RECORD DRAWING
12/21/05

CAUTION ! ! !
UNDERGROUND UTILITIES

EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER DOES NOT ACCEPT THE RESPONSIBILITY FOR THE UTILITY LOCATIONS SHOWN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

NOTE: USE CURB AND TOE WALL IN VICINITY OF EXISTING SHRUBS AS NECESSARY TO PREVENT LOSS OF SHRUBS

NOTE: CONTRACTOR SHALL RE-ESTABLISH SOD IN ALL DISTURBED AREAS

NOTE: CONTRACTOR SHALL RE-ESTABLISH SOD IN ALL DISTURBED AREAS

1/2" IRF

BARBWIRE FENCE

CONCRETE

SEE DETAIL 'B'
270 SY OF ENKAMAT

ENKAMAT EROSION BLANKETS OR APPROVED EQUAL

12 SY OF 6" GROUTED ROCK RIPRAP

STA. 0+33.93 SD LINE 'A'
CONST. 10' CURB INLET
FL 18" RCP = 561.75
T/I = 565.75

SEE DETAIL 'C'

STA. 0+12 SD LINE 'A'
CONST. SLOPING HDWL
FL 18" RCP = MATCH EXIST.

SEE DETAIL 'A'

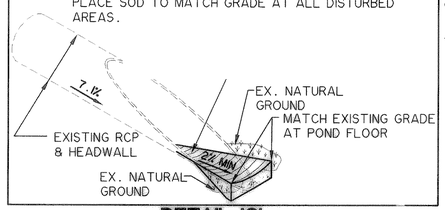
FF=570.00

MATCH EXISTING GRADE

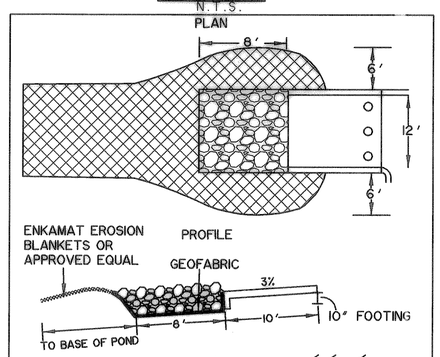
MATCH EXISTING GRADE

OBSERVATION TRAIL
60' ROW

NOTES:
1. SCARIFY CONCRETE PIPE INVERT PRIOR TO PLACEMENT OF GROUT.
2. CONSTRUCT CONCRETE TOE AND SIDES AROUND PIPE TO PREVENT EROSION UNDER PIPE & GROUT.
3. BACKFILL TO 95% STANDARD PROCTOR DENSITY.
4. PLACE TOPSOIL AT 3" BELOW FINISHED GRADE. PLACE SOD TO MATCH GRADE AT ALL DISTURBED AREAS.



DETAIL 'C'
N.T.S.



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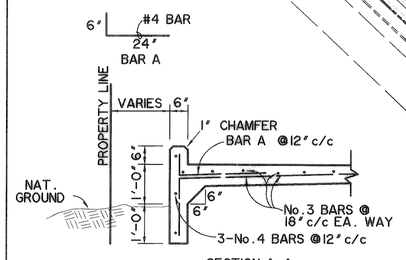
N.T.S.



SECTION A-A

PAVEMENT WITH CURB AND TOEWALL

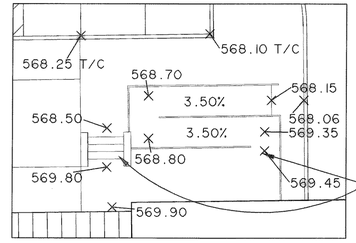
FLOW CALCULATIONS FOR 12' CURB OPENING

Q=CIA	
C=0.7	Capacity of 12' CURB OPENING
I_{100}=9.8	
A=2.41 AC	USING MANNING'S EQUATION
Q= 16.5 cfs USE 17 cfs	Qcap=(1.49/n)(A)(S^(1/2))(R^(2/3))
	WHERE
Q=VA	n=0.013
V=4.5 fps (Desired)	A=0.33' * 12'
A=Depth of flow * L	S=0.03
LET DEPTH=4" OR 0.33'	R=(3.96/12.66)=0.3128
17cfs=(4 ft/s)(0.33 * L)	Qcap=(1.49/0.013)(3.96)(0.03^(1/2))(0.3128^(2/3))
LENGTH = 12'	Qcap = 36.5cfs >16 cfs => O.K.

LEGEND

- R.O.W. LINE
- STORM DRAIN LINE
- STORM DRAIN INLET
- MATCH LINE
- LOT LINE
- EXIST. MAJOR CONTOUR
- EXIST.MINOR CONTOUR
- FLOW DIRECTION
- H.P. HIGH POINT
- XXX PROPOSED CONTOUR
- TC TOP OF CURB
- TP TOP OF PAVEMENT
- FF FINISHED PAD

DETAIL 'A'
1"=10'



SEE STRUCTURAL PLAN FOR STAIRS AND RAMP DETAILS

BENCHMARK
BOX CUT ON THE NORTH CURB LINE OF OBSERVATION TRAIL AT THE BEGINNING OF THE CUL-DE-SAC WITH INNOVATION DRIVE
ELEV. = 573.23 FEET

0 30 60 90 120

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GRADING & STORM DRAIN PLAN

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REGISTERED PROFESSIONAL ENGINEER

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