAS VALVE
H.C.	HANDICAP PARKING	HANDICAP PARKING
H.D.P.E.	HIGH DENSITY POLYETHYLENE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT	HYDRANT
INV.	INVERT	INVERT
MAX.	MAXIMUM	MAXIMUM
MED.	MEDIUM	MEDIUM
MIN.	MINIMUM	MINIMUM
N.T.S.	NOT TO SCALE	NOT TO SCALE
N/F.	NOW OR FORMERLY	NOW OR FORMERLY
OH/W	OVERHEAD WIRE	OVERHEAD WIRE
PCC	PRECAST CONCRETE CURBING	PRECAST CONCRETE CURBING
POLY	POLYVINYL CHLORIDE PIPE	POLYVINYL CHLORIDE PIPE
PROP.	PROPOSED	PROPOSED
RCP	REINFORCED CONCRETE PIPE	REINFORCED CONCRETE PIPE
R.F.P.	REINFORCED ASPHALT PRODUCT	REINFORCED ASPHALT PRODUCT
RAD	RADIUS	RADIUS
R&S	REMOVE AND DISPOSE	REMOVE AND DISPOSE
RS/SH	STONE BOUND/DRILL HOLE	STONE BOUND/DRILL HOLE
SCC	SLOPED GRANITE CURBING	SLOPED GRANITE CURBING
SMH	SEWER MANHOLE	SEWER MANHOLE
STA	STATION	STATION
TC	TOP OF CURB	TOP OF CURB
TOP OF WALL	TOP OF WALL	TOP OF WALL
TP	TOP OF FOUNDATION	TOP OF FOUNDATION
UP OF ROAD	UP OF ROAD	UP OF ROAD
VE	UNDERGROUND ELECTRIC	UNDERGROUND ELECTRIC
VCC	VERTICAL GRANITE CURB	VERTICAL GRANITE CURB
W	WATER	WATER
WG	WATER GATE, WATER VALVE	WATER GATE, WATER VALVE
WQS	WATER QUALITY STRUCTURE	WATER QUALITY STRUCTURE
WCS	WATER	WATER



**TEST PIT DATA**

DATE OF TESTING: AUGUST 25, 2020  
 PERFORMED BY: BRIAN GRADY, G.A.F. ENGINEERING, INC.  
 REFER TO THE EXISTING CONDITIONS PLAN FOR TEST PIT LOCATIONS



**LEGEND**

EXISTING	DESC.	PROPOSED
55	CONTOURS	55
53.5	SPOT GRADES	53.5
---	WETLANDS	---
---	50' NO ACTIVITY ZONE	---
---	100' BUFFER ZONE	---
---	200' RIVERFRONT AREA	---
---	F.E.M.A. FLOOD ZONE	---
D	DRAIN LINE	D
RD	ROOF DRAIN LINE	RD
CB	CATCH BASIN (CB)	CB
DMH	DRAIN MANHOLE (DMH)	DMH
EHM	ELECTRIC MANHOLE (EHM)	EHM
UE	UNDERGROUND UTILITIES	UE
OH/W	OVERHEAD WIRES	OH/W
U	UTILITY POLE	U
GP	GUY POLE	GP
W	WATER GATE VALVE	W
W	WATER SHUTOFF/CURB STOP	W
W	HYDRANT	W
W	POST INDICATOR VALVE	W
W	WATER LINE	W
FP	FIRE PROTECTION LINE	FP
SMH	SEWER MANHOLE (SMH)	SMH
S	SEWER LINE	S
S	TREE/BRUSH LINE	S
S	GAS LINE	S
S	GAS GATE/VALVE	S
S	GAS SHUTOFF	S
S	GAS METER	S
S	SIGN	S
S	BOUND	S
S	TEST PIT/PERC TEST	S
S	SILT FENCE	S
S	GLARD RAIL	S
S	FLARED END SECTION	S
S	STONE WALL	S
S	WELL	S

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**"SETTLER'S GLEN"**  
**COMPREHENSIVE PERMIT PLAN**  
**GENERAL NOTES & LEGEND**  
 RED BROOK ROAD WAREHAM, MA  
 PREPARED FOR:  
**TGCI EMNACA, LLC**

1266 FURNACE BROOK PARKWAY QUINCY, MA

DATE:	JAN. 12, 2021
DRAWN BY:	JMP
CHECKED BY:	WFM
JOB NO.:	18-9247
SCALE:	AS NOTED

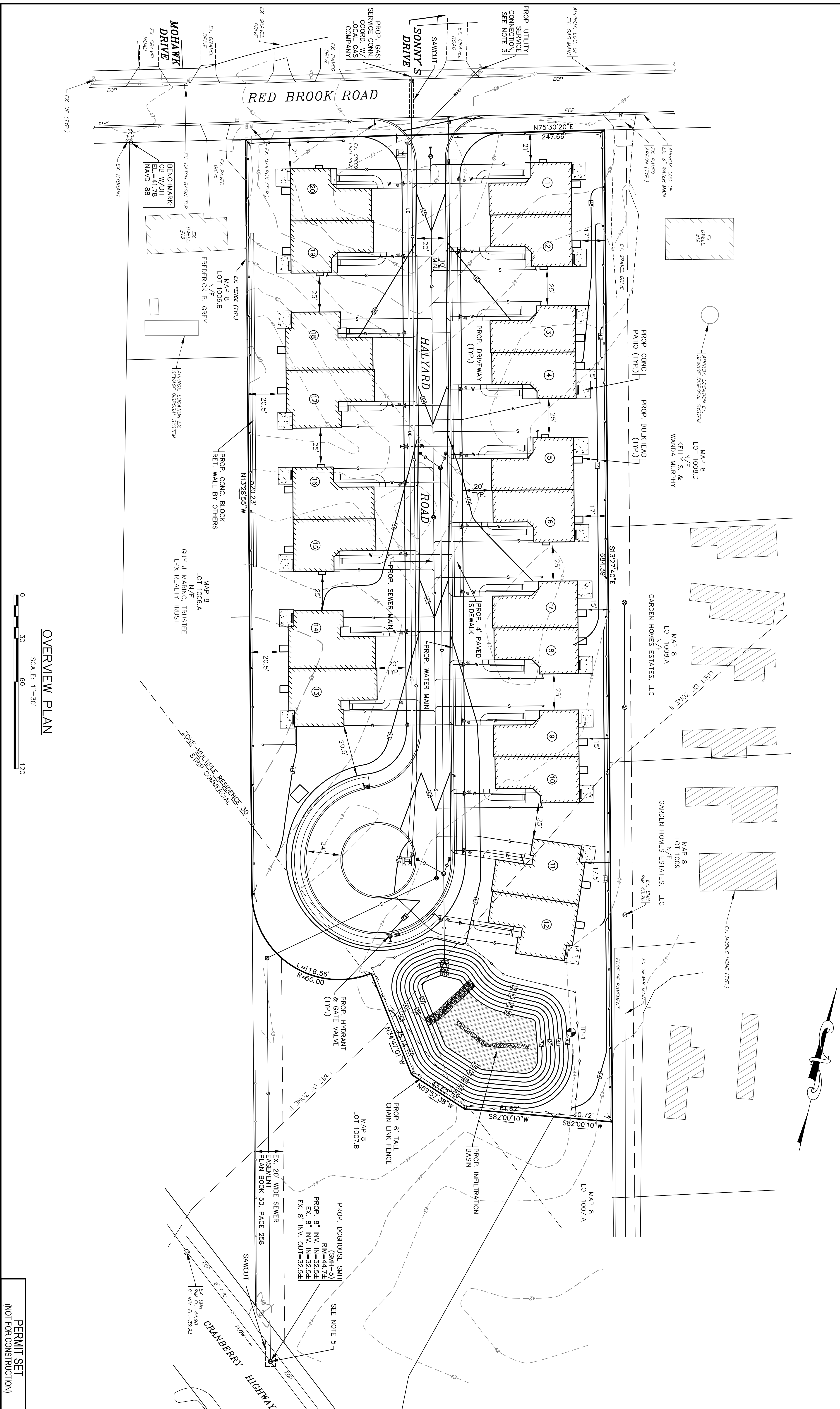
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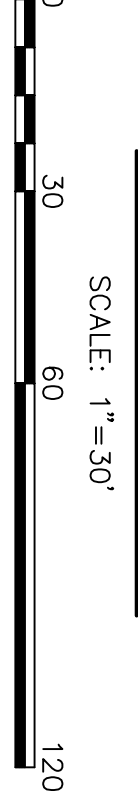


**NOTES:**

1. REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED DWELLING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS.
2. ALL SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF WAREHAM SEWER COMMISSIONERS RULES AND REGULATIONS.
3. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY PRIOR TO CONNECTION.
4. REFER TO PAVEMENT SAWCUT/TRENCH REPAIR DETAIL ON SHEET 10.
5. CONTRACTOR SHALL CONFIRM EXISTING SEWER ELEVATION PRIOR TO CONSTRUCTION.



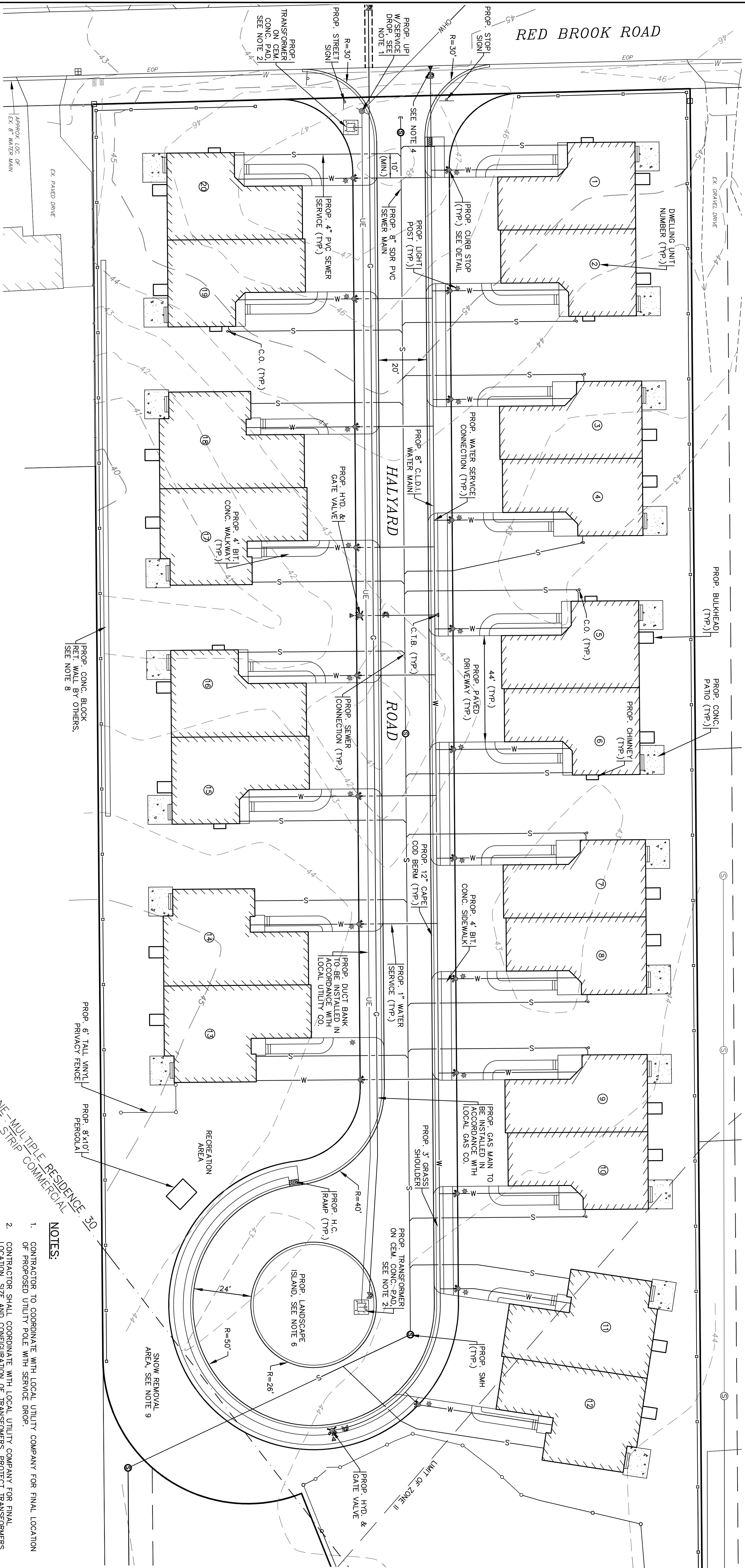
**OVERVIEW PLAN**



PERMIT SET  
DWG. 4 OF 11  
(NOT FOR CONSTRUCTION)

<p><b>"SETTLER'S GLEN"</b> COMPREHENSIVE PERMIT PLAN OVERVIEW PLAN</p> <p>RED BROOK ROAD WAREHAM, MA</p> <p>PREPARED FOR: <b>TGCI EMNACA, LLC</b></p> <p>1266 FURNACE BROOK PARKWAY QUINCY, MA</p>	<p><b>G.A.F. ENGINEERING, INC.</b> PROFESSIONAL ENGINEERS &amp; LAND SURVEYORS 266 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-6600 FAX: (508) 295-6634 E-MAIL: gaf@gaf-eng.com</p> <p><small>COPYRIGHT © 2021 G.A.F. ENGINEERING, INC. NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED, OR TRANSMITTED BY ANY MEANS, ELECTRONIC AND/OR MECHANICAL, PHOTOCOPIING, WHAT-SO-EVER, WITHOUT THE EXPRESS WRITTEN CONSENT OF G.A.F. ENGINEERING, INC. WITH THE EXCEPTION OF ANY REGULATORY AUTHORITY WHICH MAY REPRODUCE IT IN CONJUNCTION WITH THE PERFORMANCE OF OFFICIAL BUSINESS UNDER ITS JURISDICTION. ANY MODIFICATIONS MADE TO THIS DOCUMENT WITHOUT THE EXPRESS WRITTEN CONSENT OF G.A.F. ENGINEERING, INC. SHALL RENDER IT UNUSABLE.</small></p>	APPROVED BY:	APPROVED BY:	DATE: JAN. 12, 2021						
				DRAWN BY: JMP	CHECKED BY: WFM	JOB NO.: 18-9247				
				SCALE: 1" = 30'						
					REV.	DATE	BY	APP'D	DESCRIPTION	

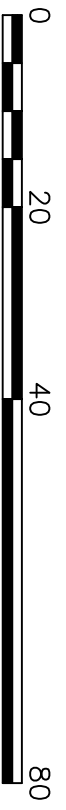




RED BROOK ROAD

LAYOUT & UTILITIES

SCALE: 1" = 20'



NOTES:

1. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION OF PROPOSED UTILITY POLE WITH SERVICE DROP.
2. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION, SIZE AND CONFIGURATION OF TRANSFORMERS. PROTECT TRANSFORMERS WITH BOLLARDS.
3. FINAL LOCATIONS, DEPTHS AND CONSTRUCTION OF UNDERGROUND ELECTRIC AND GAS SERVICES SHALL BE DETERMINED BY THEIR RESPECTIVE UTILITIES COMPANY.
4. CONNECT TO THE EXISTING 8" WATER MAIN WITH AN 8"x8" TAPPING SLEEVE AND GATE VALVE WITH VALVE BOX TO GRADE.
5. REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED DWELLING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS.
6. REFER TO LANDSCAPE PLANS PREPARED BY OTHERS FOR ALL PROPOSED PLANTING LOCATIONS, DETAILS AND SPECIFICATIONS.
7. CONTRACTOR SHALL PROVIDE CEMENT CONCRETE WASHOUT AREA. WASHOUT AREA SHALL BE A RING OF DOUBLE STAKED HAY BALES WITH SILTATION FENCE AND LINED WITH A 40 MIL. POLYETHYLENE BARRIER. SEE DETAIL. FINAL WASHOUT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION.
8. PROPOSED CONCRETE BLOCK RETAINING WALLS DESIGNED BY OTHERS. CONTRACTOR SHALL PROVIDE ALL NECESSARY REINFORCEMENT. ALL WALLS SHALL BE PROVIDED WITH SAFETY GUARDRAILS/HANDRAILS PER 780 CMR AND OSHA REGULATIONS AND SPECIFICATIONS. CONTRACTOR SHALL SUBMIT STAMPED SHOP DRAWINGS FOR RETAINING WALL CONSTRUCTION TO BUILDING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
9. CONFIRM FINAL SNOW REMOVAL AREA WITH OWNER.

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APPROVED BY:

DATE: JAN. 12, 2021  
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 CHECKED BY: WFM  
 JOB NO.: 18-9247  
 SCALE: 1" = 20'

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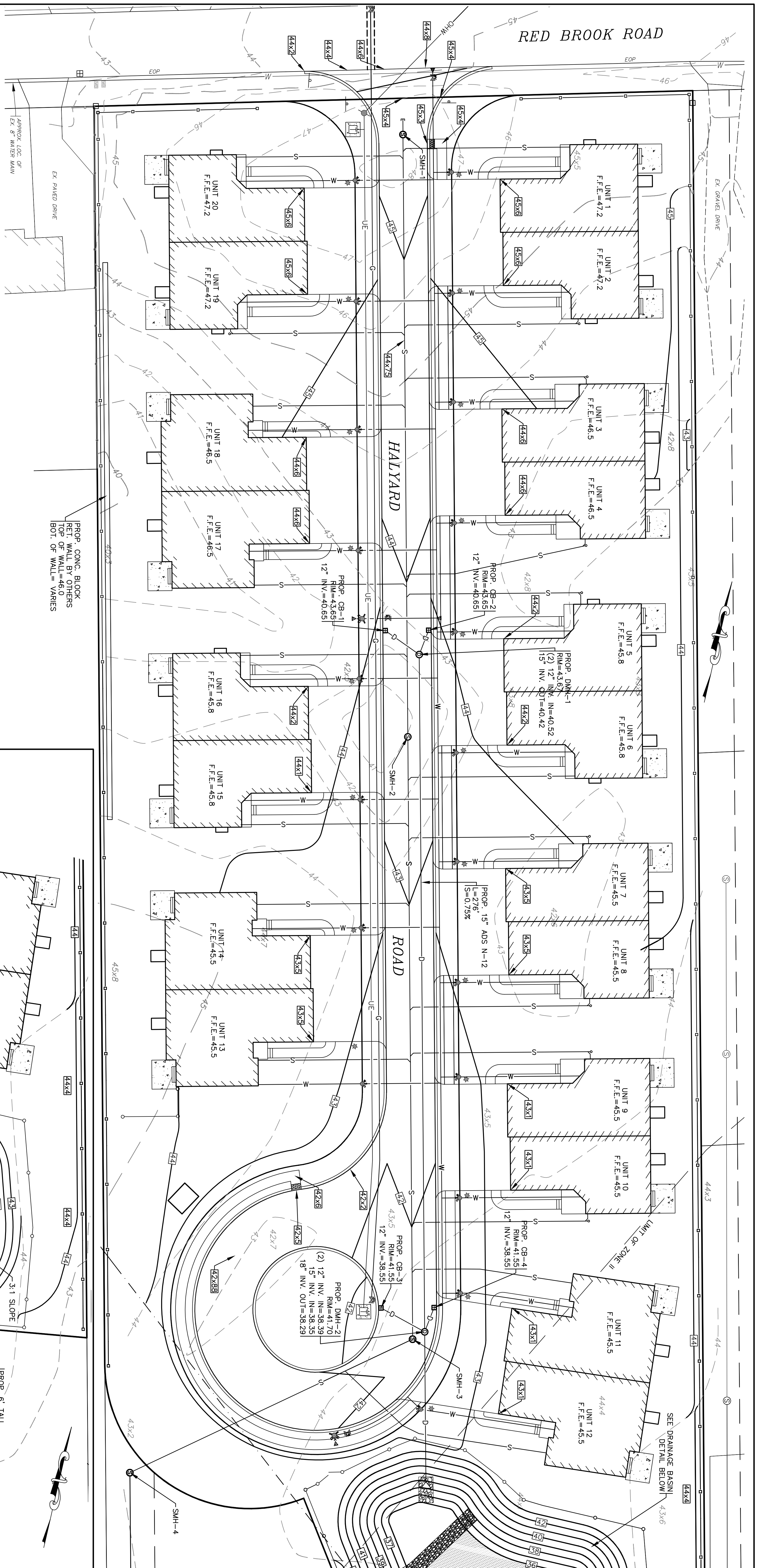
PERMIT SET  
 (NOT FOR CONSTRUCTION)

"SETTLER'S GLEN"  
 COMPREHENSIVE PERMIT PLAN  
 LAYOUT & UTILITIES  
 RED BROOK ROAD WAREHAM, MA  
 PREPARED FOR:  
 TGCI EMNACA, LLC  
 1266 FURNACE BROOK PARKWAY QUINCY, MA

DWG. 5 OF 11  
 JOB NO.: 18-9247



RED BROOK ROAD



**NOTES:**

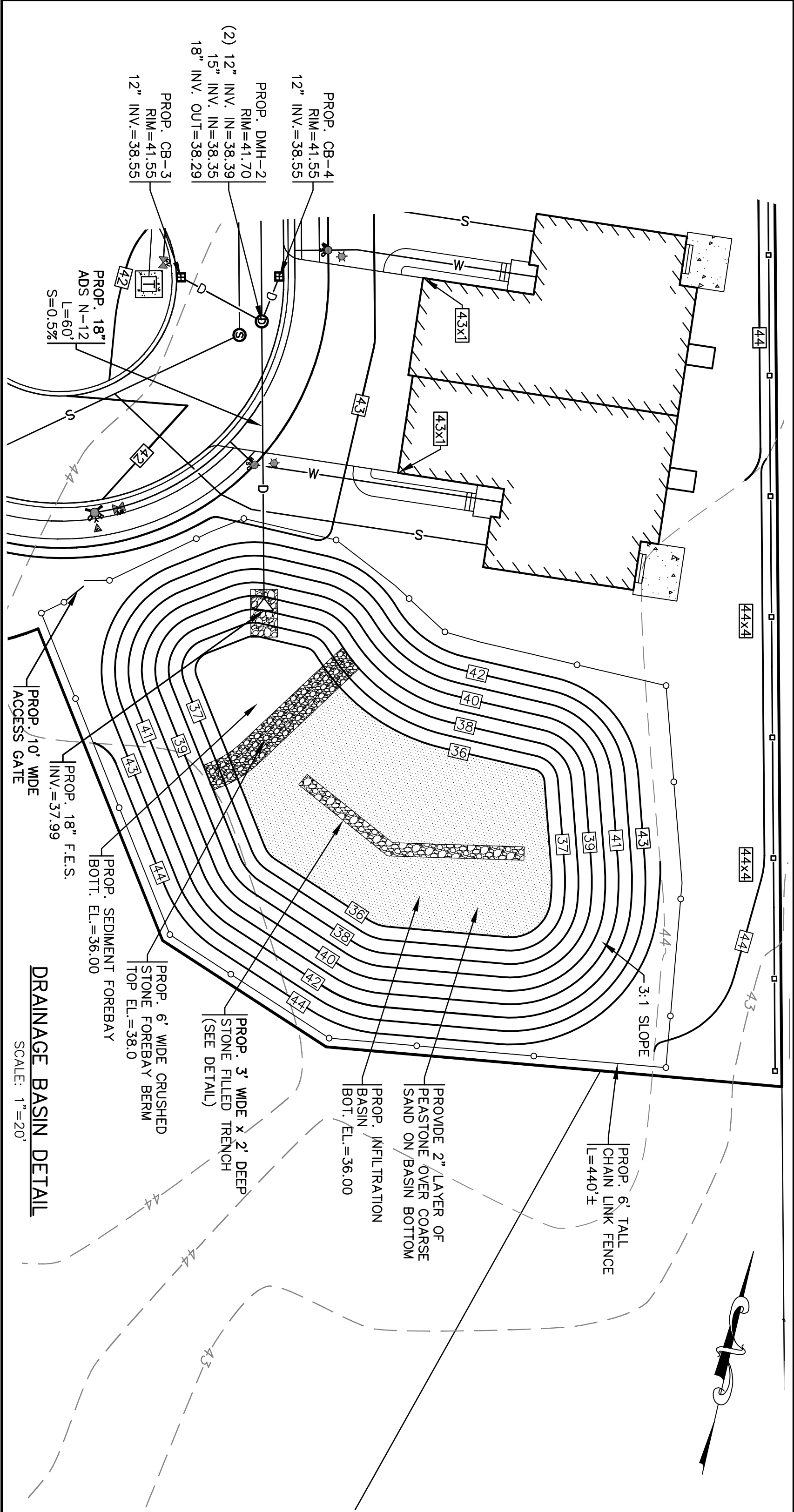
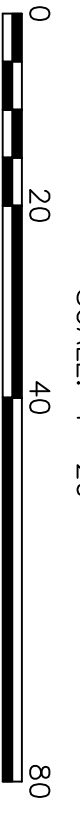
1. ALL PROPOSED CATCH BASINS SHALL HAVE A TEMPORARY SILT SOCK OR AN APPROVED EQUIVALENT. THE SILT SOCKS SHALL BE INSTALLED AS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THE SILT SOCKS AT THE COMPLETION OF CONSTRUCTION.
2. WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 1' BELOW ALL PROPOSED DRAINAGE LINES.
3. PROPOSED CONCRETE BLOCK RETAINING WALLS DESIGNED BY OTHERS. CONTRACTOR SHALL COORDINATE WITH OWNER. RETAINING WALL SHALL BE PROVIDED WITH SAFETY GUARDRAILS/HANDRAILS PER 780 CMR AND OSHA REGULATIONS AND SPECIFICATIONS. CONTRACTOR SHALL SUBMIT STAMPED PERMITS FOR RETAINING WALLS TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
4. FOR COMPLETE DRAINAGE OPERATION AND MAINTENANCE NOTES SEE SHEET 2.

**SANITARY SEWER STRUCTURE SCHEDULE:**

STRUCTURE	RIM EL.	INV. (IN)	INV. (OUT)
SMH-1	45.55	38.46	38.36
SMH-2	43.52	36.52	36.42
SMH-3	41.80	34.57	34.47
SMH-4	43.24	33.84	33.74
SMH-5	44.74	32.54	32.54

PROP. CONC. BLOCK RET. WALL BY OTHERS BOT. OF WALL VARIES

**GRADING & DRAINAGE**



**DRAINAGE BASIN DETAIL**

SCALE: 1" = 20'

**"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN GRADING & DRAINAGE**  
 RED BROOK ROAD WAREHAM, MA  
 PREPARED FOR:  
**TGCI ENNACA, LLC**  
 1266 FURNACE BROOK PARKWAY QUINCY, MA

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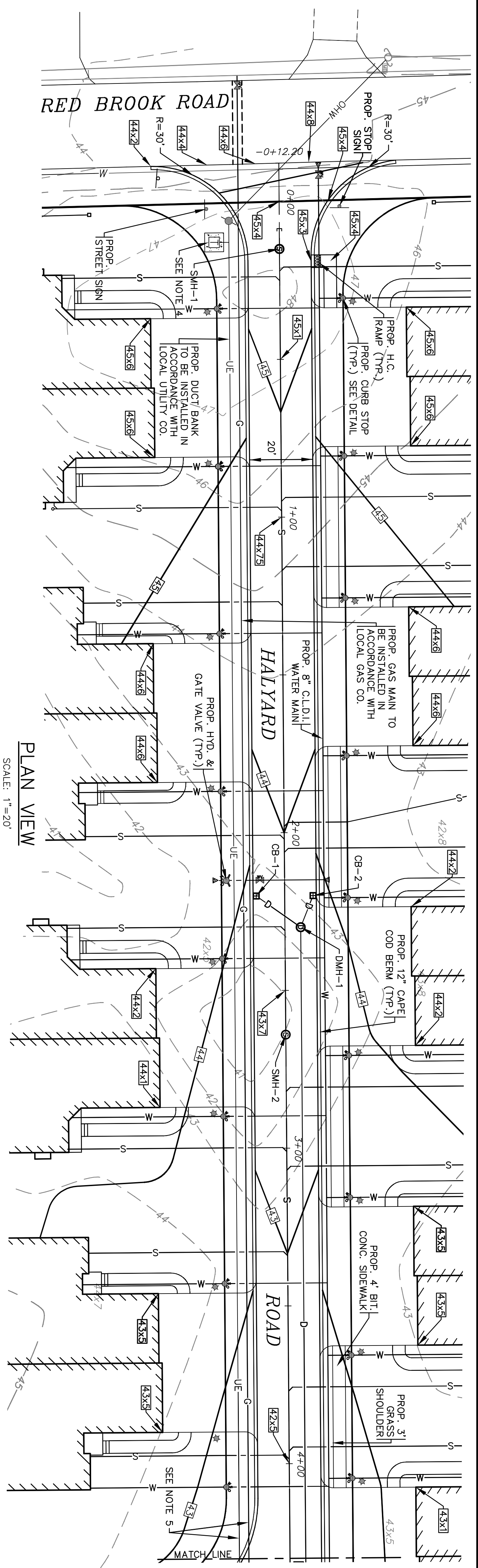
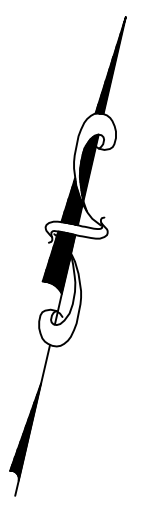
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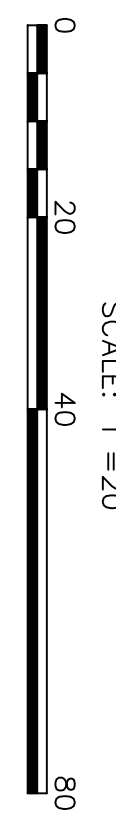
DATE: JAN. 12, 2021  
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 CHECKED BY: WFM  
 JOB NO.: 18-9247  
 SCALE: 1" = 20'

REV.	DATE	BY	APP'D	DESCRIPTION

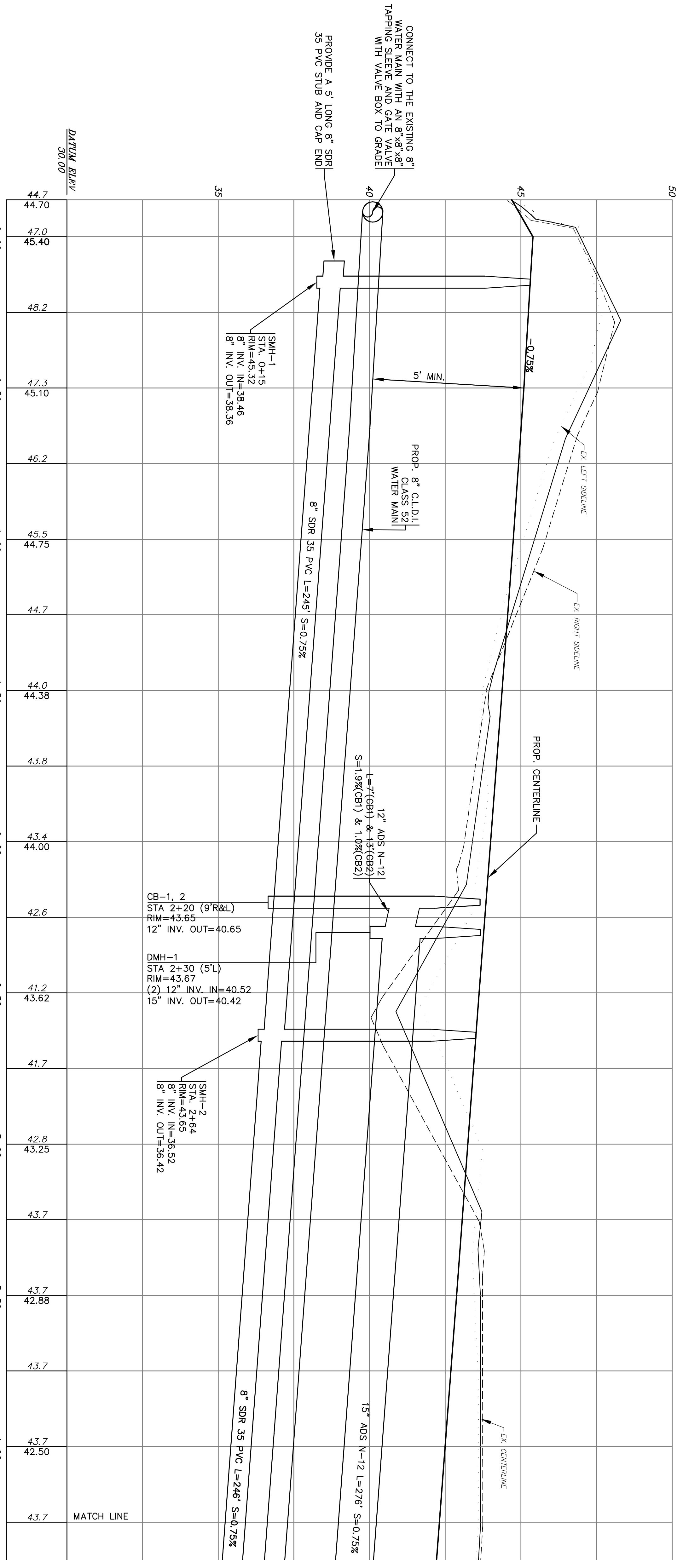




PLAN VIEW  
SCALE: 1" = 20'



- NOTES:**
1. ALL PROPOSED CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK OR AN APPROVED EQUAL INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
  2. WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 1' BELOW ALL PROPOSED DRAINAGE LINES.
  3. FOR COMPLETE DRAINAGE OPERATION AND MAINTENANCE NOTES SEE SHEET 2.
  4. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION, SIZE AND CONFIGURATION OF TRANSFORMERS.
  5. PROTECT TRANSFORMERS WITH BOLLARDS.
  6. FINAL LOCATIONS, DEPTHS AND CONSTRUCTION OF UNDERGROUND ELECTRIC AND GAS SERVICES SHALL BE DETERMINED BY THEIR RESPECTIVE UTILITIES COMPANY.
- REFER TO LANDSCAPE PLANS PREPARED BY OTHERS FOR ALL PROPOSED PLANTING LOCATIONS, DETAILS AND SPECIFICATIONS.



VERTICAL SCALE  
SCALE: 1" = 2'

HALYARD ROAD PROFILE 1  
VERTICAL SCALE: 1" = 2'

HORIZONTAL SCALE  
SCALE: 1" = 20'

HORIZONTAL SCALE  
SCALE: 1" = 20'

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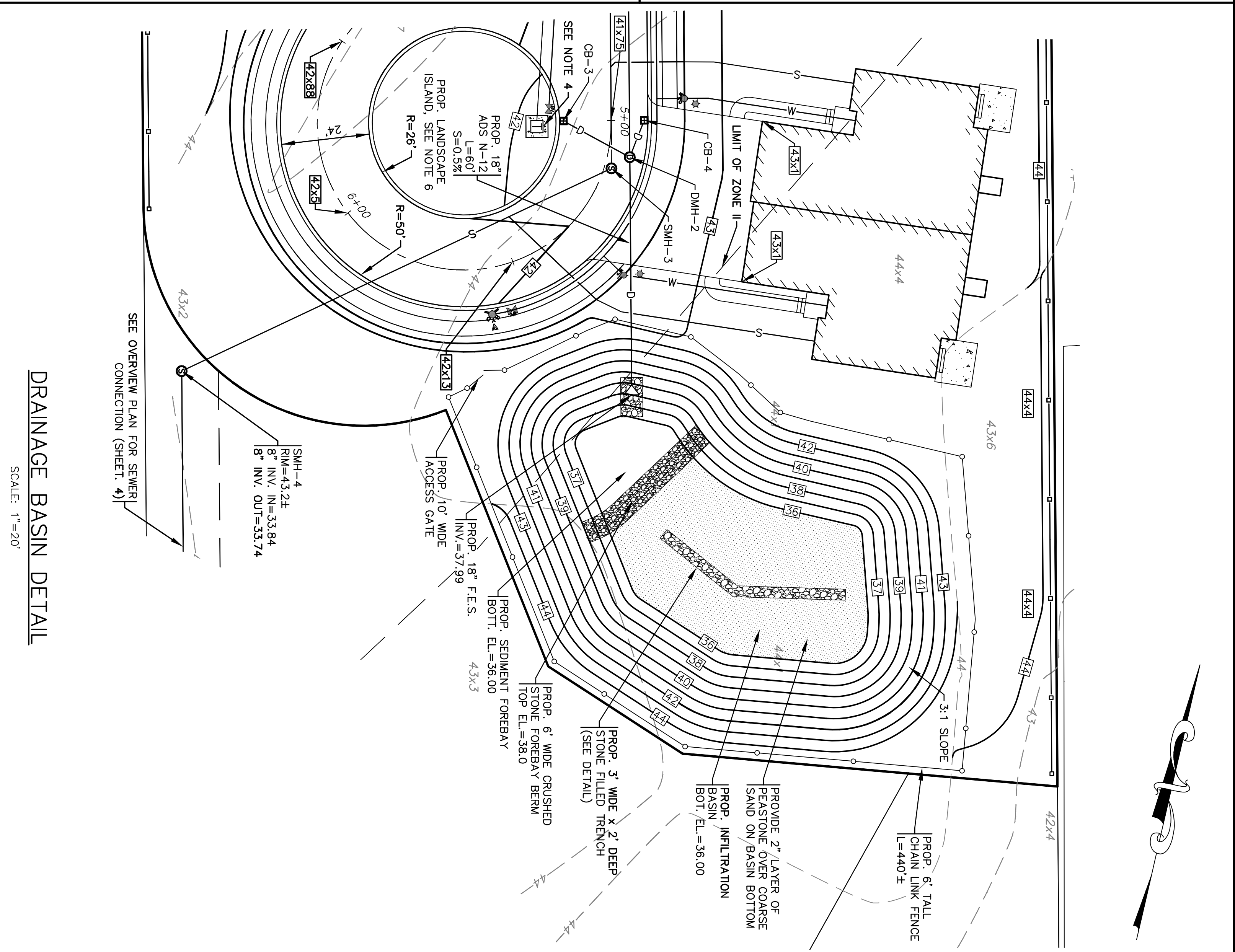
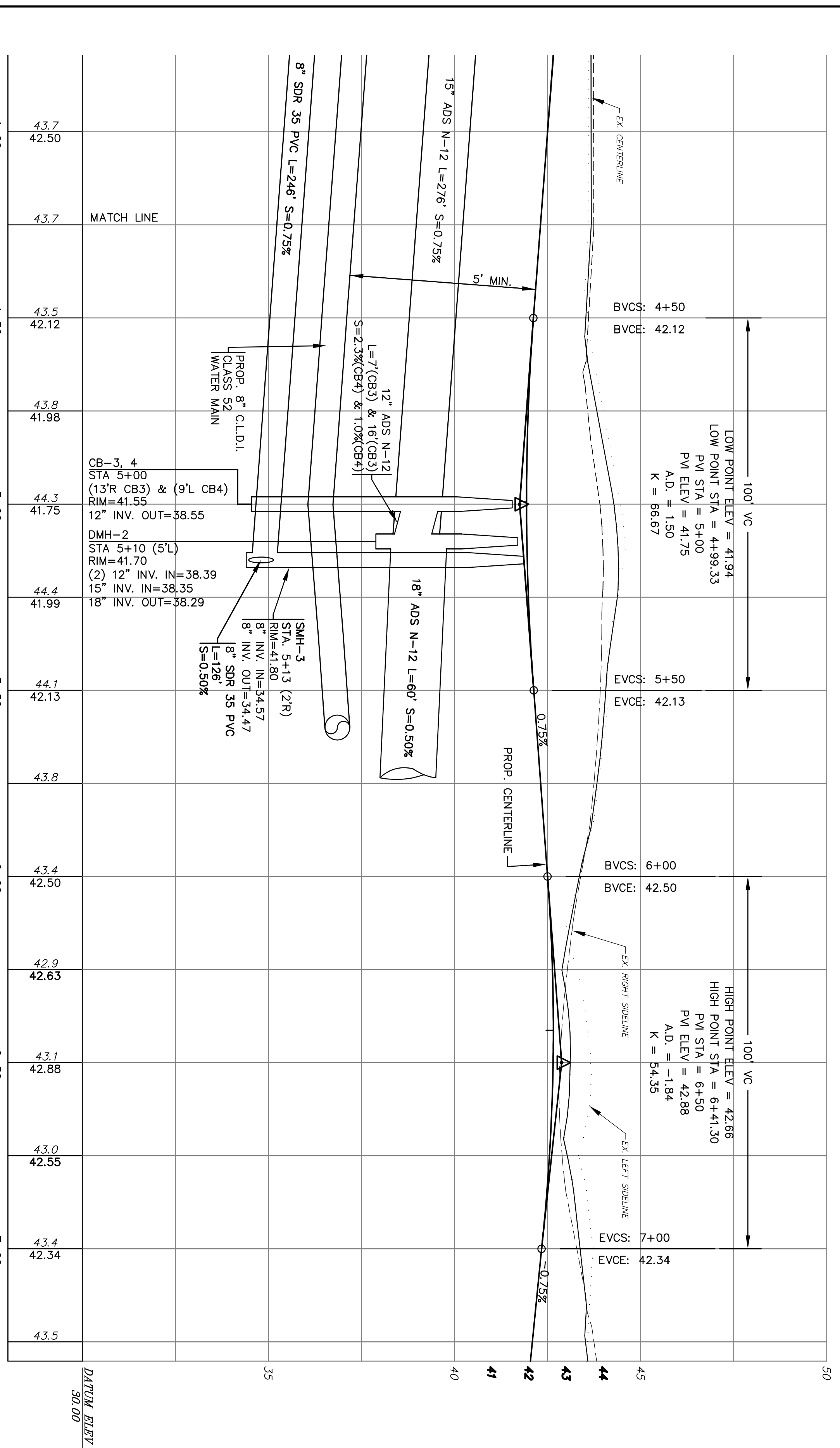
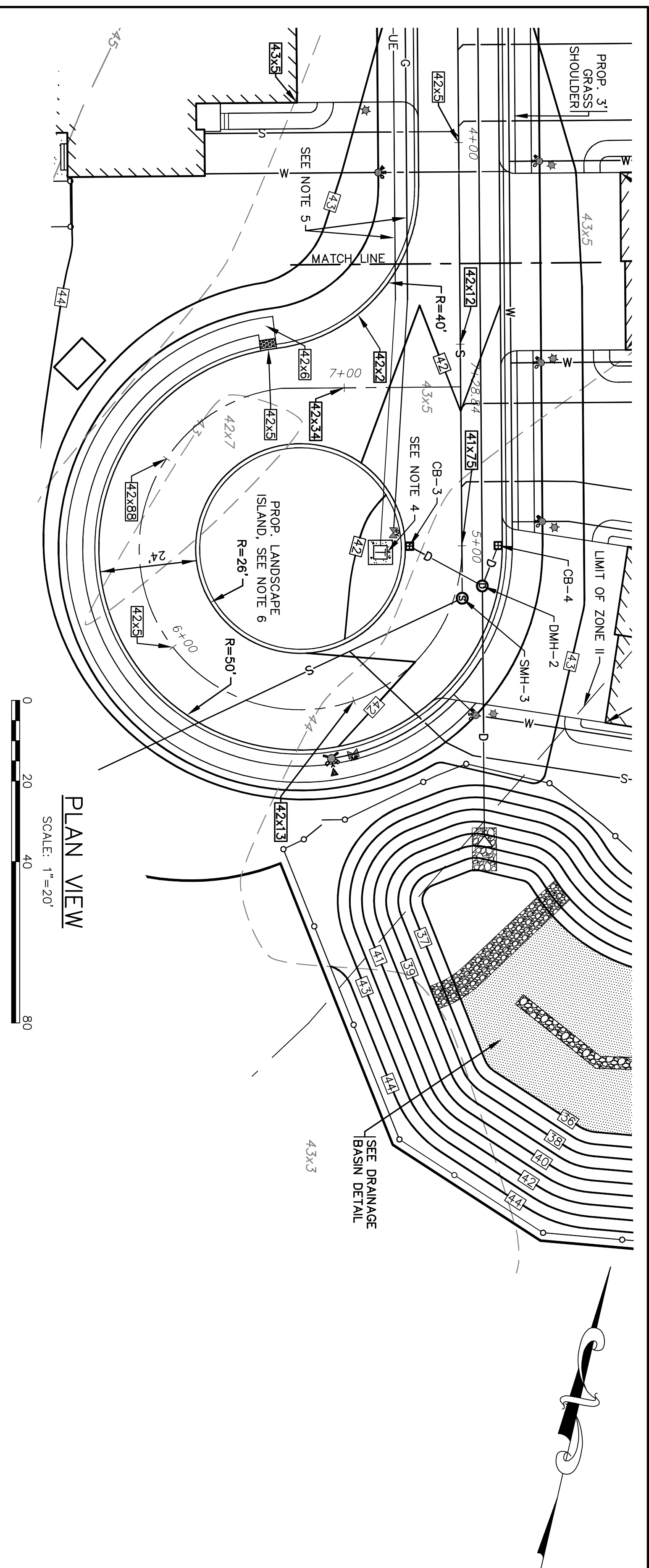
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**"SETTLER'S GLEN"**  
 COMPREHENSIVE PERMIT PLAN  
 PLAN & ROADWAY PROFILE SHEET-1  
 RED BROOK ROAD WAREHAM, MA

PREPARED FOR:  
**TGCI EMNACA, LLC**  
 1266 FURNACE BROOK PARKWAY QUINCY, MA

PERMIT SET  
 DWG. 7 OF 11  
 JOB NO.: 18-9247

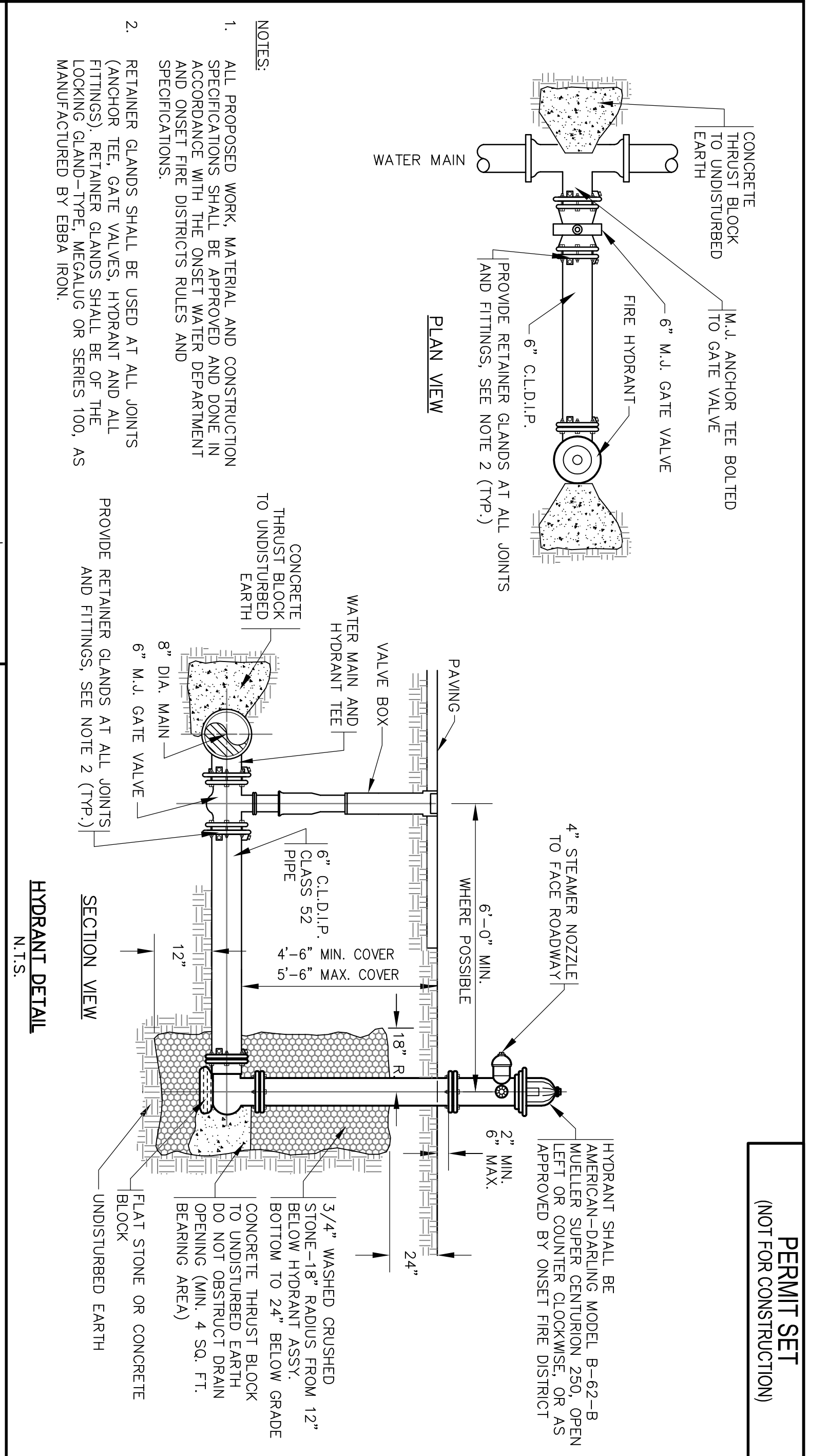
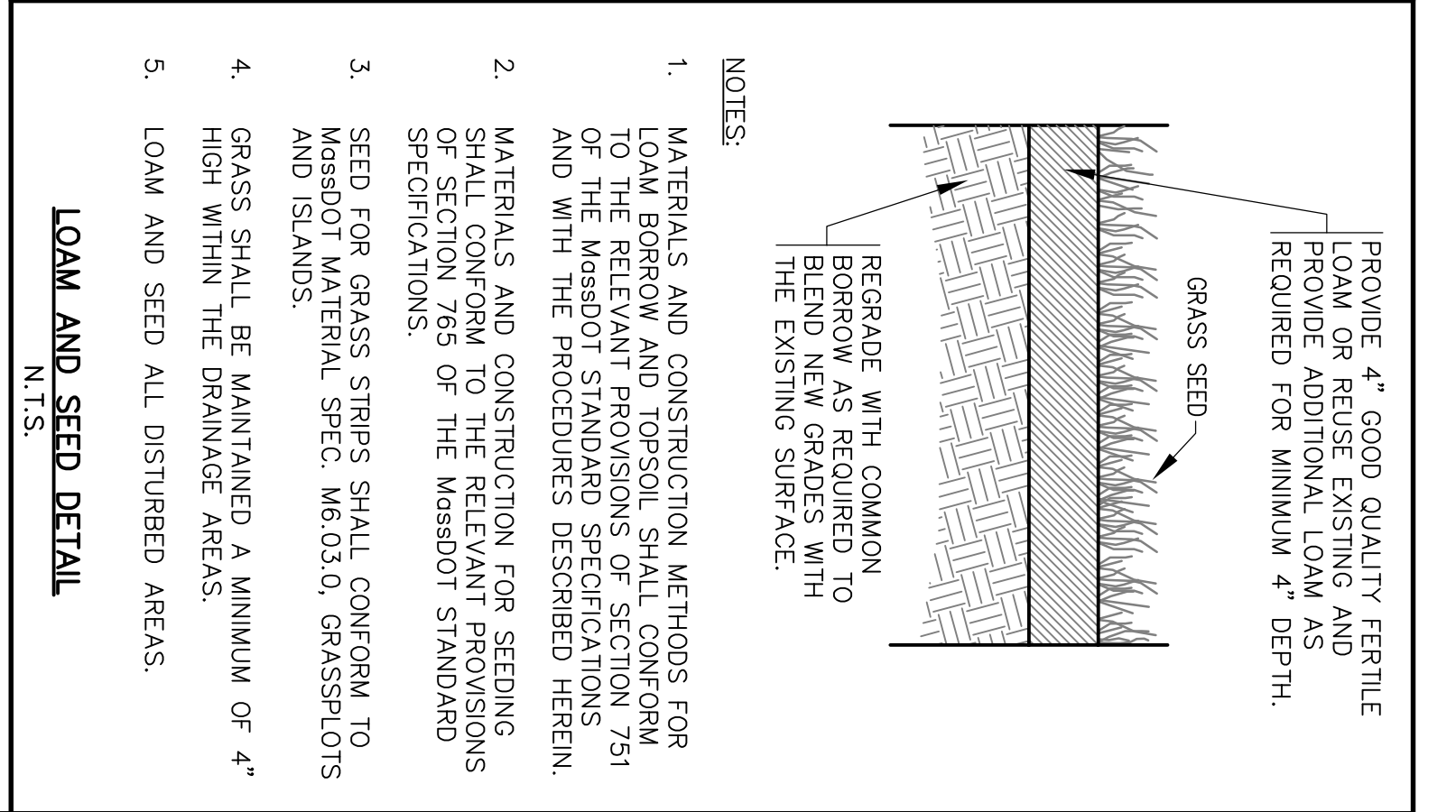
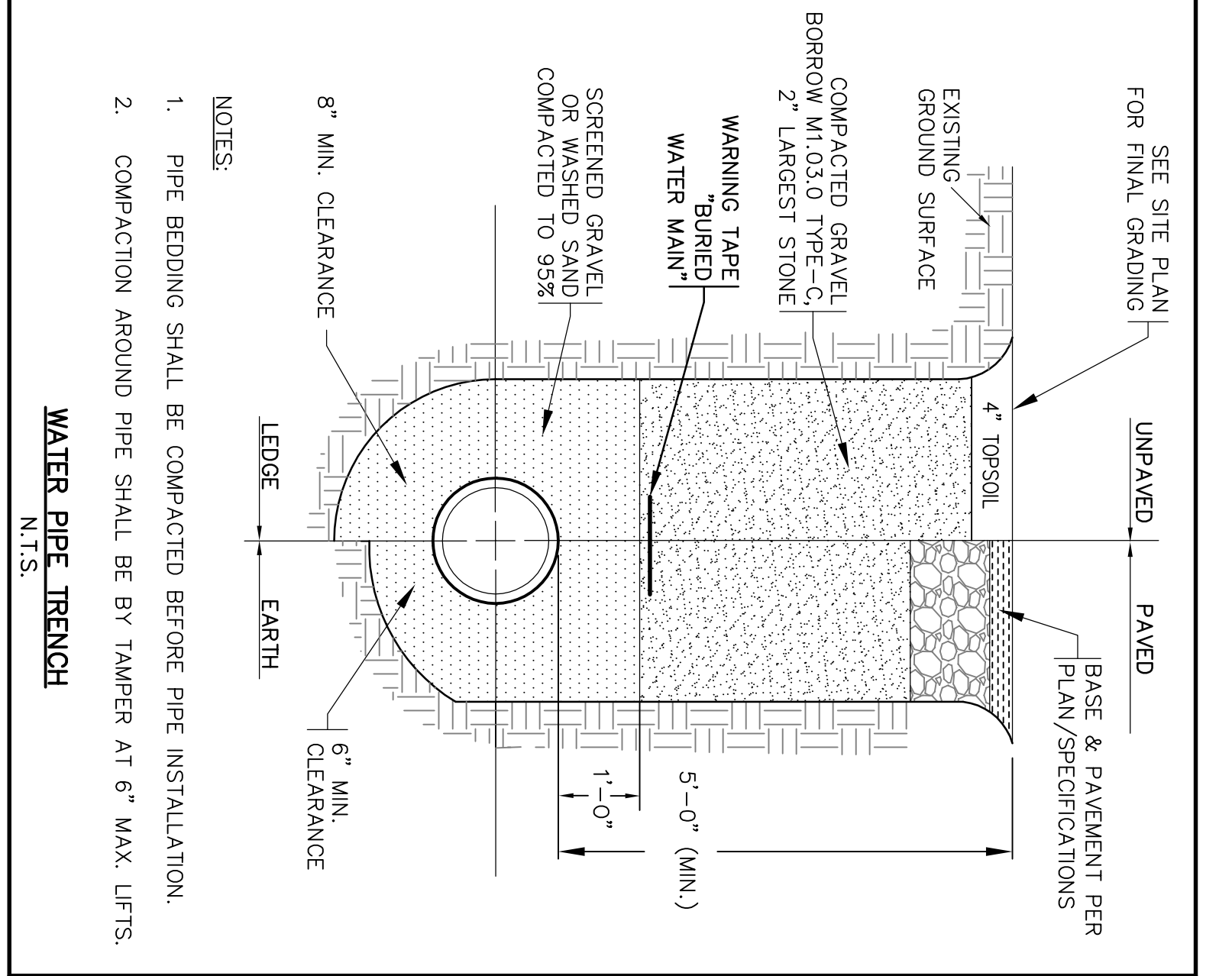
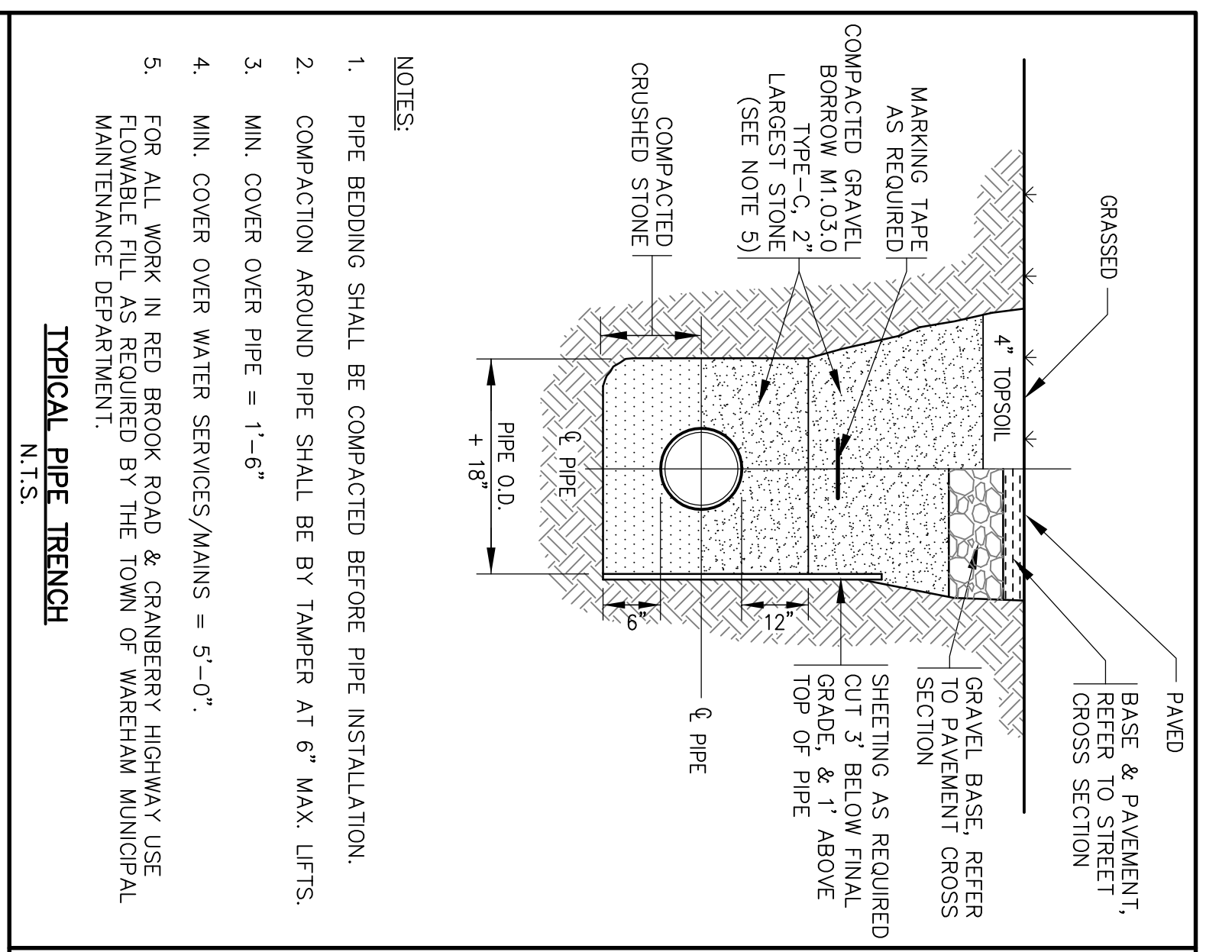




- NOTES:**
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  2. WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 1' BELOW ALL PROPOSED DRAINAGE LINES.
  3. FOR COMPLETE DRAINAGE OPERATION AND MAINTENANCE NOTES SEE SHEET 2.
  4. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION, SIZE AND CONFIGURATION OF TRANSFORMERS. PROTECT TRANSFORMERS WITH BOLLARDS.
  5. FINAL LOCATIONS, DEPTHS AND CONSTRUCTION OF UNDERGROUND ELECTRIC AND GAS SERVICES SHALL BE DETERMINED BY THEIR RESPECTIVE UTILITIES COMPANY.
  6. REFER TO LANDSCAPE PLANS PREPARED BY OTHERS FOR ALL PROPOSED PLANTING LOCATIONS, DETAILS AND SPECIFICATIONS.

PERMIT SET DWG. 8 OF 11 (NOT FOR CONSTRUCTION)	JOB NO.: 18-9247	<b>"SETTLER'S GLEN"</b> <b>COMPREHENSIVE PERMIT PLAN</b> <b>PLAN &amp; ROADWAY PROFILE SHEET-2</b> RED BROOK ROAD WAREHAM, MA	<b>G.A.F. ENGINEERING, INC.</b> PROFESSIONAL ENGINEERS & LAND SURVEYORS 266 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-6600 FAX: (508) 295-6634 E-MAIL: gaf@gaf-eng.com	APPROVED BY:	APPROVED BY:	DATE: JAN. 12, 2021	<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>APP'D</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV.	DATE	BY	APP'D	DESCRIPTION					
	REV.			DATE	BY	APP'D		DESCRIPTION									
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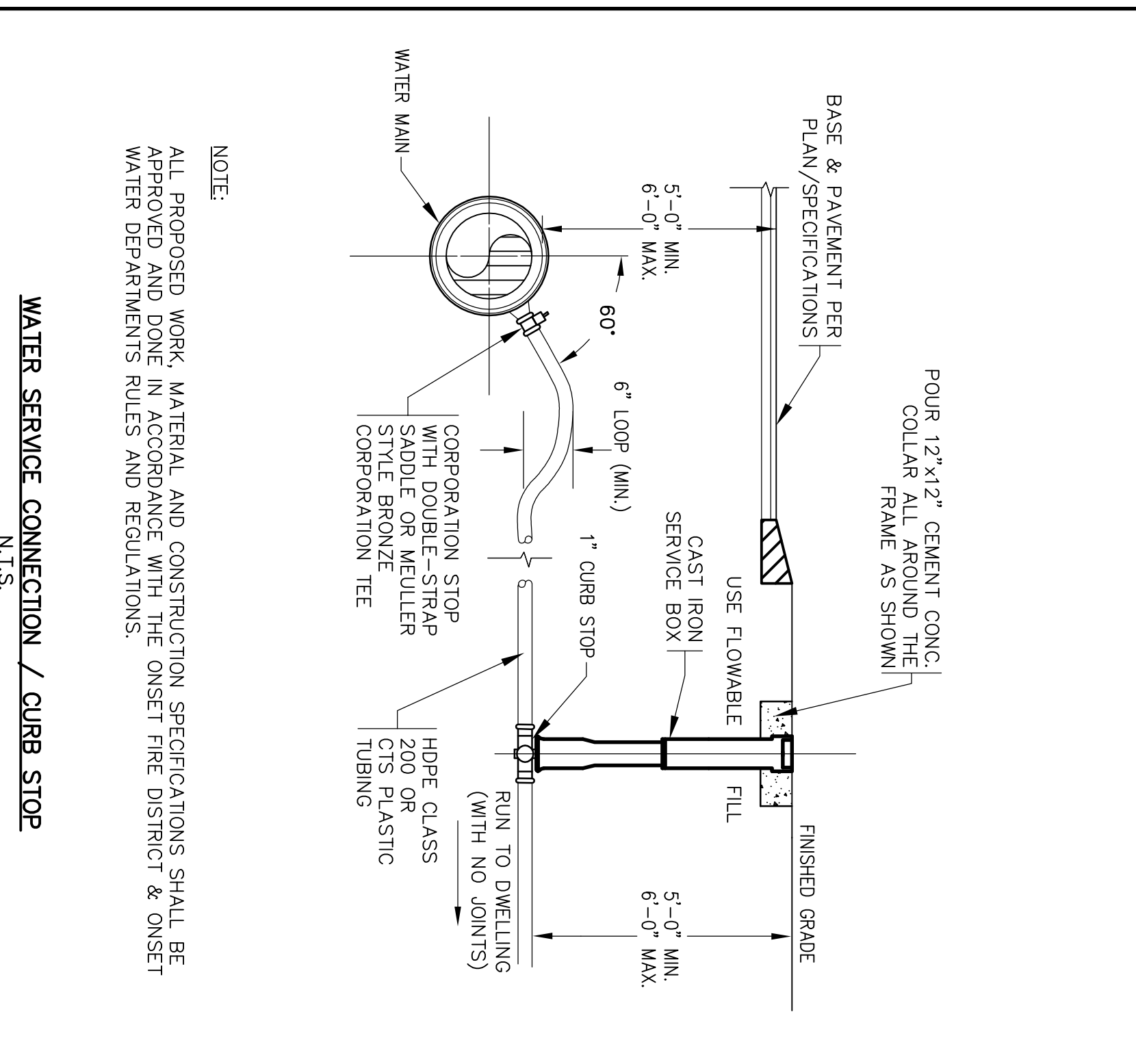
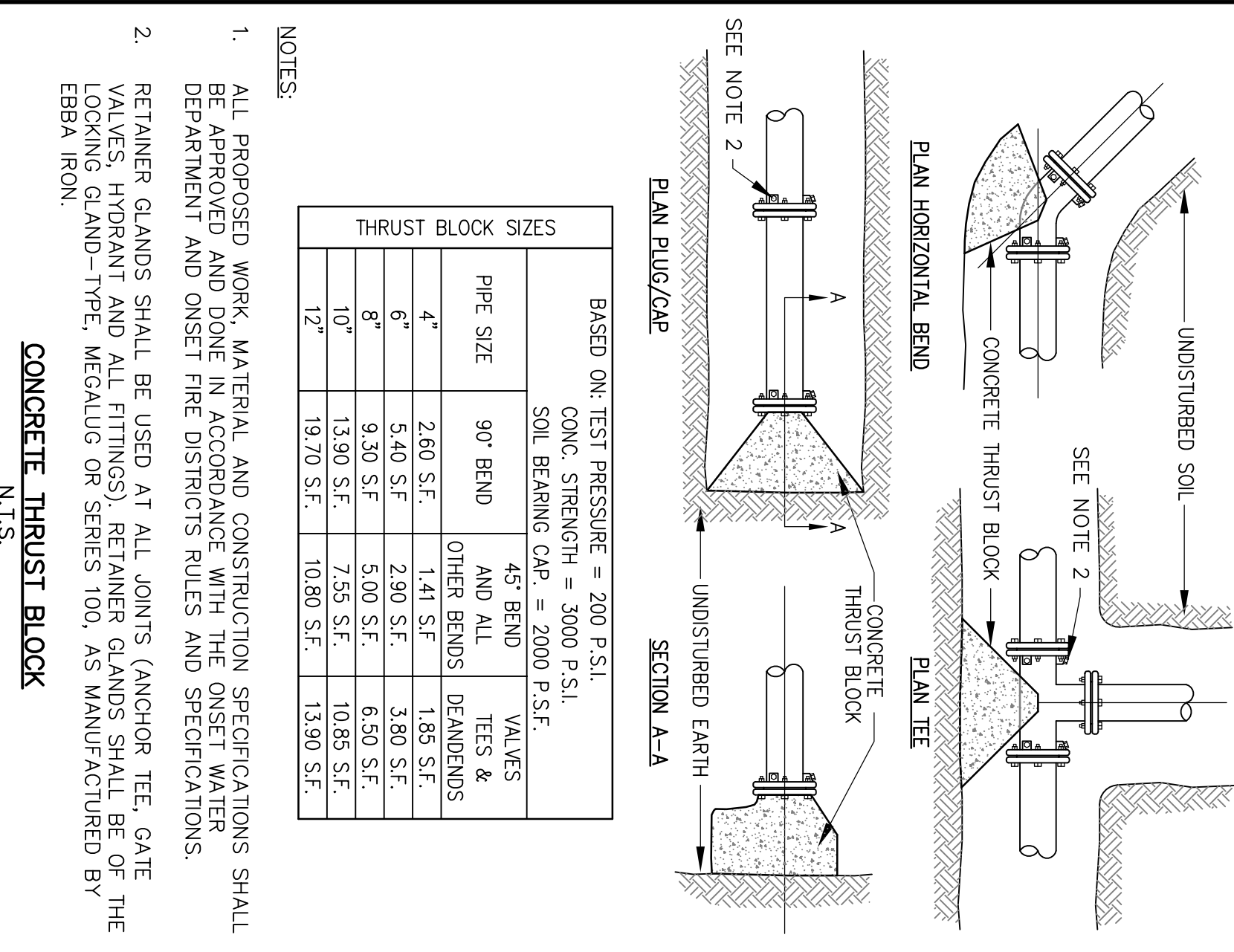
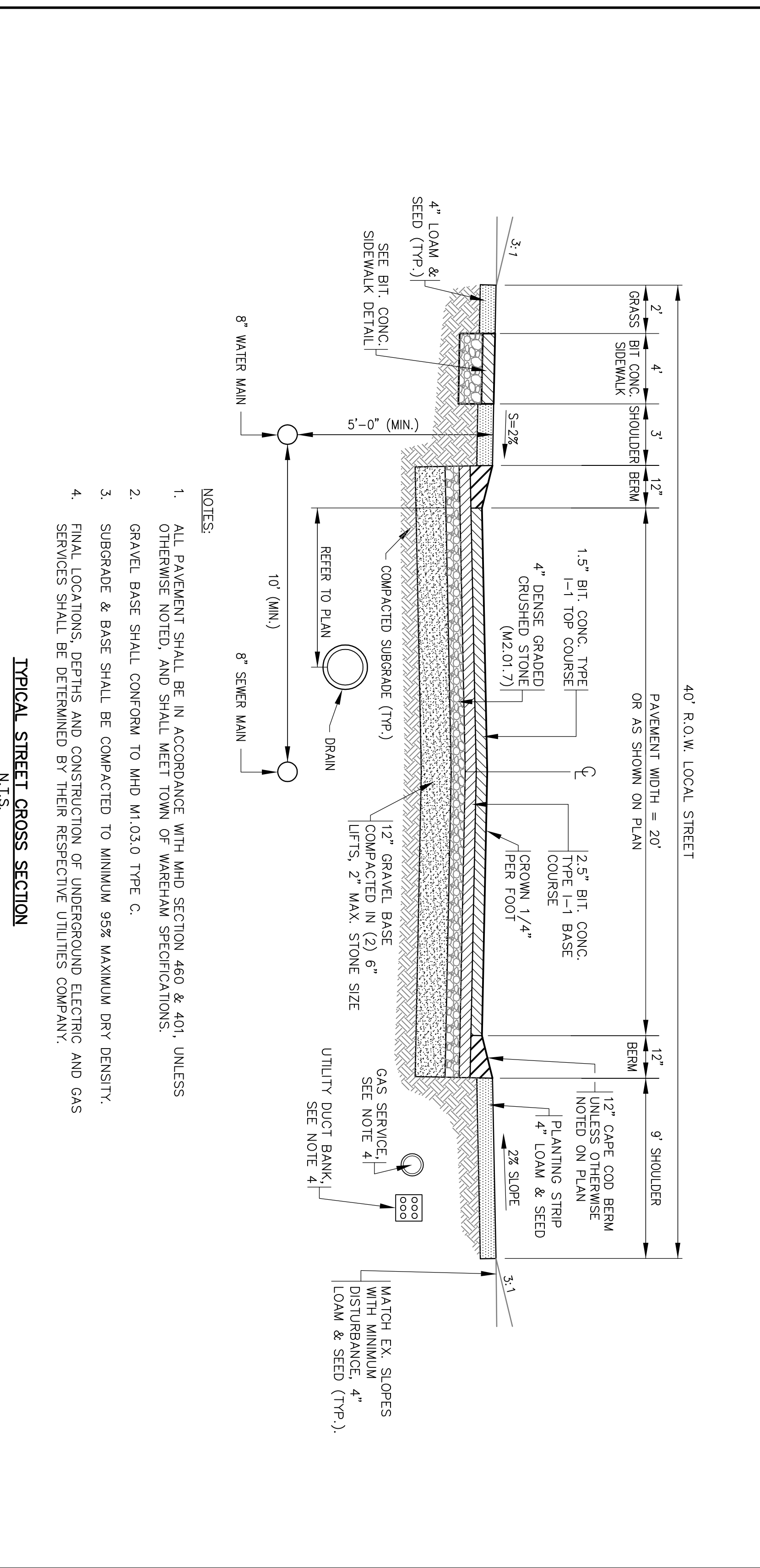




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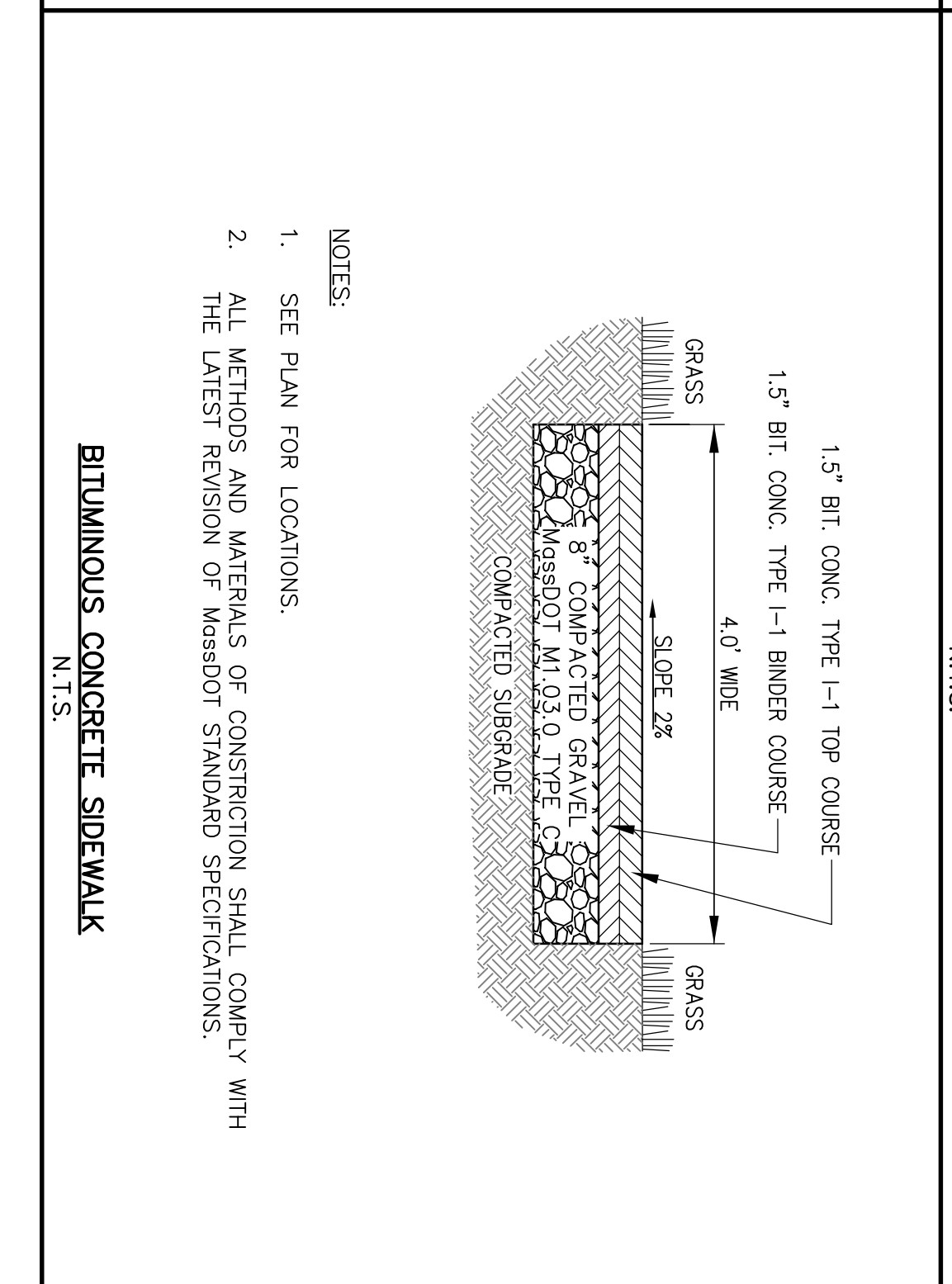
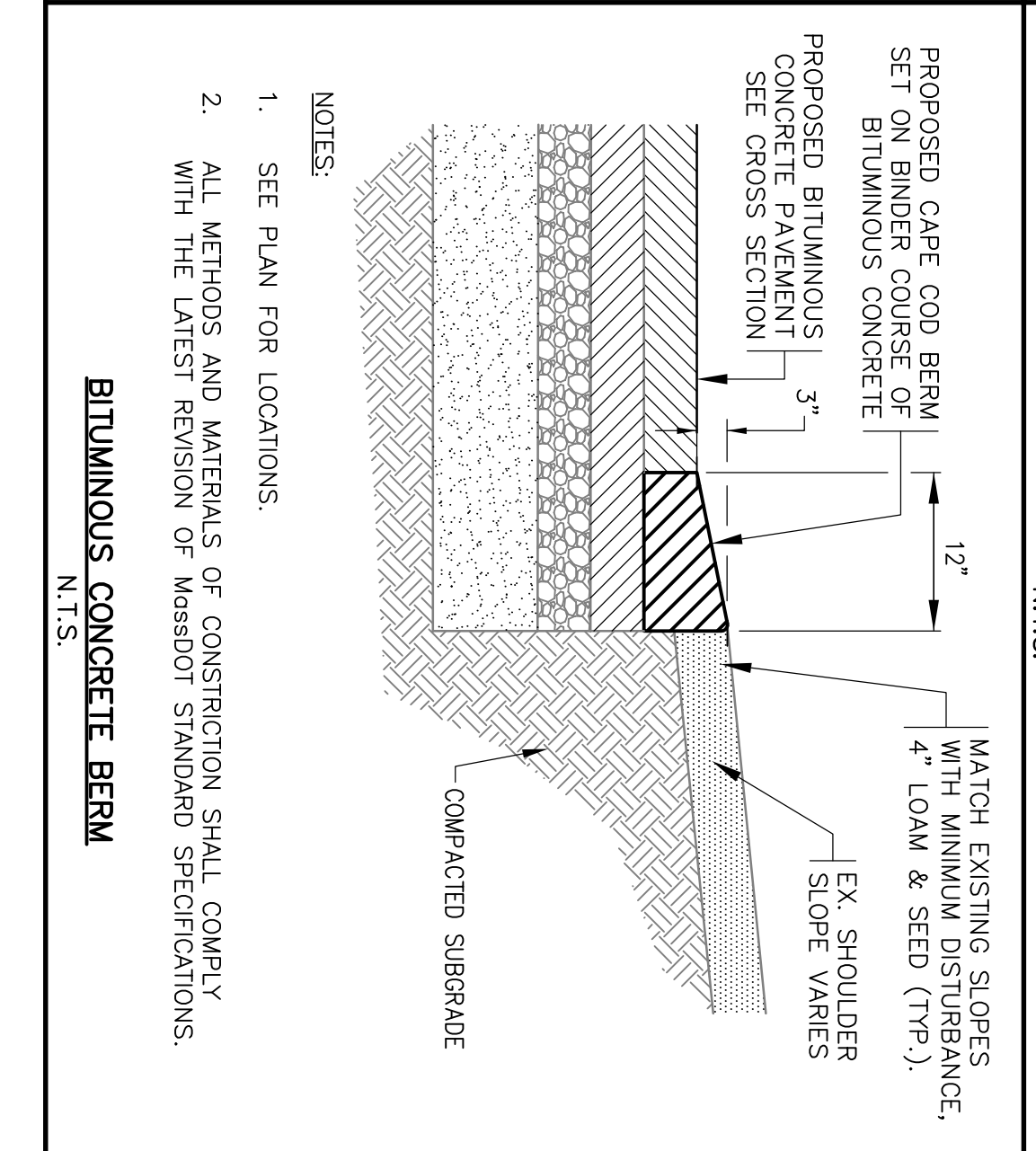
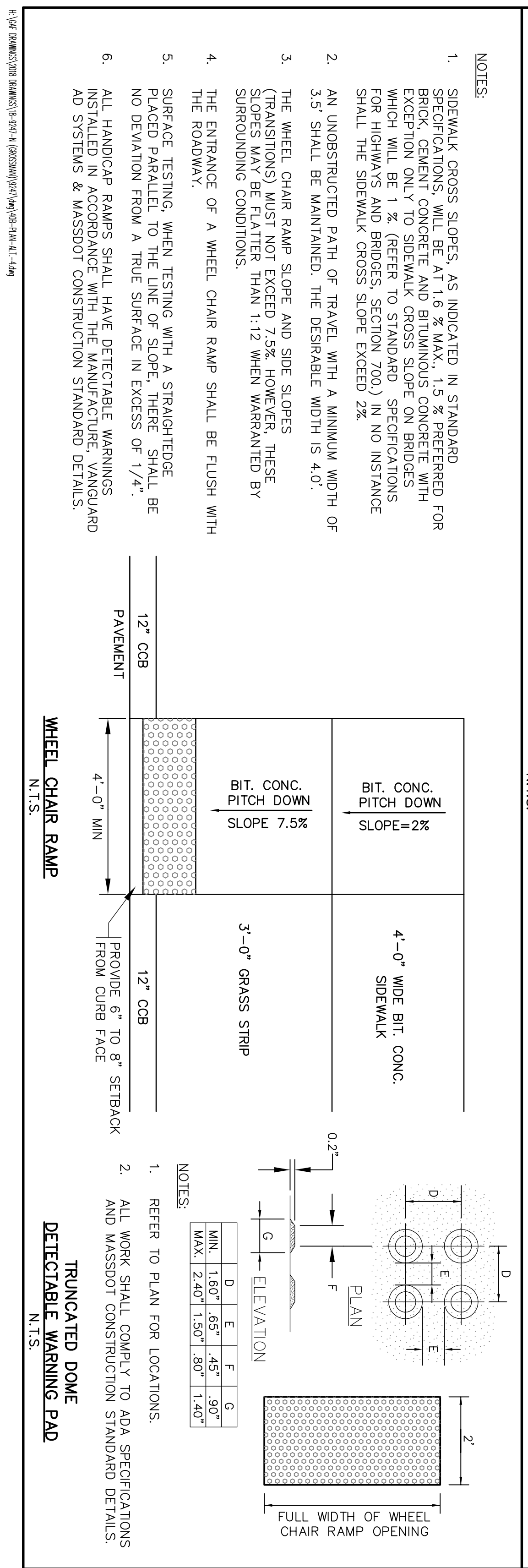
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E-MAIL: gaf@gaf-eng.com

APPROVED BY: \_\_\_\_\_



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**"SETTLER'S GLEN"**  
**COMPREHENSIVE PERMIT PLAN**  
**DETAIL SHEET 1**

RED BROOK ROAD WAREHAM, MA  
PREPARED FOR:  
**TGCI EMNACA, LLC**  
1266 FURNACE BROOK PARKWAY QUINCY, MA

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DWG. NO.: 18-9247  
9 OF 11

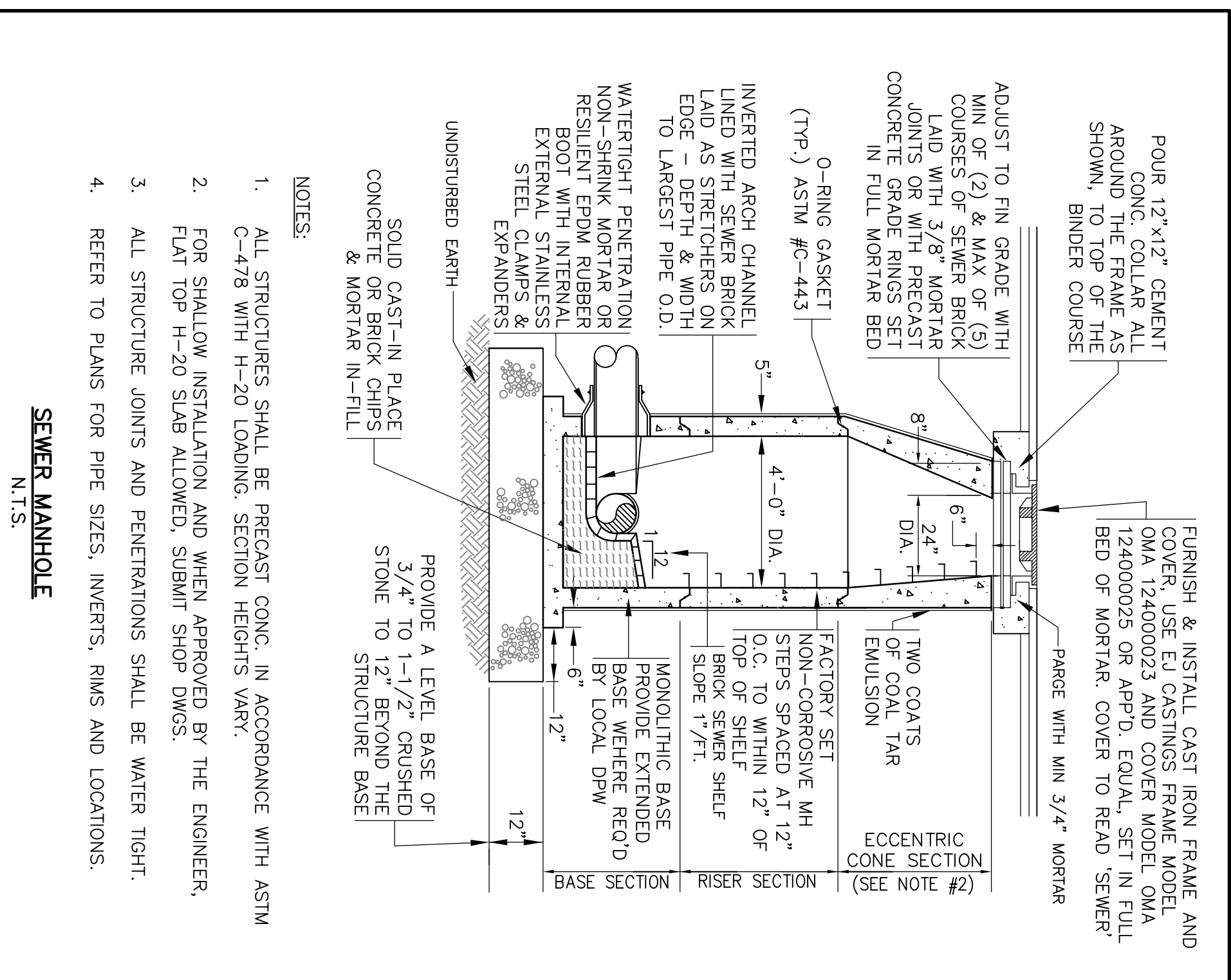
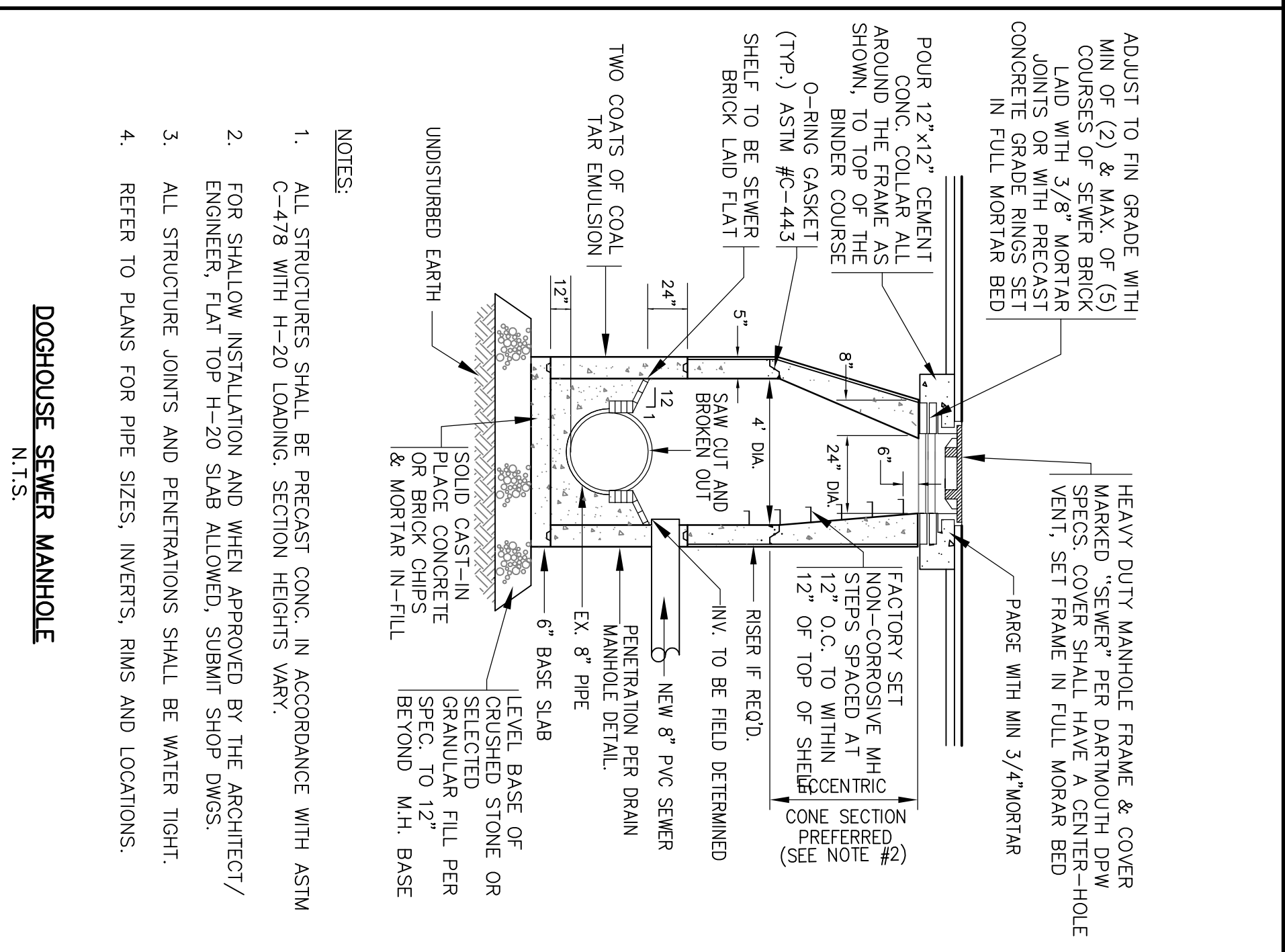
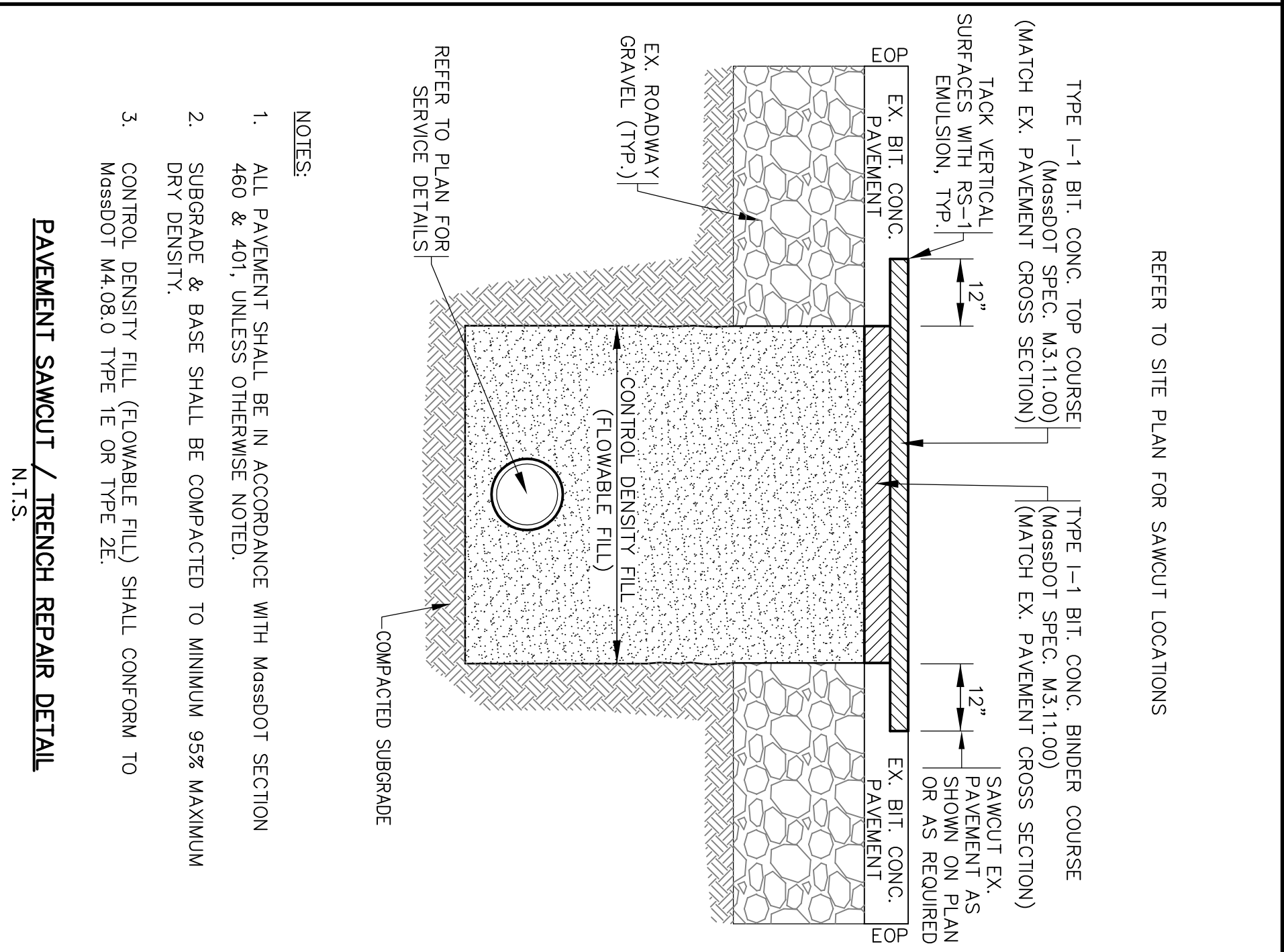
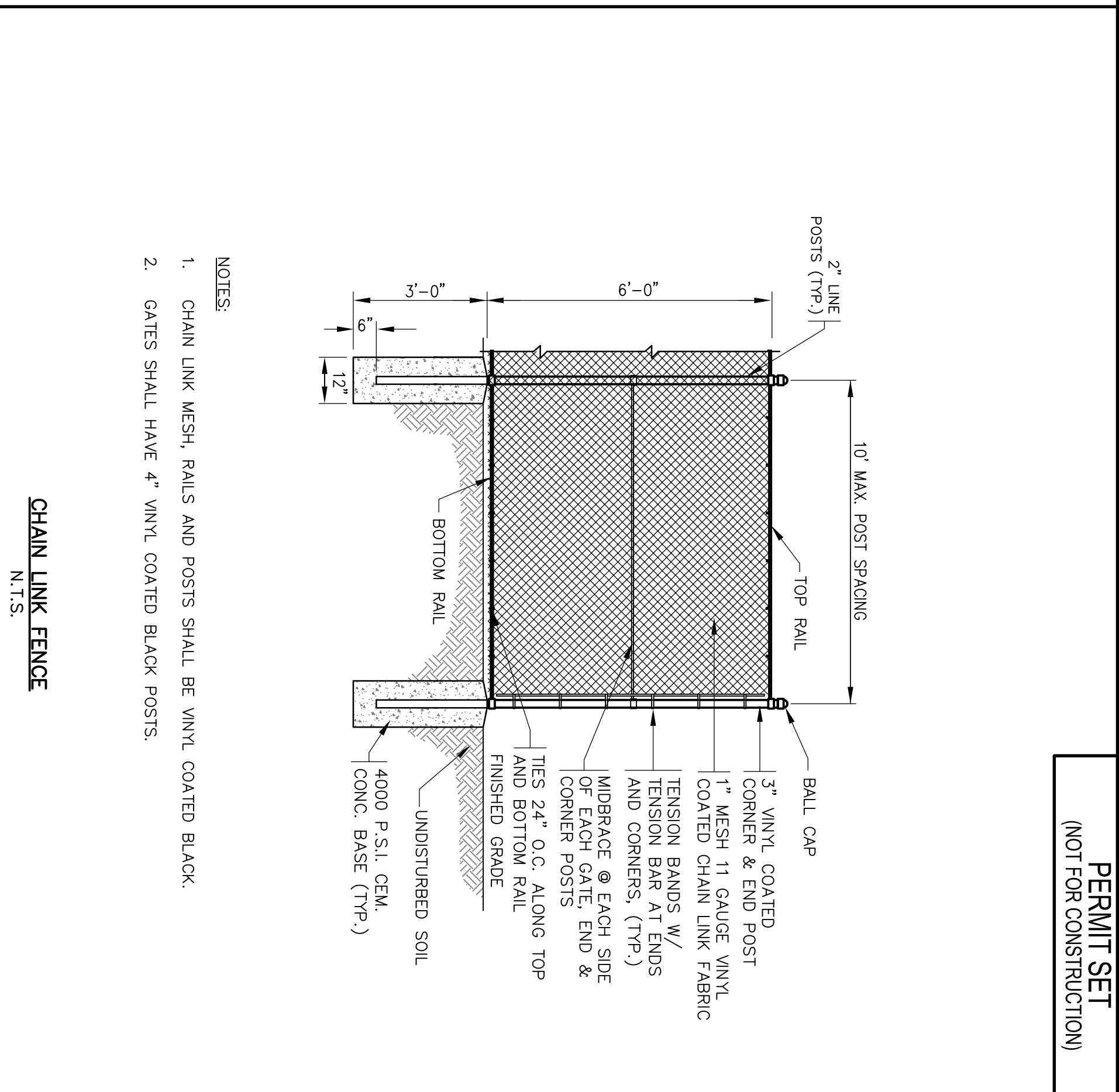


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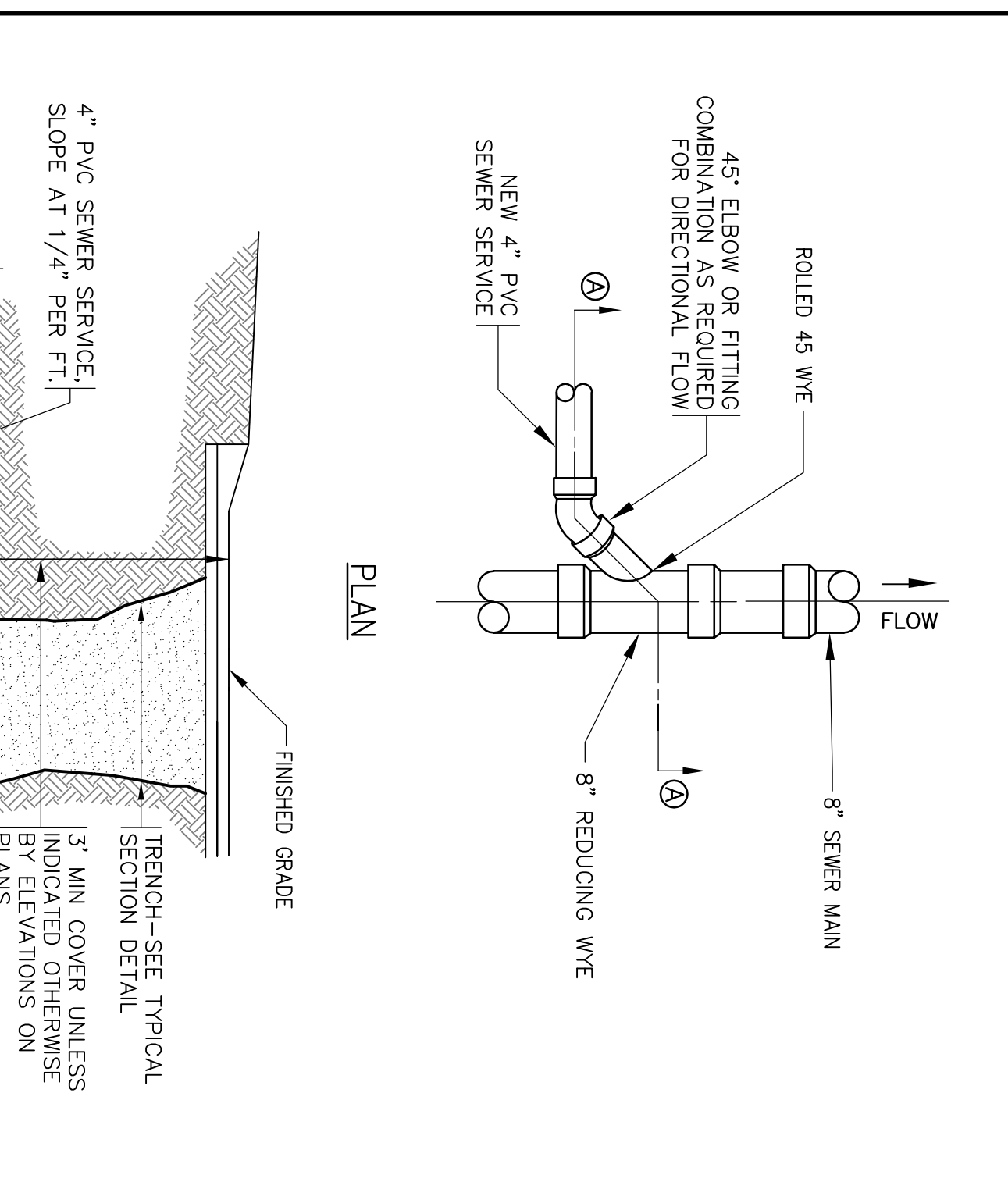
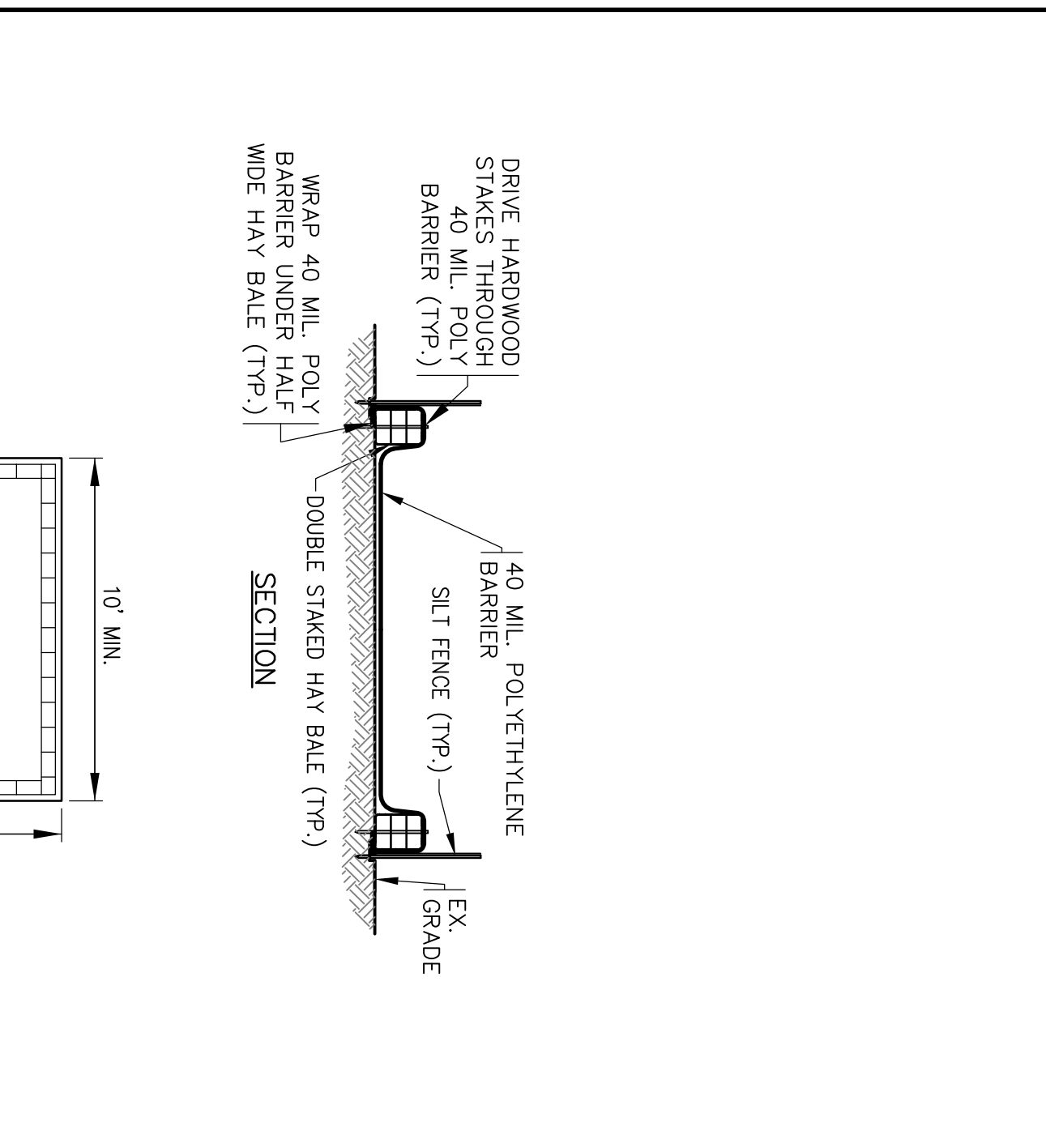
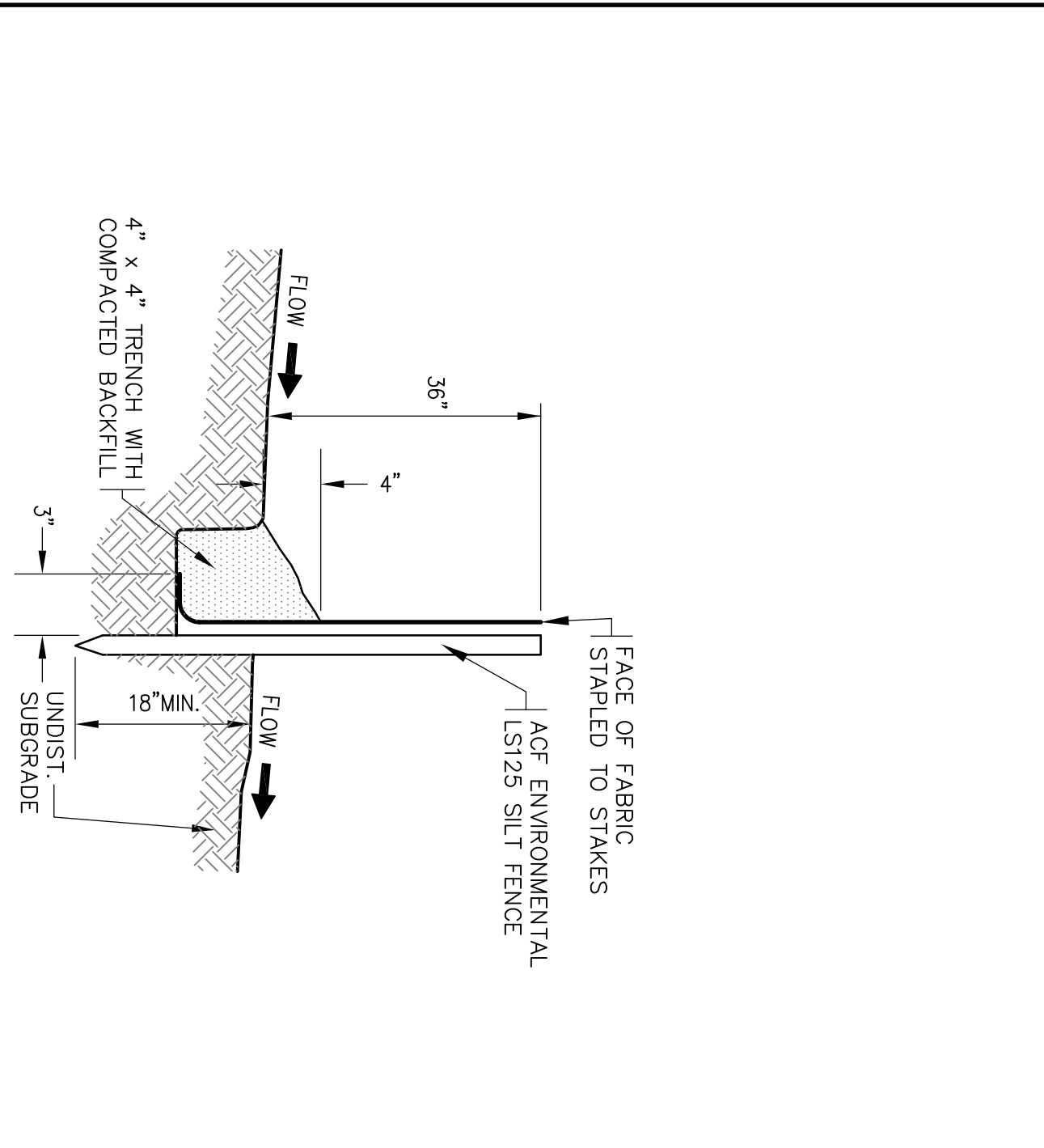
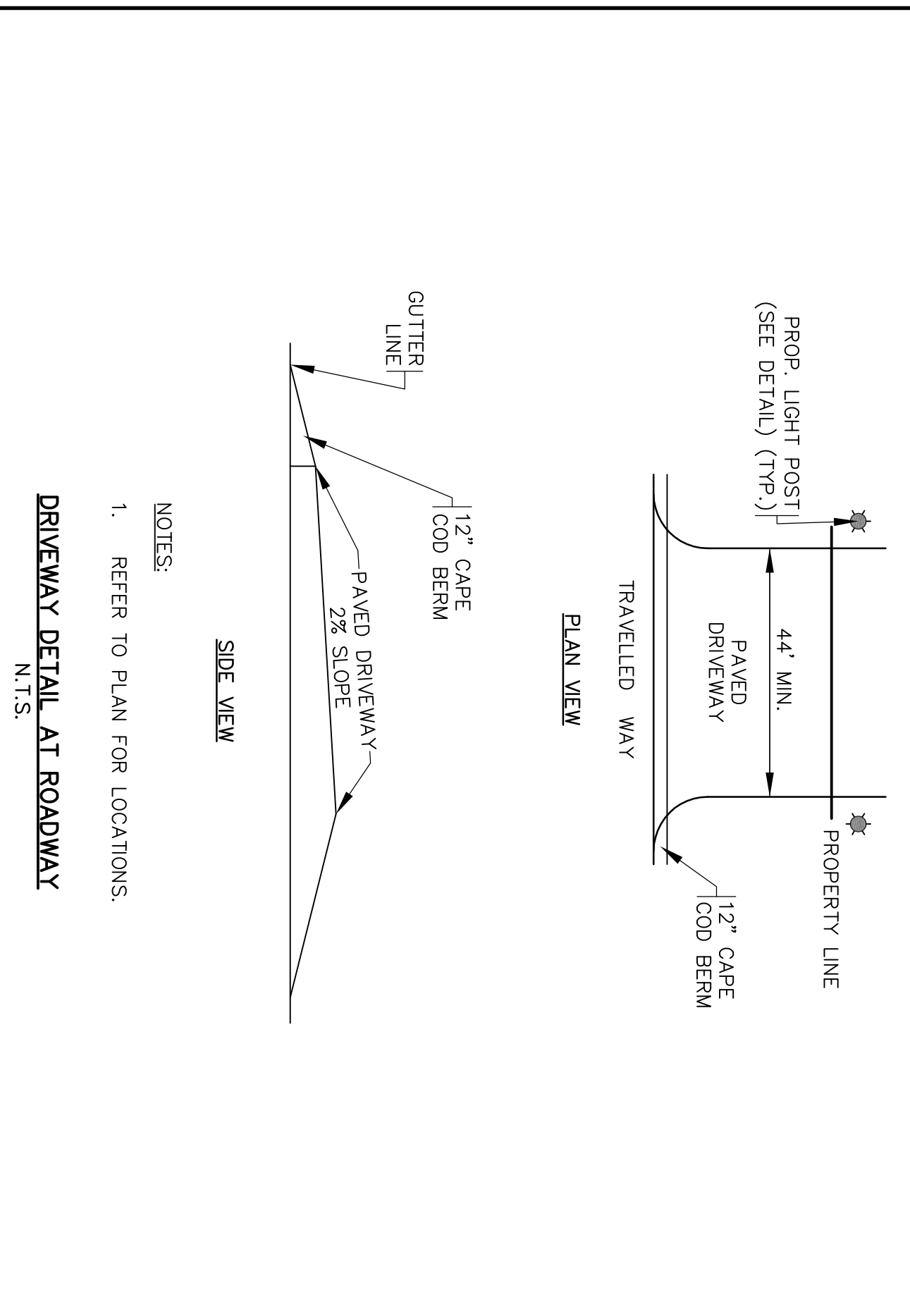
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