CARSON CITY WATERFALL FIRE WATERSHED IMPROVEMENTS - PHASE 3

Prepared For

CARSON CITY PARKS AND RECREATION DEPARTMENT

CARSON CITY, NEVADA

ABBREVIATIONS

AC	ASPHALT CEMENT CONCRETE
APPROX	APPROXIMATE
BC	BEGIN CURVE
BM	BENCH MARK
BOC	BACK FACE OF CURB
BVC	BEGIN VERTICAL CURVE
C/L	CENTER LINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONST	CONSTRUCT
COR	CORNER
CP	CONCRETE PIPE
CTR	CENTER
C Y	CUBIC YARD
DI	DROP INLET
DIA	DIAMETER
E	EAST
E	ELECTRIC
EA	EACH
EC	END CURVE
EL, ELEV	ELEVATION
EVC	END VERTICAL CURVE
EX, EXIST	EXISTING
FES	FLARED END SECTION
FG	FINISH GRADE
F/L	FLOW LINE
FT, '	FOOT
G	GAS
GB	GRADE BREAK
GRND	GROUND
IE	INVERT ELEVATION
IN, "	INCH
LF	LINEAR FOOT
LT	LEFT
MAX	MAXIMUM
MG	MILLION GALLONS
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MVC	MIDDLE OF VERTICAL CURVE
NTS	NOT TO SCALE
OC	ON CENTER
OG	ORIGINAL GROUND
PE	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION OF VERTICAL CURVE
P/L	PROPERTY LINE
PP, P	POLEPOWER POLE
PRC	POINT OF REVERSE CURVE
PROP	PROPERTY
R	RADIUS
RAD PT	RADIUS POINT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RG	ROUGH GRADE
RT	RIGHT
R/W	RIGHT OF WAY
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FOOT
SHT	SHEET
SPECS	SPECIFICATIONS
SPPCO	SIERRA PACIFIC POWER COMPANY
SRP	SPIRAL RIBBED PIPE
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SW GAS	SOUTHWEST GAS CORPORATION
TEL	TELEPHONE
TYP	TYPICAL
VC	VERTICAL CURVE
VG	VALLEY GUTTER
WV	WATER VALVE
&	AND
@	AT
°	DEGREE
'	MINUTE
"	SECOND
%	PERCENT

LOCATION MAP

NO SCALE

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GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" REVISION (SSPWC) AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" (SDPWC) AS ADOPTED BY CARSON CITY. THE CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE CARSON CITY PERMIT CENTER PRIOR TO THE START OF CONSTRUCTION.
2. ALL TRAFFIC CONTROL AND BARRICADING WITHIN THE CARSON CITY RIGHT-OF-WAY SHALL CONFORM TO SECTION 130 OF THE STANDARD SPECIFICATIONS, PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND NEVADA WORK ZONE TRAFFIC CONTROL HANDBOOK, 1986 EDITION. NO STREET CLOSURES WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF A TRAFFIC CONTROL PLAN BY THE CITY ENGINEER.
3. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (1-800-227-2600) FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL CALL CARSON CITY PUBLIC WORKS (887-2355) FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL TWENTY-FOUR (24) HOURS PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING.
5. FINAL INSPECTIONS WILL BE PERFORMED BY CARSON CITY PUBLIC WORKS ACCORDING TO THE CARSON CITY INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE CONTRACTOR AND 10 WORKING DAYS TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF THE FINAL INSPECTION MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OR ANY APPROVAL OF A CERTIFICATE OF OCCUPANCY BY CARSON CITY.
6. MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY CARSON CITY PUBLIC WORKS. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY PUBLIC WORKS WILL REQUIRE REMOVAL AT THE CONTRACTORS EXPENSE.
7. THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.
8. PLAN APPROVAL SHALL EXPIRE ONE YEAR FROM DATE OF APPROVAL UNLESS CONSTRUCTION HAS BEEN INITIATED. (CCMC 12.06.180F, 12.01.140D)
9. ALL EARTHWORK TO BE COMPLETED PER RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY BLACK EAGLE CONSULTING, INC., TITLED "CARSON CITY, WATER AND SEDIMENT ATTENUATION PROJECT", AND DATED DECEMBER 2007, AND THE STANDARD SPECIFICATIONS.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE CARSON CITY WATER TREATMENT PLANT AT ALL TIMES.

BASIS OF BEARING:

NV STATE PLANE WEST NAD 83 ON NDOT CONTROL POINTS "ORROO7 X" AND "PRISON HILL X", GROUND COORDINATES.

BASIS OF ELEVATION:

NAVD 88 ON NDOT CONTROL POINT "PRISON HILL X" ELEV. 5727.88.

ESTIMATED EARTHWORK QUANTITIES

TOTAL EXCAVATION: 43,400 C.Y.

TOTAL FILL ROADS AND BASINS: 31,700 C.Y.*

TOTAL TO TAYLOR CANYON DISPOSAL SITE: 11,700 C.Y.

*TOTAL FILL INCLUDES 9,000 C.Y. FOR SCREENING AND SALVAGING ROCK WHICH IS A PART OF THE FILL.

CONTACTS:

PREPARED FOR:

CARSON CITY PARKS AND RECREATION DEPARTMENT
3303 BUTTI WAY, BUILDING 9
CARSON CITY, NEVADA 89701
775-887-2262 EXT. 7341
CONTACT: JUAN GUZMAN, OPEN SPACE MANAGER

AND

CARSON CITY PUBLIC WORKS
3505 BUTTI WAY
CARSON CITY, NEVADA 89701
775-887-2355, EXT. 7370
CONTACT: ROBERT D. FELLOWS, P.E., SENIOR PROJECT MANAGER
Rfellows@carson.org

ENGINEER:

RESOURCE CONCEPTS, INC.
340 N. MINNESOTA ST.
CARSON CITY, NEVADA 89703
775-883-1600
CONTACT: GEORGE MAHE

Avoid cutting underground utility lines. It's costly.

CALL BEFORE YOU DIG.

1-800-227-2600

UNDERGROUND SERVICE ALERT (USA)

ENGINEERING · PLANNING · RESOURCE MANAGEMENT

RESOURCE CONCEPTS, INC.

340 N. MINNESOTA STREET
CARSON CITY, NEVADA 89703
PHONE: 775-883-1600 FAX: 775-883-1656
WEB SITE: www.rci-nv.com

212 ELKS POINT ROAD, STE. 443
P.O. BOX 11796
ZEPHYR COVE, NEVADA 89448
PHONE: 775-588-7500

DATE	REVISION

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

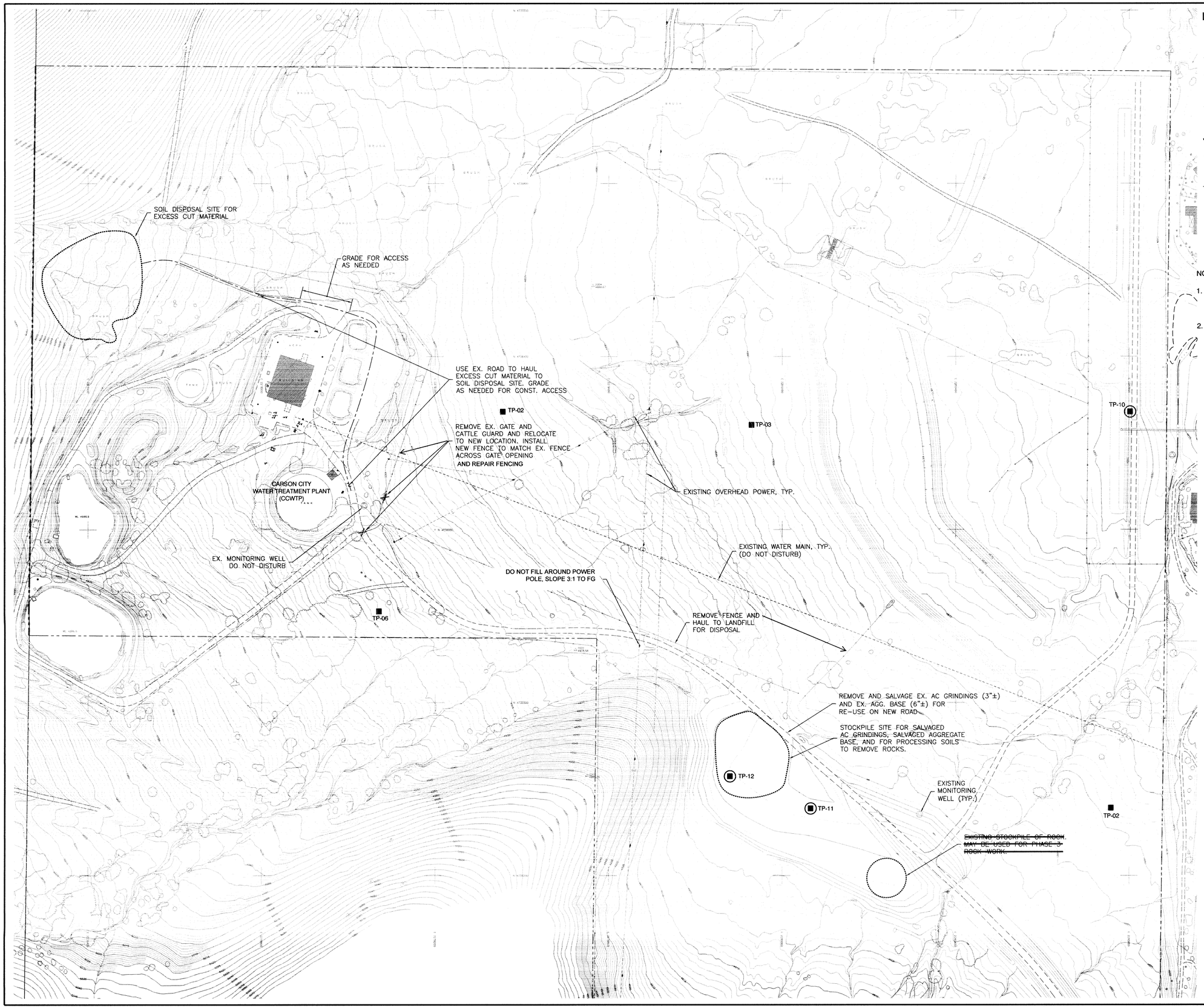
TITLE SHEET

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6480
6/27

JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET 1



LEGEND:

- EXISTING BUILDING
- EXISTING WATER LINE
- EXISTING OVERHEAD POWER
- EXISTING POWER POLE
- EXISTING FENCE
- EXISTING VEGETATION
- EXISTING PROPERTY LINE
- EXISTING MAJOR TOPO (5 FT.)
- EXISTING MINOR TOPO (1 FT.)
- EXISTING EDGE OF ROAD
- TP-02 SOILS TEST PIT
- TP-11 SOILS TEST PIT & PERCOLATION TEST
- EXISTING MONITORING WELL

NOTES:

1. SEE GEOTECHNICAL INVESTIGATION REPORT BY BLACKEAGLE CONSULTING DATED DECEMBER 2007.
2. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ASSURE ACCESS IS MAINTAINED TO THE CCWTP FACILITIES DURING CONSTRUCTION.

SCALE: 1"=100'

Avoid cutting underground utility lines. It's costly.

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CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

EXISTING SITE, SOILS TEST PITS, AND SITE CLEARING

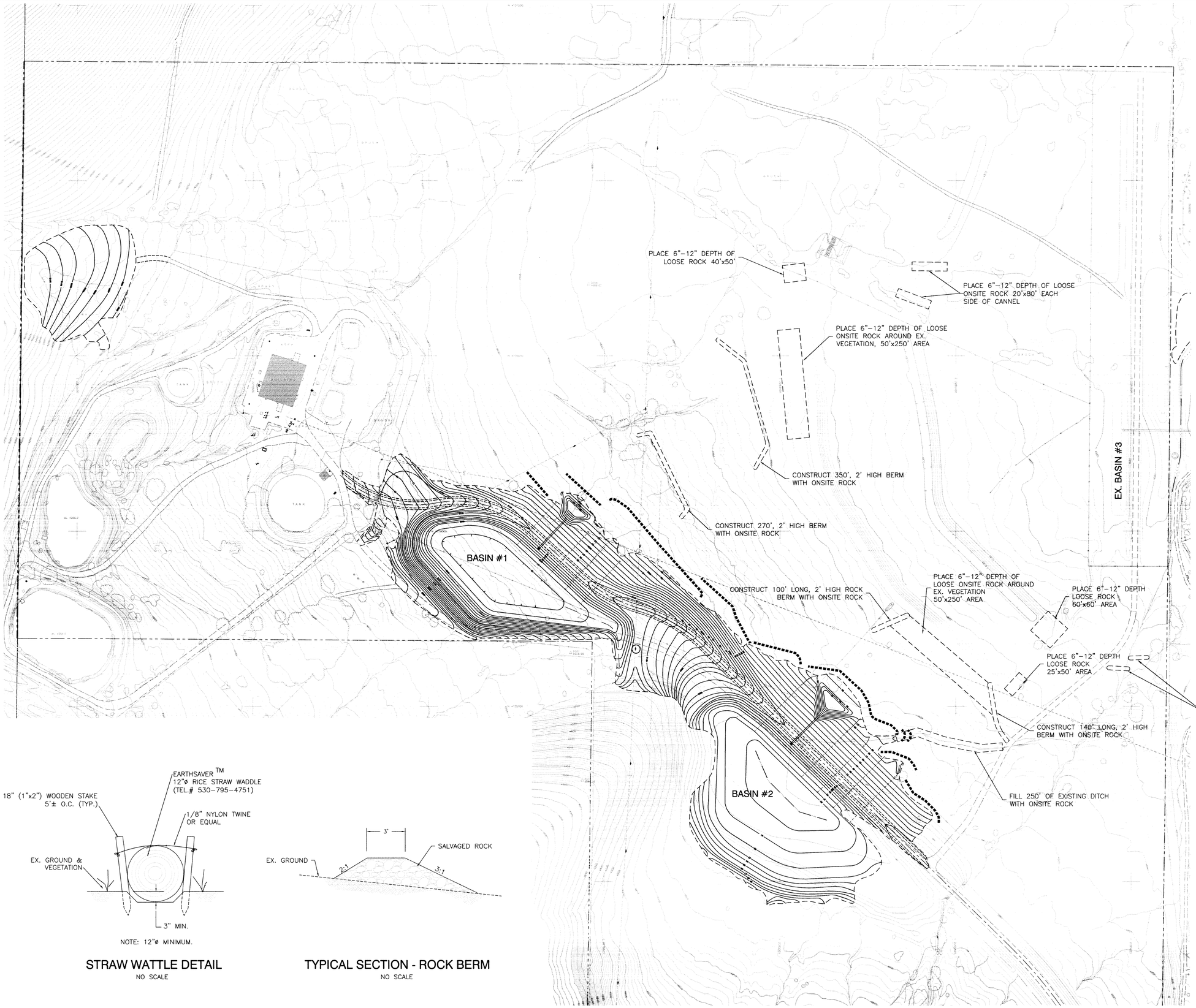
FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488
STATE OF NEVADA

6/27/11

JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET 2



LEGEND:

STRAW WATTLES TO REMAIN IN-PLACE

NOTES:

1. EXACT LOCATIONS AND LIMITS OF MINOR ROCK WORK SHALL BE PER THE DIRECTION OF THE ENGINEER.
2. ROCK FOR MINOR ROCK WORK SHALL BE SCREENED SALVAGED ONSITE ROCK 2"Ø AND LARGER.
3. ONCE ROCK IS IN-PLACE, A THIN LAYER OF ONSITE SOIL SHALL BE PLACED OVER THE ROCK AND SWEPT INTO THE VOIDS.
4. MINOR ROCK WORK TO BE REVEGETATED PER THE SPECIFICATIONS.

NOTE: 12"ø MINIMUM.

STRAW WATTLE DETAIL

NO SCALE

TYPICAL SECTION - ROCK BERM

NO SCALE

Avoid cutting underground utility lines. It's costly.

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CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

TEMPORARY EROSION CONTROL PLAN AND MINOR ROCK WORK

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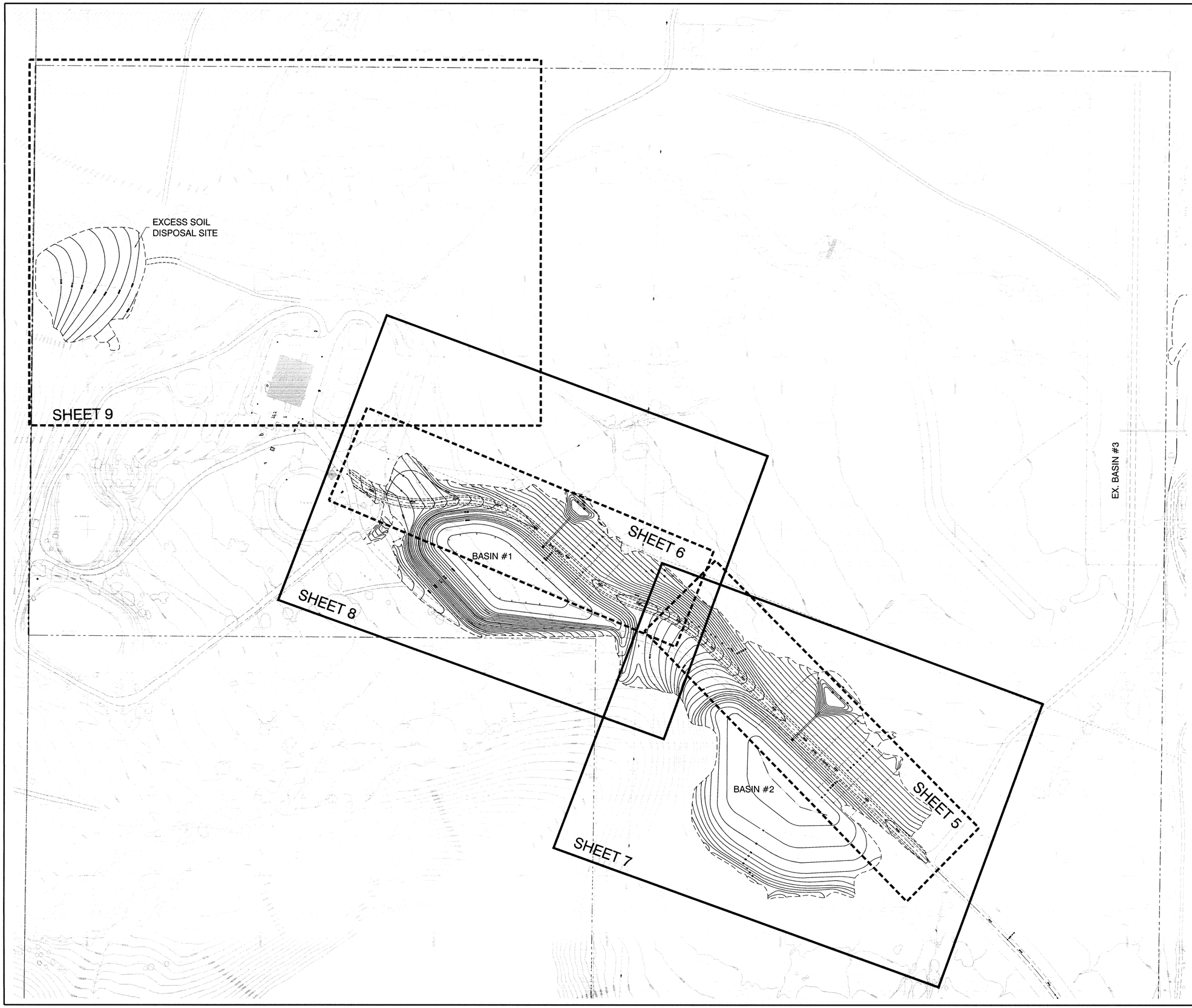
REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6949

JOB NO.: 06-225-12
DATE: 3-28-11
DESIGNED: GDM
DRAWN: MLM
CHECKED: GDM

SHEET 3



SCALE: 1"=100'

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CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

SHEET INDEX TO GRADING AND PLAN AND PROFILE SHEETS

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488
STATE OF NEVADA

6/27/11

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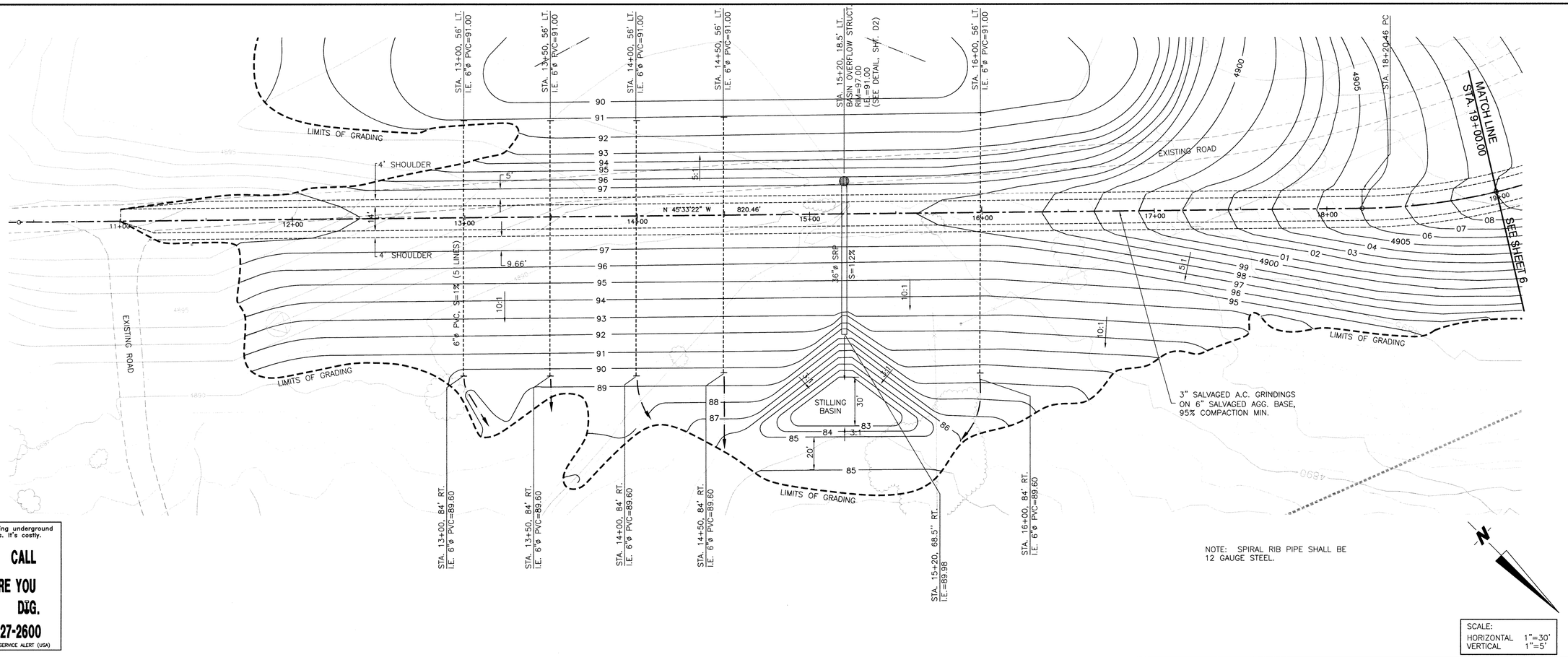
SHEET 4



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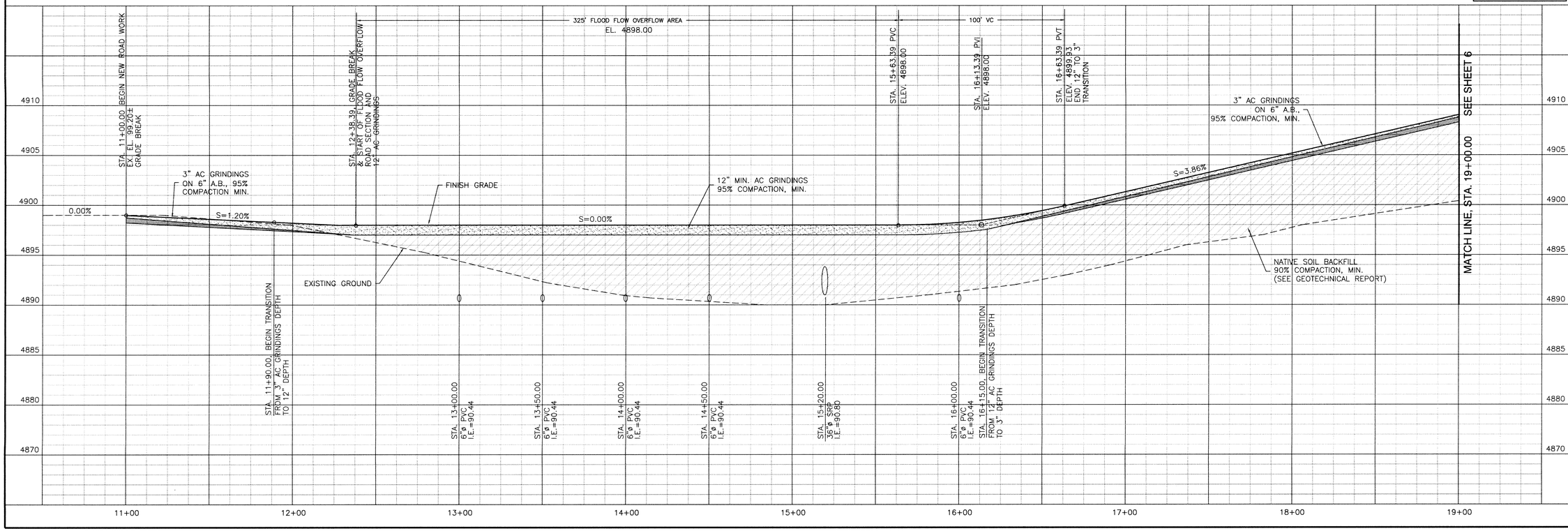
SCALE:
HORIZONTAL 1"=30'
VERTICAL 1"=5'



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CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

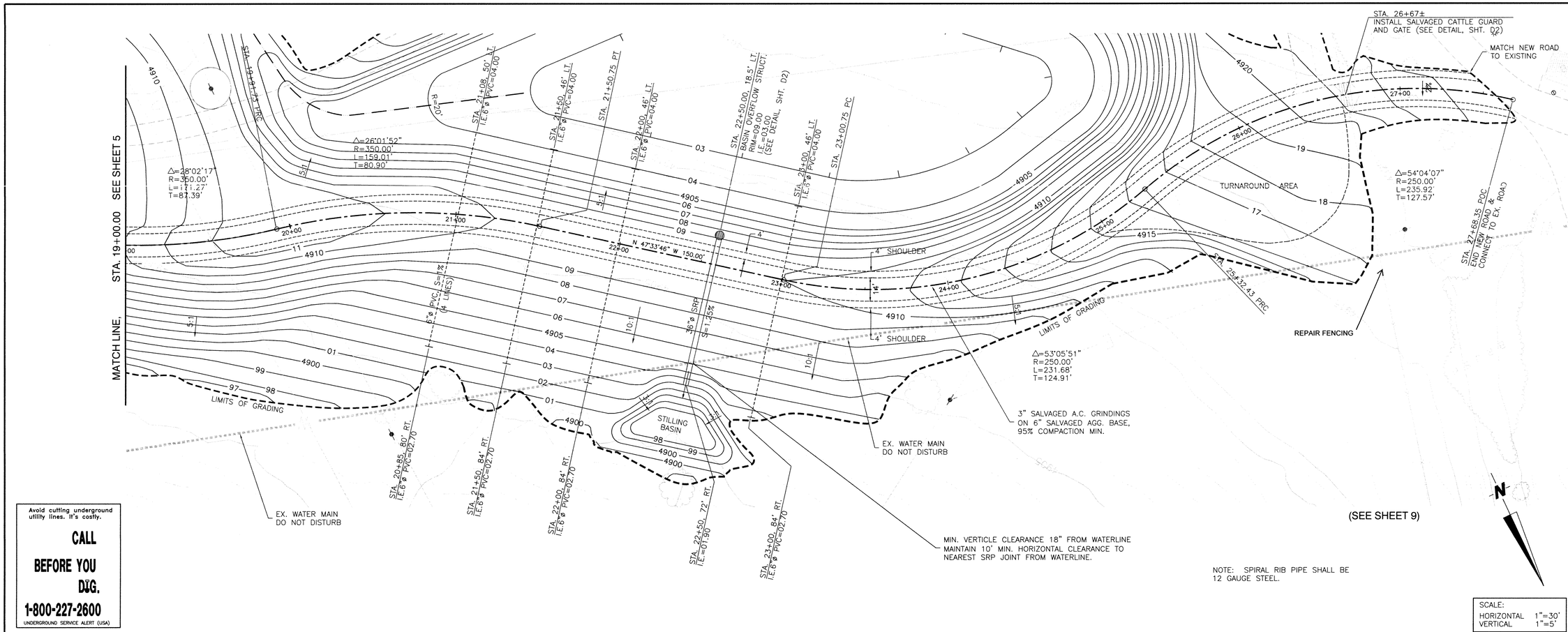
ACCESS ROAD
STA. 11+00.00 TO STA. 19+00.00

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488
STATE OF NEVADA
6/2/11

JOB NO.: 06-225-12
DATE: 3-28-11
DESIGNED: GDM
DRAWN: MLM
CHECKED: GDM

SHEET 5



NOTE: SPIRAL RIB PIPE SHALL BE 12 GAUGE STEEL.

SCALE:
HORIZONTAL 1"=30'
VERTICAL 1"=5'

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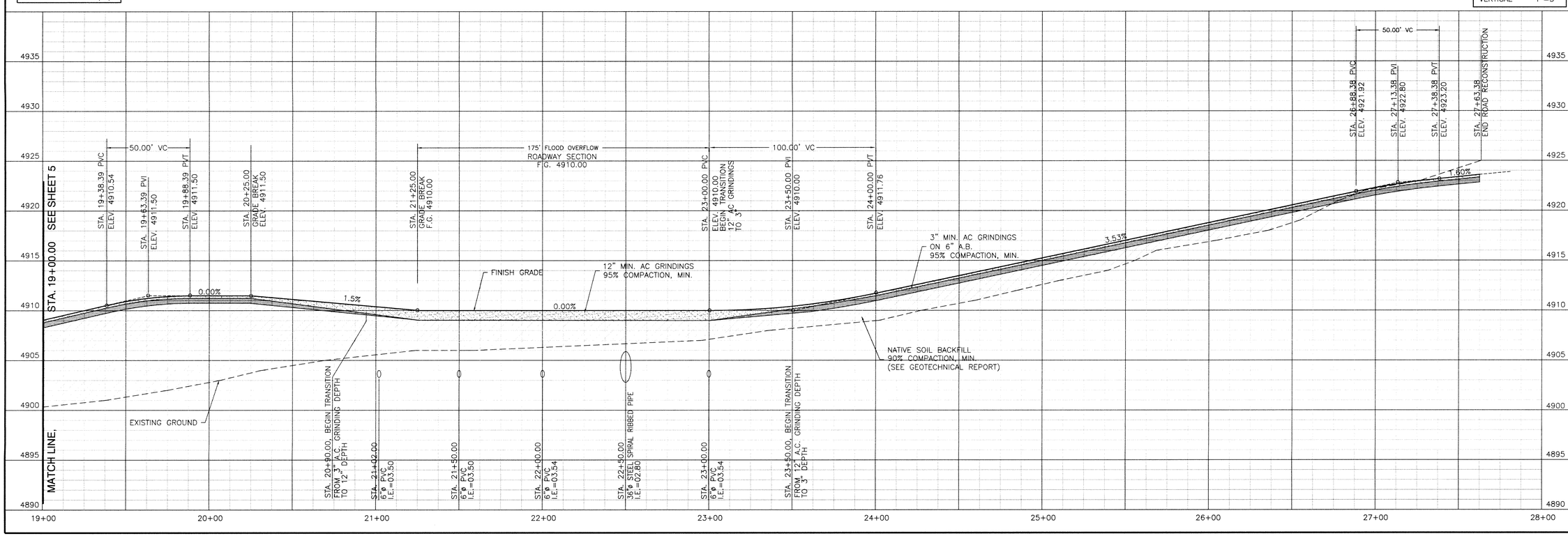

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REVISION | DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

ACCESS ROAD
STA. 19+00.00 TO STA. 27+68.35

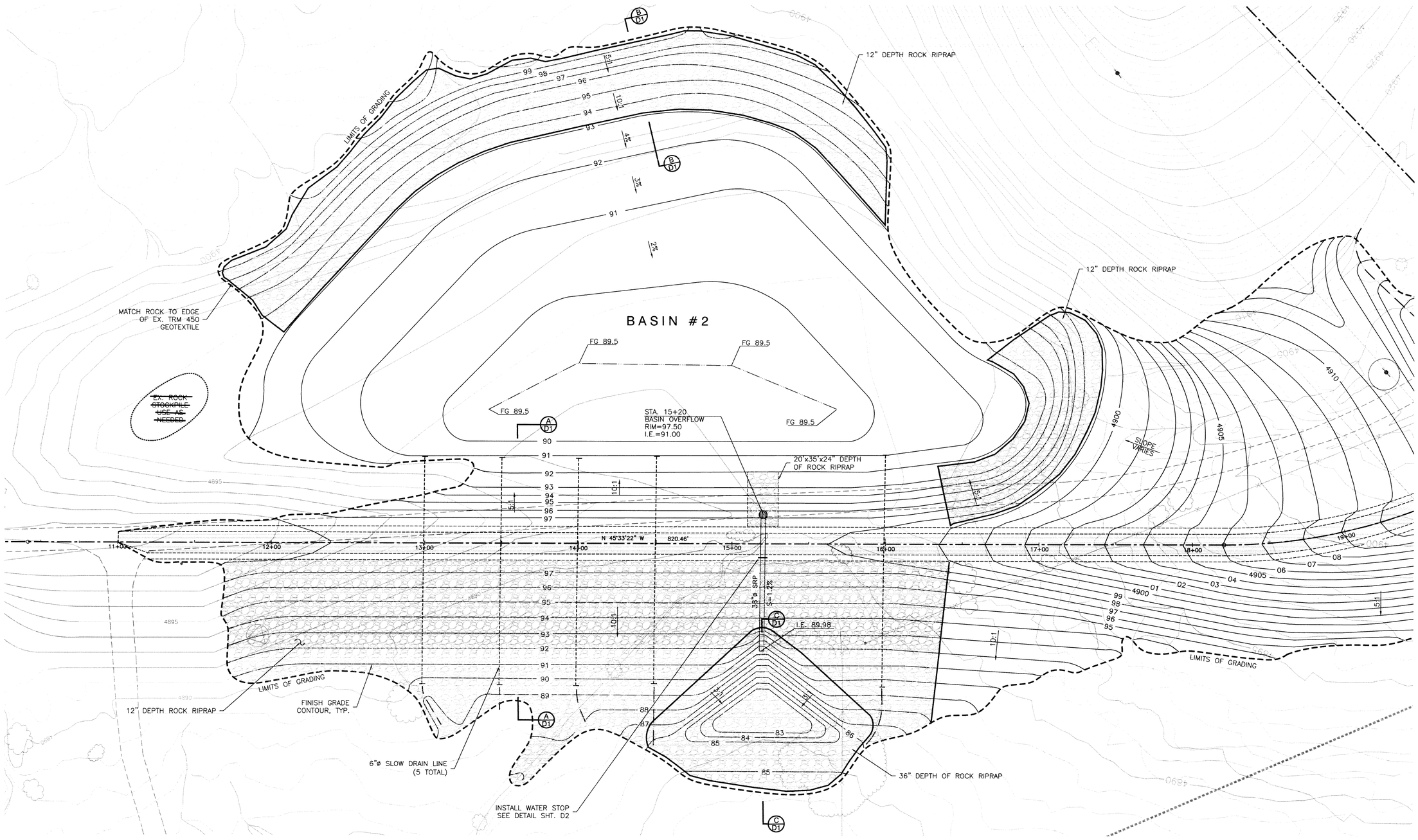
FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488
STATE OF NEVADA

6/27/11

JOB NO.: 06-225-12
DATE: 3-28-11
DESIGNED: GDM
DRAWN: MLM
CHECKED: GDM

SHEET 6



BASIN #2
FLOW DATE (Q100 = 560 CFS)

SLOW DRAINS: 5-6" Ø PVC PIPES
Q = 3.75 cfs

PRIMARY OUTLET: 36" Ø SRP
HEADWATER DEPTH (HW) = 8'
HW/D = 2.67
Q = 100 cfs, V = 14 fps

FLOOD SPILLWAY: ROAD SECTION, S = 2%, n = .025
AT D = 4", Q = 451 cfs, V = 3.9 fps
AT D = 5", Q = 655 cfs, V = 4.5 fps
SLOPE BELOW ROAD, S = 10%, N = 0.05
AT D = 4", Q = 566 cfs, V = 4.5 fps
AT D = 3", Q = 351 cfs, V = 3.7 fpS

Pond/Pit volume: 18.2 Acre-Ft
Area: 3.408 Acres
Elevation Range: 4889.50 to 4898.00

Storage Volumes

Elevation	Storage(AcreFt)
4890	0.1
4891	0.9
4892	2.3
4893	4.2
4894	6.5
4895	9.1
4896	11.9
4897	14.9
4898	18.2

NOTE:

SEE CROSS SECTIONS, SHEET D1.

Scale: 1"=30'

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REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

BASIN 2 GRADING PLAN

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488

JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET 7

TREES TO REMAIN

12" DEPTH ROCK RIPRAP

LIMITS OF GRADING

REMOVE EX. GATE & CATTLE GUARD & RELOCATE TO NEW ROAD ENTRANCE. INSTALL NEW FENCE TO MATCH EX. AT THIS LOCATION

CONST. 12' WIDE CONNECTOR RD. TO EXISTING ROAD PLACE 4" A.B. & COMPACT TO 95% MIN.

FILL TO CONSTRUCT TURNAROUND, GRADE TO DRAIN, PLACE 4" A.B., & COMPACT TO 95% MIN.

VEHICLE TURNAROUND AREA

REPAIR FENCING

FG 4902.0

BASIN #1

20'x35'x24" DEPTH OF ROCK RIPRAP

STA. 22+50
BASIN OVERFLOW
RIM=09.00, I.E.=03.00

N 47°33'46" W 150.00'

36"ø SRP
S=1.25%

INSTALL WATER STOP SEE DETAIL SHT. D2

36" DEPTH OF ROCK RIPRAP, SEE TYP. SECTION C, SHT. D1

EARTHWORK CALCULATIONS BASIN #2 | EARTHWORK CALCULATIONS BASIN #1

Scale: 1"=30'

BASIN #1
FLOW DATE (Q100 = 207 CFS)

SLOW DRAINS:	4-6" Ø PVC PIPES Q = 3.0 cfs
PRIMARY OUTLET:	36" Ø SRP HEADWATER DEPTH (HW) = 7.0' HW/D = 2.33 Q = 90 cfs, V = 12.7 fps
FLOOD SPILLWAY:	ROAD SECTION, S = 2%, n = .025 AT D = 3", Q = 134 cfs, V = 3.1 fps AT D = 4", Q = 216 cfs, V = 3.7 fps SLOPE BELOW ROAD, S = 10%, N = 0.05 AT D = 3", Q = 187 cfs, V = 3.7 fps AT D = 4", Q = 302 cfs, V = 4.6 fpS

Pond/Pit volume : 9.7 Acre-Ft
Area: 1.963 Acres
Elevation Range: 4902 to 4910

Storage Volumes

Elevation	Storage(AcreFt)
4903	0.2
4904	0.9
4905	2.0
4906	3.3
4907	4.6
4908	6.2
4909	7.8
4910	9.7

NOTE:

SEE CROSS SECTIONS, SHEET D1.

Avoid cutting underground utility lines. It's costly.

CALL BEFORE YOU DIG.

1-800-227-2600

UNDERGROUND SERVICE ALERT (USA)

ENGINEERING · PLANNING · RESOURCE MANAGEMENT

RESOURCE CONCEPTS, INC.

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REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

PREMIER CANYON BASIN #1
GRADING PLAN

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6498
6/27/11

JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN :	MLM
CHECKED:	GDM

SHEET 8

GRADE TEMPORARY ACCESS RD. TO SOIL DISPOSAL SITE. UPON COMPLETION OF CONSTRUCTION, RIP ROAD TO 6" MINIMUM DEPTH AND REVEGETATE PER SPECIFICATIONS.

USE EX. ACCESS ROAD THROUGH CCWTP AS DIRECTED BY THE CONST. MANAGER

PROTECT EX. CULVERT DURING USE OF ROAD

GRADE AS NEEDED THROUGH THIS AREA FOR CONST. ACCESS

APPROXIMATE LIMITS OF GRADING

APPROXIMATE FINISH GRADE CONTOUR

A A

5015 5010 5005 5000 4995 4990 4985 4980

BRUSH

ASPH

BUILDING

TANK

N 4736800

N 4736400

FILL, PLACE IN 12"–24" LIFTS DOZER TRACK TO COMPACT

FINISH GRADE RIP TO 6" MIN. DEPTH FOR REVEG. TREATMENT (SEE SPECIFICATIONS)

EX. GROUND

SECTION A-A

NOT TO SCALE

N

Scale: 1"=40'

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CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

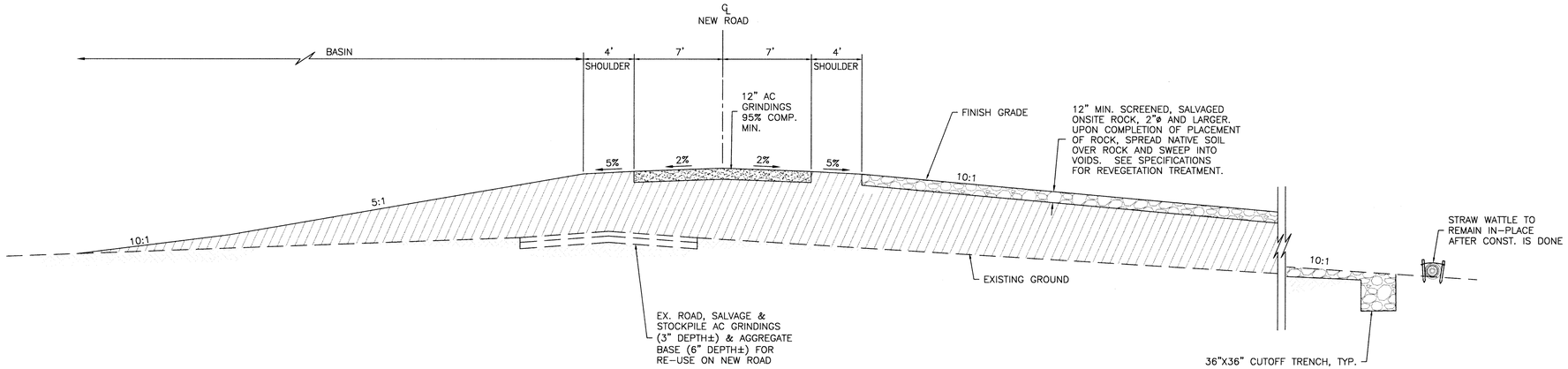
TAYLOR CANYON
SOIL DISPOSAL SITE

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6499

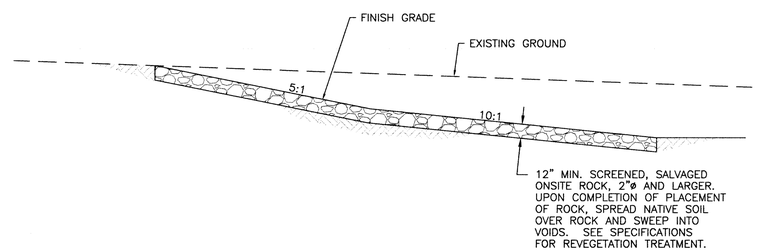
JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET 9



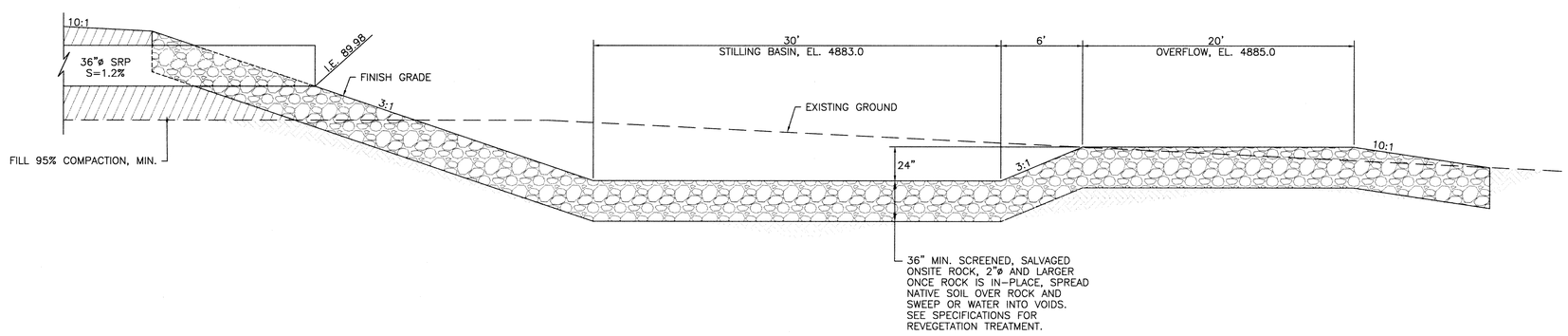
SECTION A-A
(TYPICAL SPILLWAY-BASINS 1 & 2)

NO SCALE



SECTION B-B
(TYPICAL OF ALL ROCK RIPRAP SLOPES)

NO SCALE



SECTION C-C
(TYPICAL BASIN OUTLET - BASINS 1 & 2)

NO SCALE

Avoid cutting underground utility lines. It's costly.

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ZEPHYR COVE, NEVADA 89448
PHONE: 775-588-7500

REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

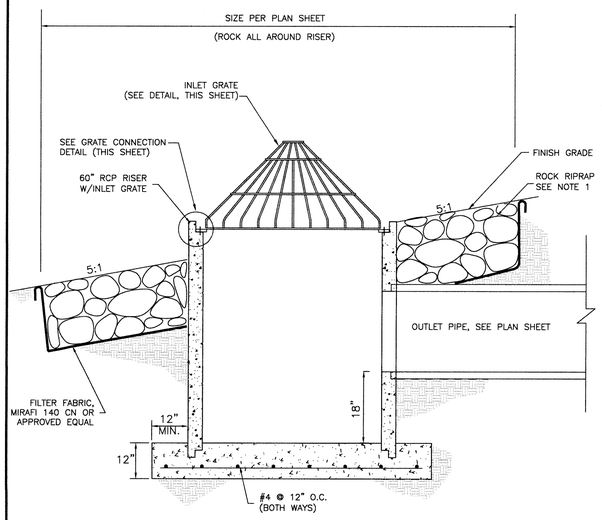
CROSS SECTIONS

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6488
STATE OF NEVADA
6/27/11

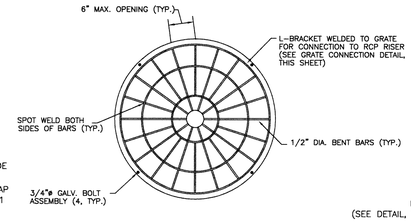
JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET D1

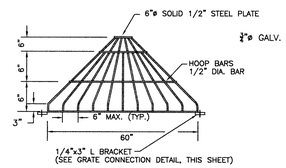


NOTES:
1. ALL RIPRAP SHALL BE ONSITE ROCK SCREENED TO 2"ø AND LARGER.

CROSS SECTION VIEW



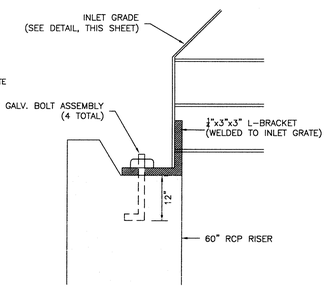
PLAN



ELEVATION

NOTE: AFTER FABRICATION GRATE ASSEMBLY SHALL BE HOT-DIPPED GALVANIZED, OR APPROVED EQUAL.

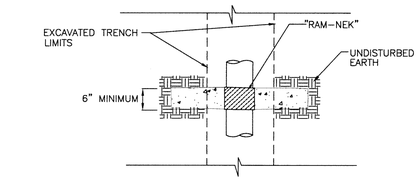
INLET GRATE DETAIL



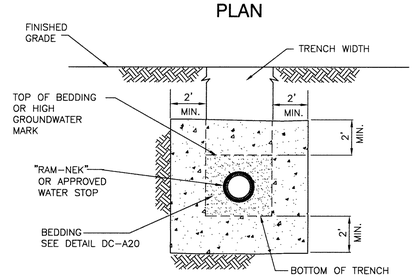
GRATE CONNECTION DETAIL

BASIN PRIMARY OUTLET DETAIL

NO SCALE



PLAN



SECTION

GENERAL NOTES

1. WATER STOPS SHALL BE CONSTRUCTED AT 200' MAXIMUM SPACING IN GROUNDWATER CONDITIONS AND WHERE TYPE "C" BEDDING IS USED, AS DIRECTED BY THE ENGINEERING DIVISION.
2. WRAP PIPE WITH "RAM-NEK" OR EQUIVALENT WHERE PIPE IS EXPOSED TO CONCRETE PRIOR TO POURING.
3. USE LIGHT CONCRETE, TWO SACK SLURRY. IF DRYWALL IS USED FOR CONCRETE FORMS, IT MAY BE LEFT IN PLACE.

WATER STOP DETAIL

NO SCALE

BILL OF MATERIALS

TIMBER				
ITEM	NO. REQ'D	SIZE	LENGTH	FT.BM
WHEEL GUARDS	2	6"x6"	7'-3"	43.5
WING SLOPE	4	2"x6"	8'-0"	32.0
WING SLOPE	2	2"x6"	6'-4 1/2"	12.8
WING BRACES	2	2"x6"	3'-4"	6.7
WING BRACES	4	2"x6"	5'-3"	21.0
WING BRACES	2	2"x6"	7'-3"	14.5
WING BRACES	2	2"x6"	2'-1"	4.2
WING BRACES	2	2"x6"	4'-0"	8.0
WING BRACES	2	2"x6"	5'-0"	10.0
WING POST	2	4"x6"	AS REQUIRED	
NAILING STRIP	2	2"x2"	2'-0"	1.3

GALVANIZED HARDWARE				
ITEM	NO. REQ'D	SIZE	LENGTH	WT. LBS.
BOLTS	8	3/4"	12"	15
WASHERS	8	3/4"		1
WASHERS (LOCK)	4	3/4"		1/4
NAILS	50	40d		3
NAILS	72	20d		2-1/4
BOLTS	4	3/4"	1 1/2"	1
TOTAL				22-3/4

REINFORCING

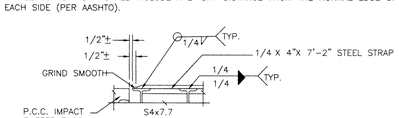
20' ROADBED				
ITEM	NO. REQ'D	SIZE	LENGTH	WT. LBS.
HORIZONTAL BARS	*12	NO. 4	20'-6"	164
HORIZONTAL BARS	17	NO. 4	7'-0"	79
HORIZONTAL BARS	18	NO. 4	24'-9"	297
VERTICAL BARS	30	NO. 4	2'-9"	55
U-BARS	36	NO. 6	12'-1"	654
HORIZONTAL BARS	4	NO. 4	21'-2"	57
TOTAL				1,359

CONCRETE	
20' ROADBED	9.34 CU. YD.

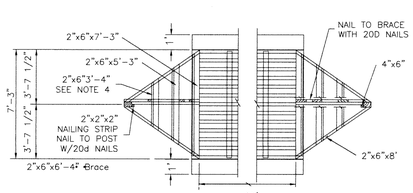
* NO. 4 BARS WELDED TO 8" I BEAMS

GENERAL NOTES:

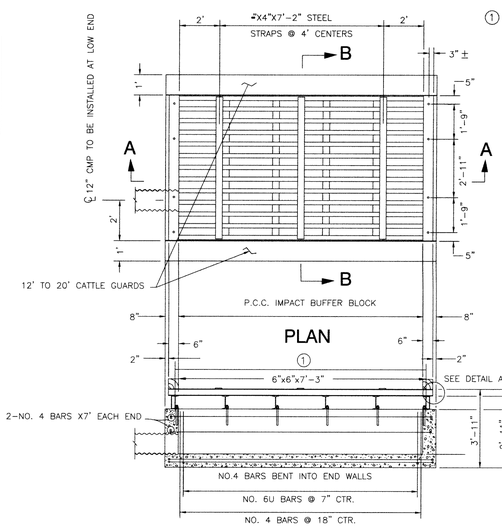
1. ALL CONCRETE TO BE CLASS A OR AA.
2. STANDARD METAL OR TIMBER GATES SHALL BE CONSTRUCTED WHEN SHOWN ON PLANS OR ORDERED BY THE ENGINEER.
3. ALL CONNECTIONS TO BE WELDED.
4. ALL TIMBER SHALL BE PAINTED WHITE PER STANDARD SPECIFICATIONS.
5. METAL WINGS ARE OPTIONAL. SEE DETAIL A, FOR ADDITIONAL DETAILS AND QUANTITIES SEE SHEET R-7.1.3.
6. ALL WINGS SHALL BE PAINTED WHITE PER STANDARD SPECIFICATIONS.
7. CATTLE GUARD WIDTH SHALL INCLUDE A 2' SHY DISTANCE FROM THE NORMAL EDGE OF PAVEMENT, EACH SIDE (PER AASHTO).



DETAIL B



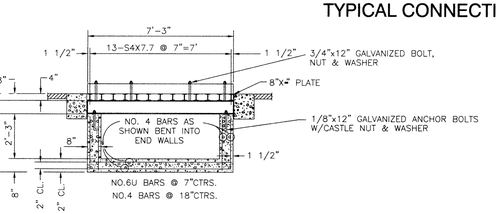
PLAN OF WINGS



PLAN

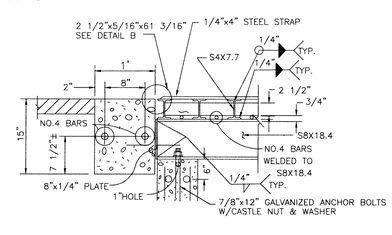
① 6-SBx18.4@2'-6"=6" FOR 12' CATTLE GUARD
7-S8x18.4@2'-5"=14'-6" FOR 14' CATTLE GUARD
8-S8x18.4@2'-4 1/2"=16'-6" FOR 16' CATTLE GUARD
9-S8x18.4@2'-6 1/2"=20'-6" FOR 20' CATTLE GUARD

SECTION A-A

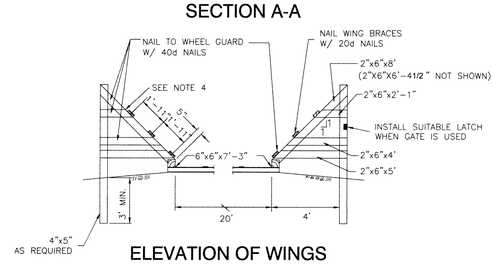


(TOP FOOT REMOVED FOR CLARITY)

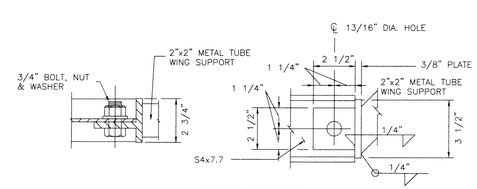
SECTION B-B



TYPICAL CONNECTION



ELEVATION OF WINGS



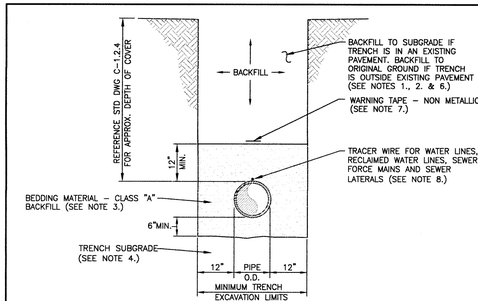
ELEVATION
* DETAIL A

* FOR USE WITH OPTIONAL METAL WINGS ONLY. THIS CONNECTION SHALL BE MADE TO SECOND S4x7.7 BEAM AT 8.33" FROM IMPACT BUFFER BLOCKS.

CATTLE GUARD - NDOT DETAIL R-2.5.1 MODIFIED

NO SCALE

(REFERENCE DETAIL ONLY FOR RECONSTRUCTION OF THE SALVAGED CATTLE GUARD)



TYPICAL TRENCH SECTION
NTS

NOTES:

1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
2. BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF CLASS E BACKFILL AS SPECIFIED IN SUBSECTION 200.03.06 OF THE SSPWC. MATERIAL SHALL BE PLACED IN LIFT THICKNESS SPECIFIED IN SUBSECTION 305.10 OF THE SSPWC AND DENSIFIED TO 90% RELATIVE COMPACTION.
3. BEDDING SHALL CONFORM TO THE REQUIREMENTS OF CLASS A BACKFILL AS SPECIFIED IN SUBSECTION 200.03.02 OF THE SSPWC. MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
4. PLANS SHALL INCLUDE A DETAIL FOR SUBGRADE STABILIZATION INCLUDING BACKFILL MATERIAL, STRUCTURAL GEOTEXTILE FILTER FABRIC AND MODIFIED CUTOFF COLLARS WHEN POTENTIAL FOR UNSTABLE SUBGRADES EXIST, SUBJECT TO THE APPROVAL OF THE CARSON CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
5. FOR TRENCHES IN ROADWAY SECTION, SEE PAVEMENT PATCH DETAIL (DWG. No. C-5.1.6).
6. FOR THE PURPOSE OF PAYMENT; EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
7. PLACE NON METALLIC WARNING TAPE 1 FOOT ABOVE ALL BURIED PIPES AND CONDUITS.
8. TRACER WIRE SHALL BE 12 GAUGE (MINIMUM THICKNESS) INSULATED SOLID COPPER OR COPPER-CLAD STEEL CORE WIRE. INSULATION SHALL BE 30 MIL HDPE. PLANS SHALL SPECIFY WIRE STRENGTH AND INSULATION THICKNESS FOR BORING APPLICATIONS. SPLICES SHALL BE CONNECTED BY WIRE NUTS, SEALED WITH AQUA SEAL OR SILICON FILLED, AND DOUBLE WRAPPED WITH U/L LISTED ELECTRICAL TAPE. TRACER WIRE COLOR SHALL BE, BLUE FOR WATER, PURPLE FOR RECLAIMED WATER, AND GREEN FOR SEWER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY
			TRENCH EXCAVATION AND BACKFILL	DRAWING NO. C-1.2.1 (305)
APPROVED BY:		7/09		DATE 7/2009

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RESOURCE CONCEPTS, INC.
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212 ELKS POINT ROAD, STE. 443
P.O. BOX 11796
ZEPHYR COVE, NEVADA 89448
PHONE: 775-588-7500

REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

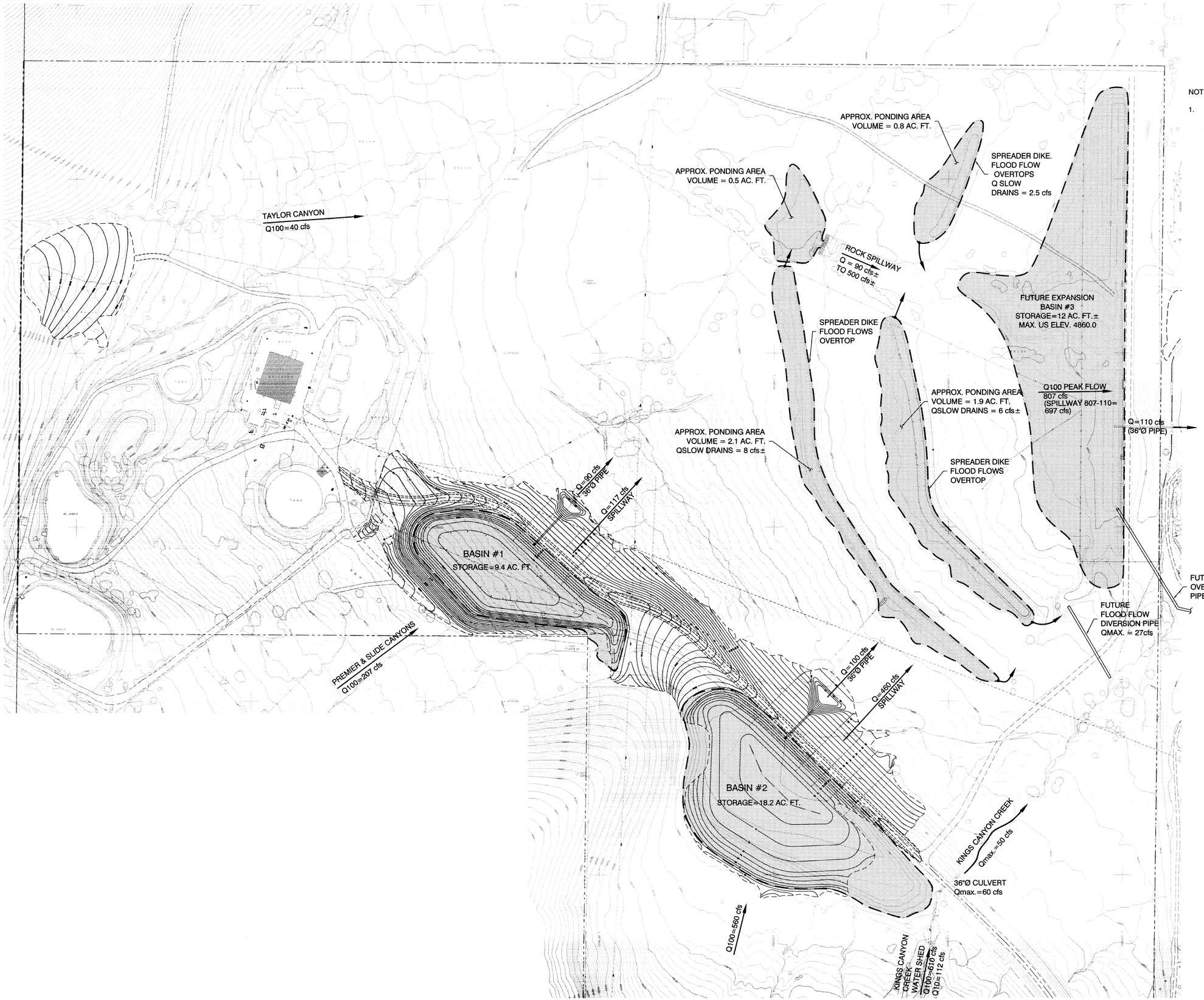
SPECIAL DETAILS

FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6459
STATE OF NEVADA

JOB NO.: 06-225-12
DATE: 3-28-11
DESIGNED: GDM
DRAWN: MLM
CHECKED: GDM

SHEET D2



NOTES:

1. 100 YEAR FLOW VALUES BASED ON PAST STUDIES AND ADJUSTED FOR RUNOFF AREAS.

SCALE: 1"=100'

Avoid cutting underground utility lines. It's costly.

CALL BEFORE YOU DIG.

1-800-227-2600

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REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

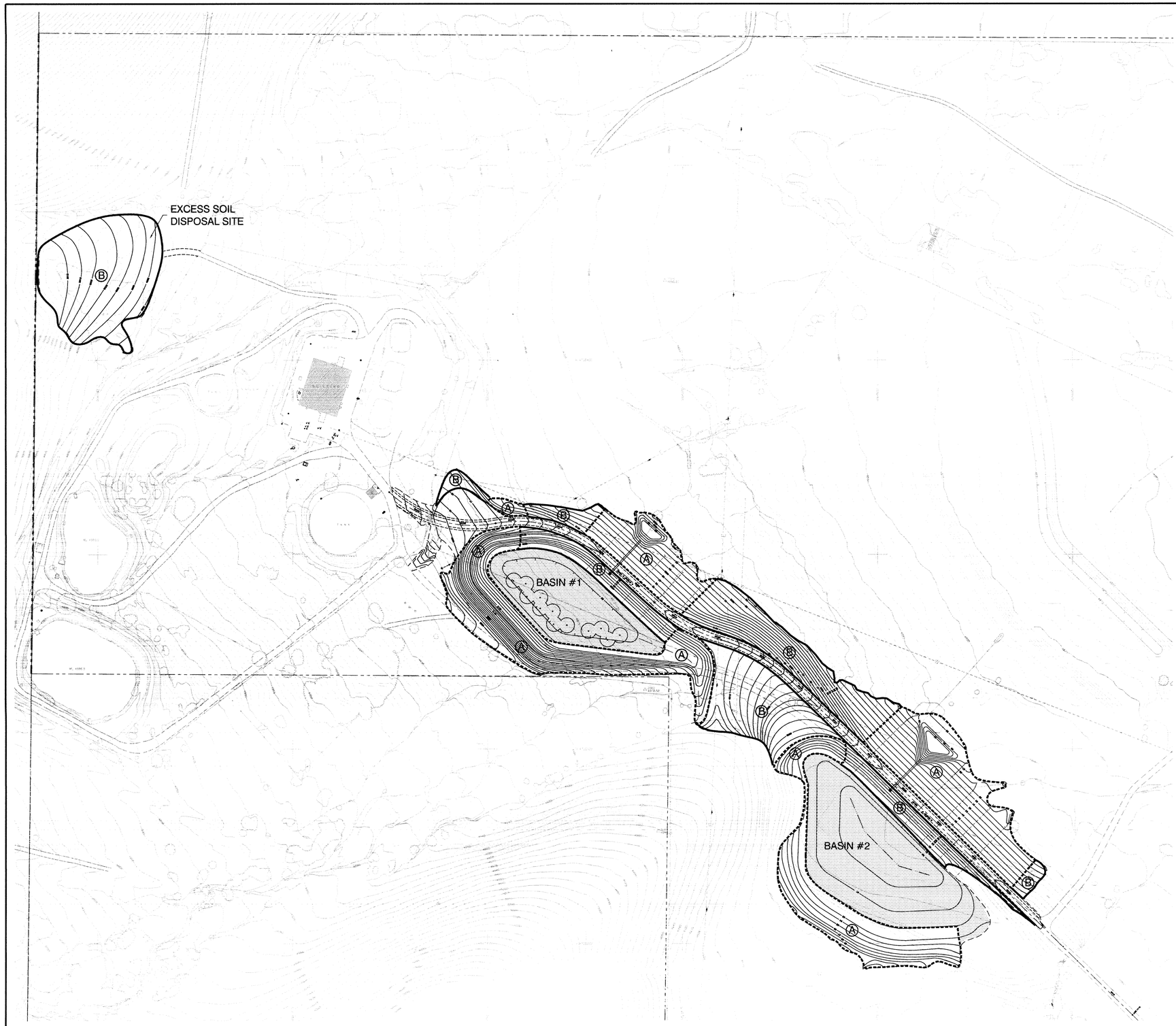
HYDROLOGY MASTER PLAN

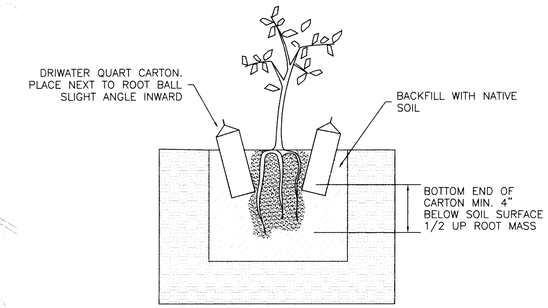
FOR BIDDING ONLY

REGISTERED PROFESSIONAL ENGINEER
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 6489
STATE OF NEVADA

JOB NO.:	06-225-12
DATE:	3-28-11
DESIGNED:	GDM
DRAWN:	MLM
CHECKED:	GDM

SHEET H1





NOTES:

1. SOIL SHOULD BE WATERED AT TIME OF INITIAL DRIWATER APPLICATION.
2. CUT ALONG LINE ON BOTTOM OF QUART TO EXPOSE GEL.

COTTONWOOD PLANTING DETAIL

TYPICAL INSTALLATION - DRIWATER QUART CARTON (2 CARTONS PER PLANT)

NOT TO SCALE

Ⓐ TREATMENT 'A' - ROCK SLOPES

Ⓑ TREATMENT 'B' - OTHER SLOPES

TREATMENT 'C' - BASINS

COTTONWOOD / CHOKE CHERRY PLANTINGS

N

SCALE: 1"=100'

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REVISION	DATE

CARSON CITY
WATERFALL FIRE WATERSHED IMPROVEMENTS
PHASE 3

REVEGETATION PLAN

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REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
GEORGE D. MAHE
EXP. 12-31-11
CIVIL
No. 5489

JOB NO.: 06-225-12
DATE: 3-28-11
DESIGNED: GDM
DRAWN: MLM
CHECKED: GDM

SHEET R1