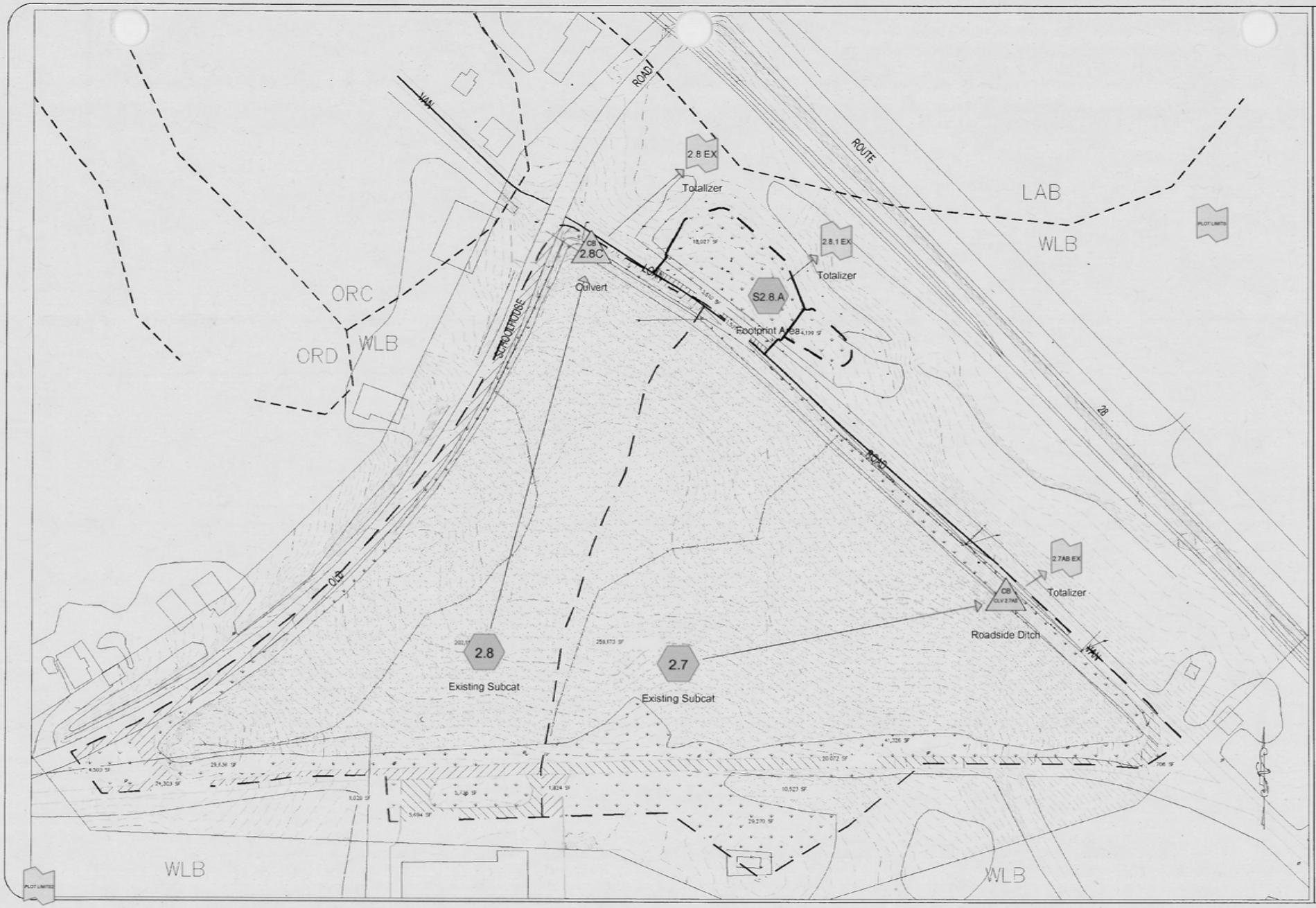
EAST PARKING AREA




Belleayre Mtn.Ski Center UMP
Proposed East Parking
Existing Stormwater Modeling Conditions

NYS Department of Environmental Conservation
Bureau of Design & Construction

Subcat Reach Pond Link

**Drainage Diagram for EX East Parking 110509**

Prepared by NYSDEC DOP BD&C, Printed 11/6/2009

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## Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 10.582 | 70 | Woods, Good, HSG C (2.7,2.8) |
| 3.711 | 74 | Pasture/grassland/range, Good, HSG C (2.7,2.8,S2.8.A) |
| 0.899 | 98 | Paved roads w/curbs & sewers (2.7,2.8,S2.8.A) |
| **15.193** | | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (acres) | Soil Goup | Subcatchment Numbers |
|---|---|---|
| 0.000 | HSG A | |
| 0.000 | HSG B | |
| 14.293 | HSG C | 2.7, 2.8, S2.8.A |
| 0.000 | HSG D | |
| 0.899 | Other | 2.7, 2.8, S2.8.A |
| **15.193** | | **TOTAL AREA** |

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment 2.7: Existing Subcat** Runoff Area=362,146 sf 5.35% Impervious Runoff Depth>2.96"
Flow Length=925' Tc=34.3 min CN=72 Runoff=19.64 cfs 2.054 af

**Subcatchment 2.8: Existing Subcat** Runoff Area=272,292 sf 6.72% Impervious Runoff Depth>3.05"
Flow Length=1,056' Tc=42.0 min CN=73 Runoff=13.23 cfs 1.590 af

**Subcatchment S2.8.A: Footprint Area** Runoff Area=27,357 sf 5.56% Impervious Runoff Depth>3.28"
Tc=6.0 min CN=75 Runoff=3.66 cfs 0.172 af

**Pond 2.8C: Culvert** Peak Elev=1,894.60' Inflow=13.23 cfs 1.590 af
Outflow=13.23 cfs 1.590 af

**Pond CLV 2.7AB: Roadside Ditch** Peak Elev=1,893.15' Inflow=19.64 cfs 2.053 af
Primary=3.80 cfs 1.322 af Secondary=15.85 cfs 0.732 af Outflow=19.64 cfs 2.053 af

**Link 2.7AB EX: Totalizer** Inflow=19.64 cfs 2.053 af
Primary=19.64 cfs 2.053 af

**Link 2.8 EX: Totalizer** Inflow=13.23 cfs 1.590 af
Primary=13.23 cfs 1.590 af

**Link 2.8.1 EX: Totalizer** Inflow=3.66 cfs 0.171 af
Primary=3.66 cfs 0.171 af

**Link PLOT LIMITS:**
Primary=0.00 cfs 0.000 af

**Link PLOT LIMITS2:**
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 15.193 ac Runoff Volume = 3.816 af Average Runoff Depth = 3.01"**
**94.08% Pervious = 14.293 ac 5.92% Impervious = 0.899 ac**

## Summary for Subcatchment 2.7: Existing Subcat

Ru = 19.64 cfs @ 12.31 hrs, Volume= 2.054 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr Q10 Rainfall=6.00"

| Area (sf) | CN | Description |
|---|---|---|
| 258,854 | 70 | Woods, Good, HSG C |
| 83,932 | 74 | Pasture/grassland/range, Good, HSG C |
| 19,360 | 98 | Paved roads w/curbs & sewers |
| 362,146 | 72 | Weighted Average |
| 342,786 | | Pervious Area |
| 19,360 | | Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 18.7 | 100 | 0.0850 | 0.09 | | **Sheet Flow, SHT**<br>Woods: Dense underbrush n= 0.800 P2= 4.00" |
| 15.0 | 551 | 0.0600 | 0.61 | | **Shallow Concentrated Flow, SCF**<br>Forest w/Heavy Litter Kv= 2.5 fps |
| 0.6 | 274 | 0.0200 | 7.46 | 44.74 | **Channel Flow, OCF**<br>Area= 6.0 sf Perim= 8.7' r= 0.69'<br>n= 0.022 Earth, clean & straight |
| 34.3 | 925 | Total | | | |

## Summary for Subcatchment 2.8: Existing Subcat

Ru = 13.23 cfs @ 12.37 hrs, Volume= 1.590 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr Q10 Rainfall=6.00"

| Area (sf) | CN | Description |
|---|---|---|
| 202,098 | 70 | Woods, Good, HSG C |
| 51,898 | 74 | Pasture/grassland/range, Good, HSG C |
| 18,296 | 98 | Paved roads w/curbs & sewers |
| 272,292 | 73 | Weighted Average |
| 253,996 | | Pervious Area |
| 18,296 | | Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 20.3 | 100 | 0.0700 | 0.08 | | **Sheet Flow, SHT**<br>Woods: Dense underbrush n= 0.800 P2= 4.00" |
| 21.4 | 718 | 0.0500 | 0.56 | | **Shallow Concentrated Flow, SCF**<br>Forest w/Heavy Litter Kv= 2.5 fps |
| 0.3 | 238 | 0.0900 | 15.82 | 94.91 | **Channel Flow, OCF**<br>Area= 6.0 sf Perim= 8.7' r= 0.69'<br>n= 0.022 Earth, clean & straight |
| 42.0 | 1,056 | Total | | | |

## Summary for Subcatchment S2.8.A: Footprint Area

Runoff = 3.66 cfs @ 11.97 hrs, Volume= 0.172 af, Depth> 3.28"

Ru by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr Q10 Rainfall=6.00"

| Area (sf) | CN | Description |
|---|---|---|
| 25,836 | 74 | Pasture/grassland/range, Good, HSG C |
| 1,521 | 98 | Paved roads w/curbs & sewers |
| 27,357 | 75 | Weighted Average |
| 25,836 | | Pervious Area |
| 1,521 | | Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry, Direct Input of Minimum Tc of 0.1 hr** |

## Summary for Pond 2.8C: Culvert

Inflow Area = 6.251 ac, 6.72% Impervious, Inflow Depth > 3.05" for Q10 event
Inflow = 13.23 cfs @ 12.37 hrs, Volume= 1.590 af
Outflow = 13.23 cfs @ 12.38 hrs, Volume= 1.590 af, Atten= 0%, Lag= 0.6 min
Primary = 13.23 cfs @ 12.38 hrs, Volume= 1.590 af

Routing by Sim-Route method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,894.60' @ 12.38 hrs
Flood Elev= 1,898.15'

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 1,892.82' | **24.0" x 87.0' long 24" CMP Culvert** CMP, square edge headwall, Ke= 0.500<br>Outlet Invert= 1,890.65' S= 0.0249 '/' Cc= 0.900 n= 0.025 Corrugated metal |
| #2 | Primary | 1,898.15' | **100.0' long x 30.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

**Primary OutFlow** Max=13.23 cfs @ 12.38 hrs HW=1,894.60' TW=0.00' (Dynamic Tailwater)
└─**1=24" CMP Culvert** (Barrel Controls 13.23 cfs @ 5.94 fps)
└─**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Summary for Pond CLV 2.7AB: Roadside Ditch

Inflow Area = 8.314 ac, 5.35% Impervious, Inflow Depth > 2.96" for Q10 event
Inflow = 19.64 cfs @ 12.31 hrs, Volume= 2.053 af
Outflow = 19.64 cfs @ 12.32 hrs, Volume= 2.053 af, Atten= 0%, Lag= 0.6 min
Primary = 3.80 cfs @ 12.32 hrs, Volume= 1.322 af
Secondary = 15.85 cfs @ 12.32 hrs, Volume= 0.732 af

Routing by Sim-Route method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 1,893.15' @ 12.32 hrs
Flood Elev= 1,895.00'

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 1,892.70' | **12.0" x 30.0' long Culvert 2.7B** RCP, sq.cut end projecting, Ke= 0.500<br>Outlet Invert= 1,891.70' S= 0.0333 '/' Cc= 0.900 n= 0.012 |
| #2 | Primary | 1,891.64' | **12.0" x 30.0' long Culvert 2.7A** RCP, sq.cut end projecting, Ke= 0.500<br>Outlet Invert= 1,890.64' S= 0.0333 '/' Cc= 0.900 n= 0.012 |
| #3 | Secondary | 1,893.00' | **Custom Weir/Orifice, C= 2.62**<br>Head (feet) 0.00 1.00 2.00<br>Width (feet) 71.30 240.85 370.13 |

**Primary OutFlow** Max=3.80 cfs @ 12.32 hrs HW=1,893.15' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert 2.7A** (Inlet Controls 3.80 cfs @ 4.83 fps)

**Secondary OutFlow** Max=15.84 cfs @ 12.32 hrs HW=1,893.15' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert 2.7B** (Inlet Controls 0.77 cfs @ 2.28 fps)
└─**3=Custom Weir/Orifice** (Weir Controls 15.06 cfs @ 1.22 fps)

## Summary for Link 2.7AB EX: Totalizer

Inflow Area = 8.314 ac, 5.35% Impervious, Inflow Depth > 2.96" for Q10 event
Inflow = 19.64 cfs @ 12.32 hrs, Volume= 2.053 af
Primary = 19.64 cfs @ 12.33 hrs, Volume= 2.053 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Summary for Link 2.8 EX: Totalizer

Inflow Area = 6.251 ac, 6.72% Impervious, Inflow Depth > 3.05" for Q10 event
Inflow = 13.23 cfs @ 12.38 hrs, Volume= 1.590 af
Primary = 13.23 cfs @ 12.39 hrs, Volume= 1.590 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Summary for Link 2.8.1 EX: Totalizer

Inflow Area = 0.628 ac, 5.56% Impervious, Inflow Depth > 3.28" for Q10 event
Inflow = 3.66 cfs @ 11.97 hrs, Volume= 0.171 af
Primary = 3.66 cfs @ 11.98 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Summary for Link PLOT LIMITS:

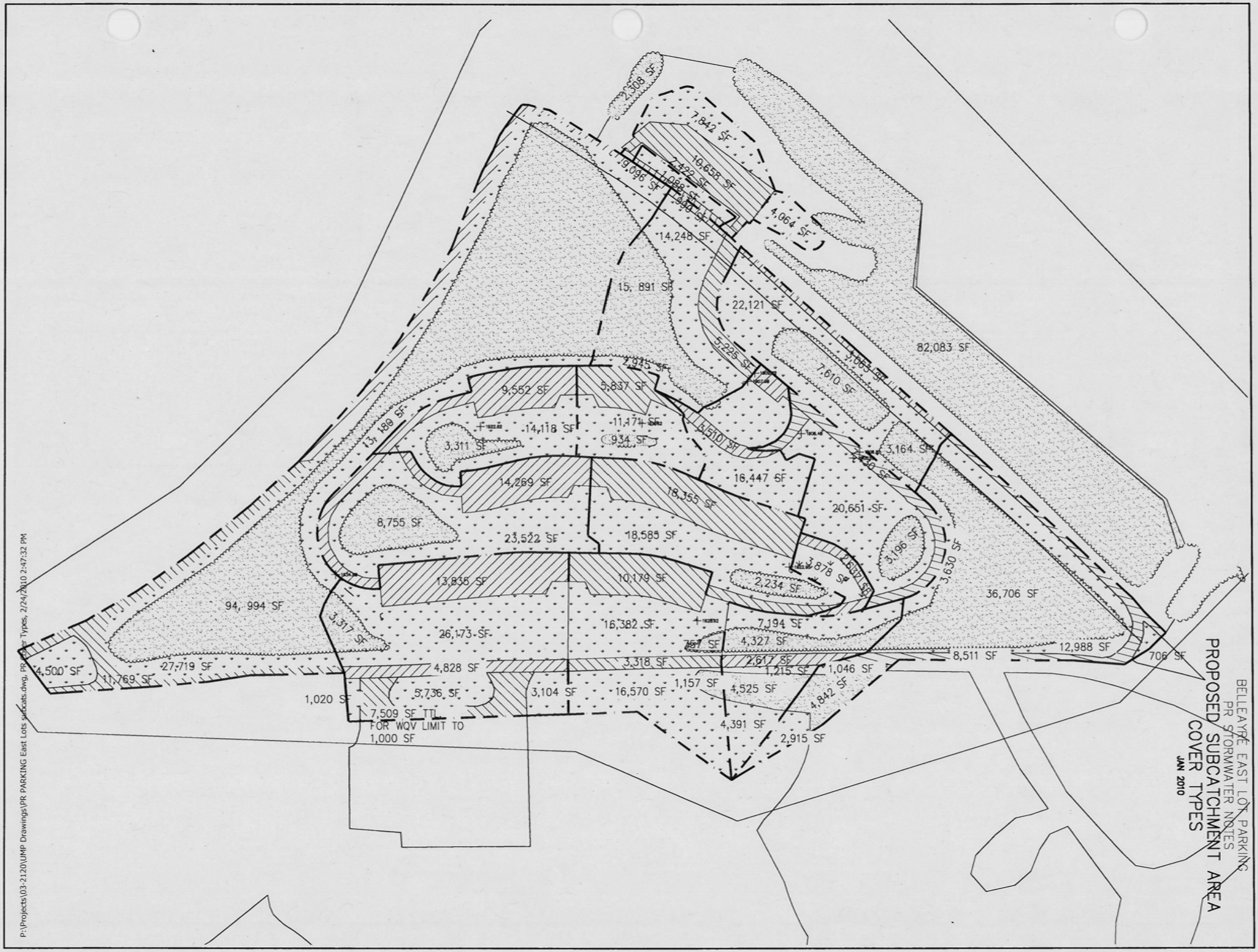
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Summary for Link PLOT LIMITS2:

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs



BELLEAYRE EAST LOT PARKING
PR STORMWATER NOTES
PROPOSED SUBCATCHMENT AREA
COVER TYPES
JAN 2010
2,308 SF
7,842 SF
10,658 SF
2,422 SF
9,096 SF
4,064 SF
14,248 SF
15, 891 SF
22,121 SF
5,225 SF
82,083 SF
7,610 SF
2,945 SF
9,552 SF
5,837 SF
13, 180 SF
14,118 SF
11,171 SF
934 SF
3,311 SF
3,510 SF
3,164 SF
14,269 SF
16,447 SF
18,355 SF
20,651 SF
8,755 SF
23,522 SF
18,585 SF
3,196 SF
3,630 SF
13,835 SF
10,179 SF
2,234 SF
3,878 SF
36,706 SF
94, 994 SF
3,317 SF
26,173 SF
16,382 SF
7,194 SF
4,327 SF
12,988 SF
706 SF
8,511 SF
4,500 SF
11,769 SF
27,719 SF
4,828 SF
3,318 SF
2,617 SF
1,215 SF
1,046 SF
1,020 SF
5,736 SF
3,104 SF
16,570 SF
1,157 SF
4,525 SF
4,842 SF
7,509 SF TTL
FOR WQV LIMIT TO
1,000 SF
4,391 SF
2,915 SF
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