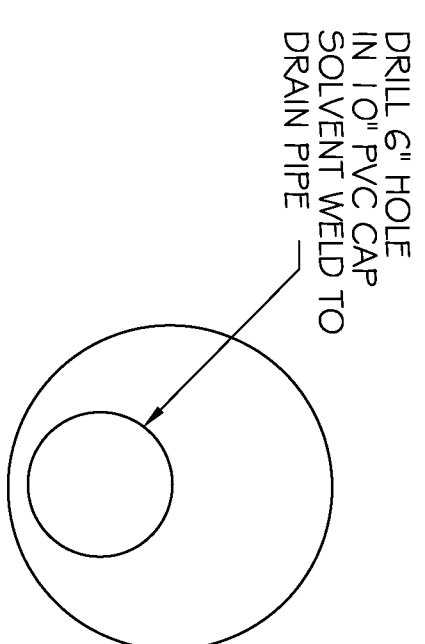
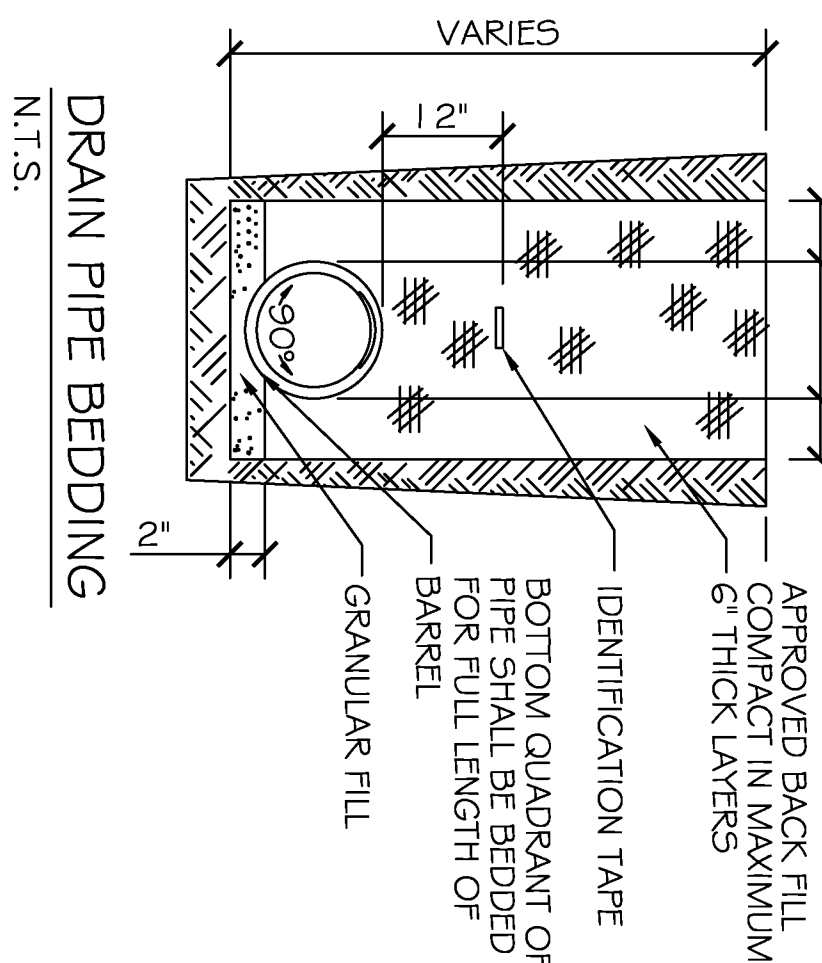


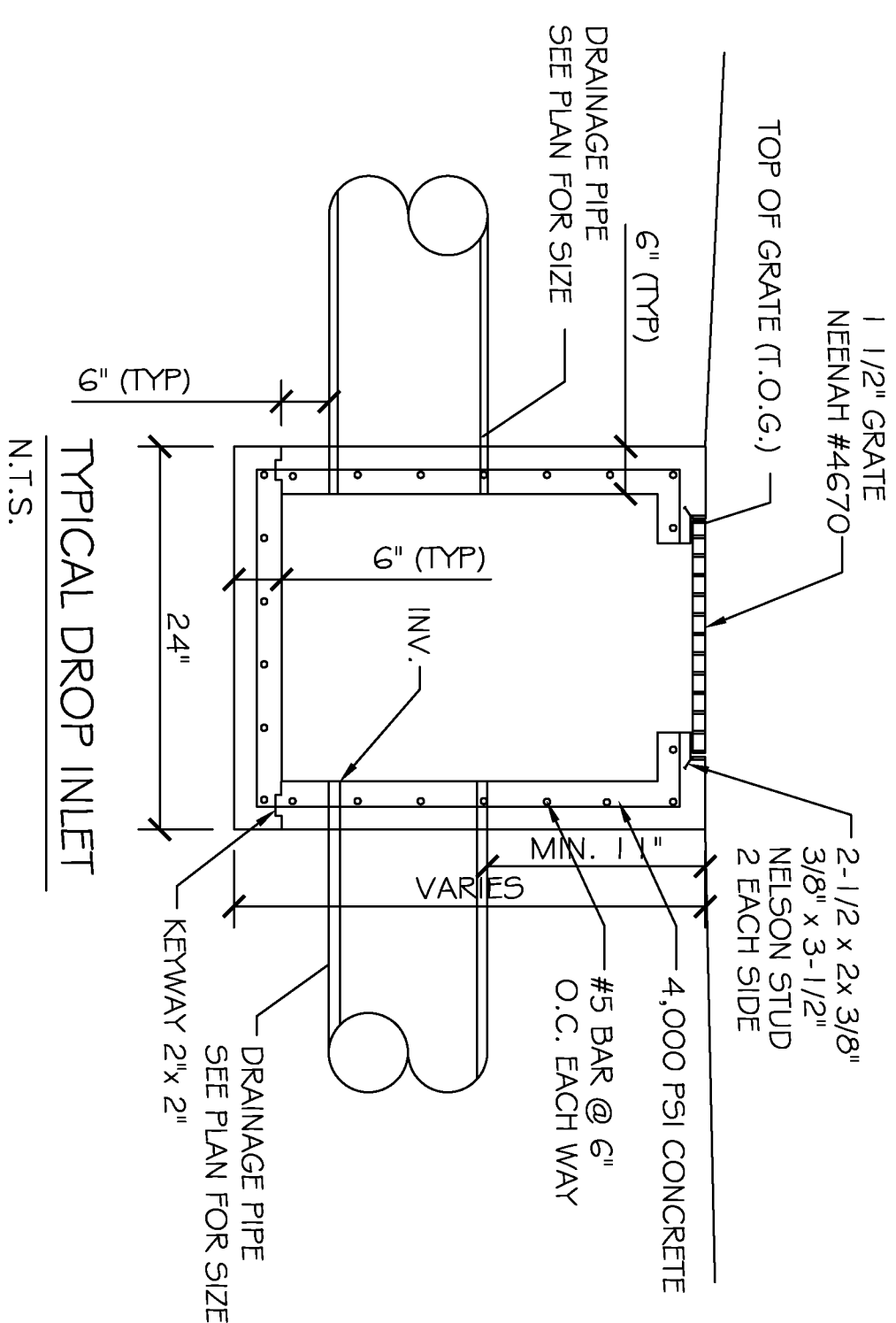
**DRAINAGE PLAN**  
SCALE: 1/8" = 1'-0"



**ORIFICE DETAIL**  
N.T.S.



**DRAIN PIPE BEDDING**  
N.T.S.



**TYPICAL DROP INLET**  
N.T.S.

- DRAINAGE NOTES:**
- 1) DRAIN PIPE & FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE, WELDING CLASS 100 C-900 PVC.
  - 2) ELEVATIONS SHOWN ARE M.S.L.
  - 3) FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
  - 4) DOWN SPOUTS SHALL FLOW INTO SUB-SURFACE DRAINAGE SYSTEM.
  - 5) THERE IS NO EVIDENCE OF EXISTING OFF-SITE FLOW CROSSING THE PROPERTY. NEW DRAINAGE CALCULATIONS ARE DETERMINED ACCORDINGLY.

- LEGEND**
- NEW DROP INLET W/TEMP. SILT FENCE
  - PROPERTY LINE
  - SETBACK

- # 0.00' - NEW ELEVATION
- # 0.00' - INVERT ELEVATION
- # 0.00' - TOP OF GRATE ELEVATION
- NEW DRAINAGE PIPE
- EXISTING DRAINAGE PIPE
- SHEET FLOW DIRECTION

**PAUL REES OFFICE BUILDING**

**STORMWATER RUN OFF CALCULATIONS -- RATIONAL METHOD**

**PROJECT:** STORMWATER RUN OFF CALCULATIONS -- RATIONAL METHOD  
**PRIOR DEVELOPMENT**  
25 Year Frequency

$Q_1 = A c_1$					
Watertight Surfaces	$c(1) = 0.9$	0	$sqft = 0.000$ Acres		
Gravel Surface	$c(2) = 0.25$	0	$sqft = 0.000$ Acres		
Green Space	$c(3) = 0.15$	10808	$sqft = 0.248$ Acres		
Summary	$c = 0.15$	10808	$sqft = 0.248$ Acres		
Duration (D) = Time of concentration (TC)	$TC = .7039(L^{.3917})(C^{-1.1309})^{.5} \sim .1985$				
where	$L = 140$ $C = 0.15$ $S = 1.0000$				
therefore	$TC = D = 21.69$ $I = 3.64$				
and from Rainfall Intensity Table	$Q_1 = 0.135$ cfs	1.0% reduction	$0.014$ cfs		
$Q_2 = A c_2$					
Watertight Surfaces	$c(1) = 0.9$	6028	$sqft = 0.136$ Acres		
Gravel Surface	$c(2) = 0.25$	0	$sqft = 0.000$ Acres		
Green Space	$c(3) = 0.15$	4780	$sqft = 0.110$ Acres		
Summary	$c = 0.57$	10808	$sqft = 0.248$ Acres		

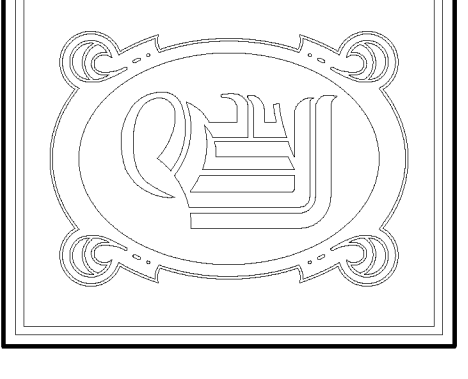
**POST DEVELOPMENT**  
25 Year Frequency

$D = \text{Time of concentration (TC)}$   
 $TC = .7039(L^{.3917})(C^{-1.1309})^{.5} \sim .1985$   
where  
 $L = 122$   
 $C = 0.57$   
 $S = 2.5410$   
therefore  
and from Rainfall Intensity Table  
 $TC = D = 12.16$   
 $I = 3.64$   
 $Q_2 = 0.513$  cfs

<b>DEFINITION REQUIRED ONE HOUR DETENTION DETENTION DIMENSIONS</b>	$Q_2 - Q_1$			
DEFINITION REQUIRED	$Q_2 - Q_1$	0.36 cfs		
DEFINITION DIMENSIONS		1360.0 cft	72 feet	40 feet
			40 feet	0.47 feet

<b>DISCHARGE END AREA REQUIREMENTS</b>			
Allowable run off	$Q = cA(2.48h)^{.1/2}$	where $Q$ is allowable run off	
Friction loss factor	$c = 0.014$ cfs		
Acceleration	$g = 32.16$ ft/ft/sec		
Height above invert	$h = 3.00$ feet		
End area	$A = 0.002$ sqft		
REQUIRED CONDUIT =	0.54 inch diameter		

<b>DEFINITION REQUIREMENTS</b>			
DEFINITION REQUIRED	$Q_2 - Q_1$	0.36 cfs	
DEFINITION DIMENSIONS		1360.0 cft	72 feet
			40 feet



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**PAUL REES OFFICE BUILDING**  
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**DRAINAGE PLAN**

REV:  
SCALE: AS NOTED  
JOB#: 2104  
DATE: 05-20-11  
SHEET 4