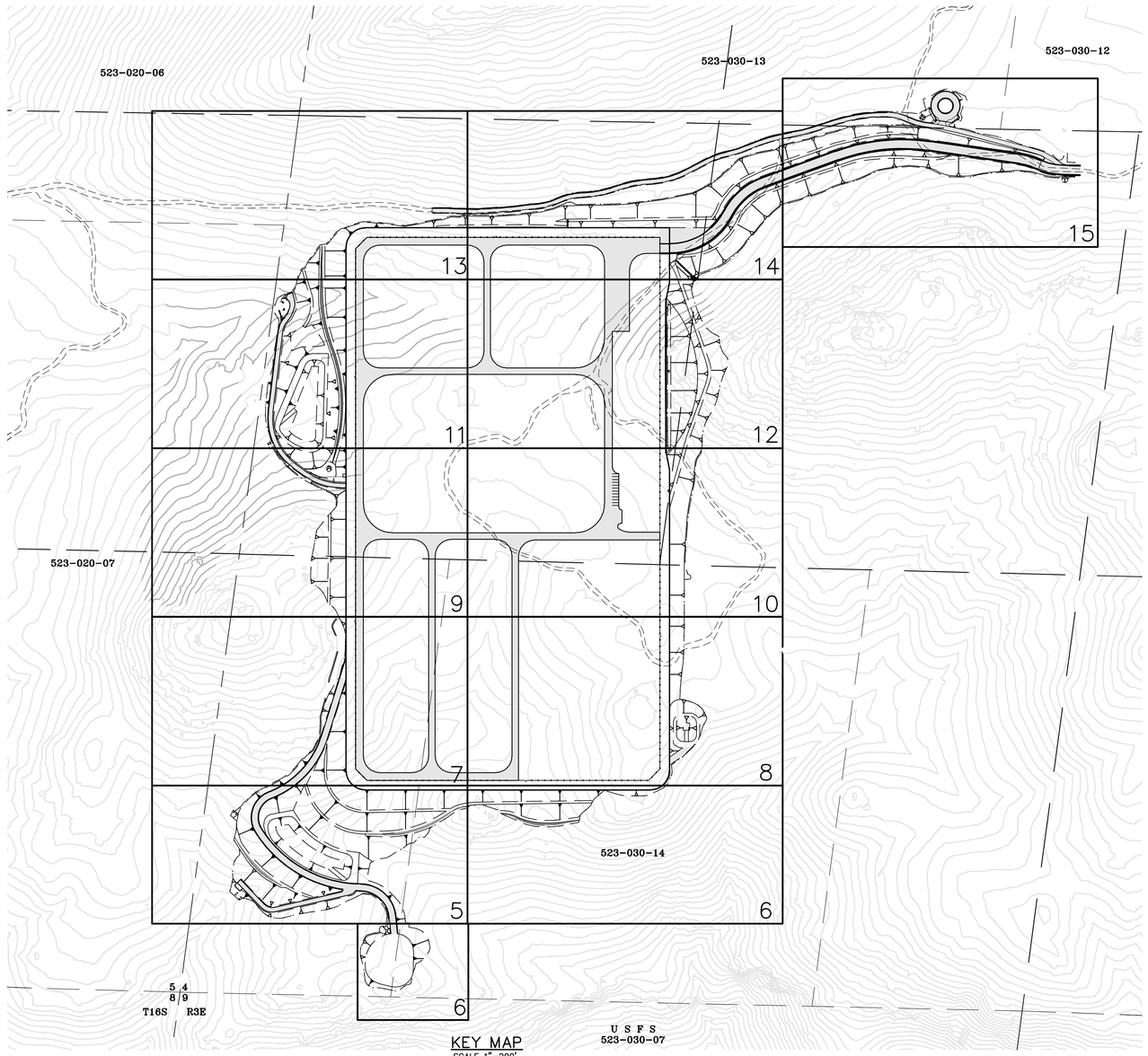



KEY MAP
SCALE 1"=200'

## WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE WORK TO BE DONE ACCORDING TO THESE PLANS, SDG&E SPECIFICATIONS, THE GREEN BOOK STANDARD SPECIFICATIONS AND THE SAN DIEGO REGIONAL STANDARD DRAWINGS.

## STANDARD DRAWINGS

1. SAN DIEGO REGIONAL STANDARD DRAWINGS, DOCUMENT NO. AEC1231062, FILED DECEMBER 31, 2006.
2. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS, DATED MAY 2006.
3. WATER AGENCY STANDARDS (SDWAS). SEPTEMBER 28, 2009.

## STANDARD SPECIFICATIONS

1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) INCLUDING THE 2006 REGIONAL AND 2006 CITY OF SAN DIEGO SUPPLEMENTAL AMENDMENTS DOC. AEC1231062, FILED DECEMBER 31, 2006.
2. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DOCUMENT NO. AEC0925062, FILED SEPTEMBER 25, 2006.
3. WATER AGENCY STANDARD SPECIFICATIONS (SDWAS), SEPTEMBER 28, 2009

## CONTRACTOR'S NOTE

UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

## EARTHWORK QUANTITIES

CUT
FILL

NOTE: QUANTITIES NOT ADJUSTED FOR BULK OR SHRINK. TOTALS DO NOT INCLUDE REMEDIAL EARTHWORK, OVEREXCAVATION OR IMPORT SOILS FROM SUBSTATION ACCESS ROAD.EARTHWORK VOLUMES SHOWN HEREON ARE APPROXIMATE. ACTUAL VOLUMES ARE DEPENDENT UPON ACTUAL PERCENT OF BULK AND SHRINKING, QUANTITY OF REMEDIAL EXCAVATION, QUANTITY OF OVEREXCAVATION AND EXISTING SURFACE TOPOGRAPHY. EARTHWORK SHALL BE QUANTIFIED IN THE FIELD DURING GRADING OPERATIONS.

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| APPROX | APPROXIMATE | MSE | MECHANICALLY STABILIZED EARTH |
| AC | ASPHALT CONCRETE | OC | ON CENTER |
| BW | BOTTOM OF WALL | OD | OUTSIDE DIAMETER |
| CB | CATCH BASIN | OH | OVERHEAD |
| CONC | CONCRETE | POB | POINT OF BEGINNING |
| CL | CENTER LINE | PVC | POLY-VINYL-CHLORIDE |
| DIA | DIAMETER | PVT | PRIVATE |
| D.I. | DUCTILE IRON | PCC | PORTLAND CEMENT CONCRETE |
| DG | DECOMPOSED GRANITE | R/W | RIGHT-OF-WAY |
| EP | EDGE OF PAVEMENT | RC | RELATIVE COMPACTION |
| EX | EXISTING | RIM | RIM ELEVATION |
| FF | FINISH FLOOR | RT | RIGHT |
| IE | INVERT ELEVATION | RCP | REINFORCED CONCRETE PIPE |
| ID | INSIDE DIAMETER | RSD | SAN DIEGO REGIONAL STANDARD DRAWINGS |
| FS | FINISH SURFACE | S | SLOPE |
| FG | FINISH GRADE | SCH | SCHEDULE |
| FH | FIRE HYDRANT | SD | STORM DRAIN |
| FL | FLOW LINE | SDRSD | SAN DIEGO REGIONAL STANDARD DRAWINGS |
| FLG. | FLANGED | SDWAS | SAN DIEGO WATER AGENCIES STANDARDS |
| GB | GRADE BREAK | SF | SQUARE FEET |
| HDPE | HIGH DENSITY POLYETHYLENE | STA | STATION |
| HP | HIGH POINT | TC | TOP OF CURB |
| LAT | LATERAL | TF | TOP OF FOOTING |
| LF | LINEAR FEET | TG | TOP OF GRATE |
| LOC | LOCATION | TOP | TOP OF PIPE |
| LT | LEFT | TOS | TOP OF SLOPE |
| MAX | MAXIMUM | TW | TOP OF WALL |
| MIN | MINIMUM | TYP | TYPICAL |
| MH | MANHOLE | W/ | WITH |
| MH | MANHOLE | WAS | WATER AGENCIES STANDARDS |

## GRADING SPECIFICATIONS

1. ALL GRADING SHALL BE DONE UNDER THE OBSERVATION OF A QUALIFIED GEOTECHNICAL ENGINEER AND ENGINEERING GEOLOGIST AND IN ACCORDANCE WITH THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT ENTITLED "GEOTECHNICAL INVESTIGATION REPORT, SUNCREST SUBSTATION SDG&E 500KV SUNRISE POWERLINK PROJECT". LOCATED IN THE COUNTY OF SAN DIEGO, CALIFORNIA, DATED JUNE 8, 2009, PREPARED BY URS CORPORATION (PROJECT # 27669017.00002), AND UPDATE REPORT AND CHANGE OF GEOTECHNICAL ENGINEER OF RECORD, PREPARED BY GEOCON INC, (PROJECT # G1164.32.01) DATED_____. ALL FILL MATERIAL SHALL BE ACCORDING TO THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND SUBMITTED TO THE SDG&E PROJECT ENGINEER PRIOR TO THE ACCEPTANCE OF WORK.
2. AT THE COMPLETION OF THE GRADING OPERATIONS, AN AS-GRADED SOILS AND GEOLOGICAL REPORT SHALL BE PREPARED AND DELIVERED TO THE SDG&E PROJECT ENGINEER.
3. THESE GRADING PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN CONFORMANCE WITH THE RECOMMENDATIONS OUTLINED IN THE REFERENCED GEOTECHNICAL REPORTS PREPARED FOR THIS PROJECT.

C.E.G. NO. 1860 DATE

DAVID B. EVANS No. 1860 CERTIFIED ENGINEERING GEOLOGIST — REGISTERED GEOLOGIST — STATE OF CALIFORNIA

G.E. NO. 2401 DATE
EXPIRES: 9-30-10

JOSEPH J. VETTEL No. 2401 EXP. 9/30/10 GEOTECHNICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

## TOPOGRAPHY

SOURCE OF TOPOGRAPHY IS: FINLEY ENGINEERING CO., INC., DBA G. E. RALEIGH AND ASSOCIATES, 1800 NW 169TH PLACE SUITE B250, BEAVERTON, OR 97006. AERIAL PHOTOGRAMMETRY BY: DAVID C. SMITH AND ASSOCIATES, INC., 1734 S.E. TACOMA STREET, PORTLAND, OREGON 97202. AERIAL PHOTOGRAPHY DATED AUGUST, 2007, JULY, 2008, AND SEPT, 2008.

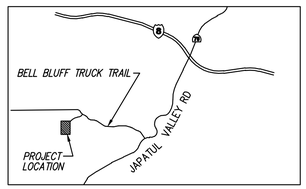
DIGALERT
DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

## LEGEND

| SYMBOL | LEGEND | STD. |
|---|---|---|
| 120 | EXISTING CONTOUR | |
| 117 | FINISH CONTOUR | |
| | CUT SLOPE | |
| | FILL SLOPE | B 40 |
| | LIMITS OF GRADING | |
| C F C F | CUT/FILL LINE | |
| | FLOW LINE | |
| | GRADE BREAK | |
| | PCC DRAINAGE DITCH | RSD D75 TYPE B |
| | STORM DRAIN | |
| | CONCRETE BACKFILL | RSD G-33 |
| W | WATER MAIN | WAS WP-2 |
| | CUT-OFF WALL | RSD SP-07 4 46 |
| | RIP-RAP DISSIPATOR | RSD D-40 SDD-100 |
| | STRAIGHT HEADWALL | RSD D-30 |
| | WING HEADWALL | RSD D-34 |
| | CONCRETE ENERGY DISSIPATOR | RSD D-41 |
| | CANYON SUBDRAIN | J 40 |
| | MODIFIED TYPE A CLEAN OUT-TYPE F INLET TOP | J 41 |
| | MODIFIED TYPE A CLEAN OUT-GRATE LID | RSD D-9 |
| | TYPE A CLEAN OUT | RSD D-9 |
| | TYPE B-1 CURB INLET | RSD D-2 |
| | TYPE F CATCH BASIN | RSD D-7 |
| | TYPE G CATCH BASIN | RSD D-8 |
| | PAVEMENT SUBDRAIN | A 41 |
| | CONTECH CDS 3030 DV PRECAST WATER QUALITY SYSTEM | A 44 D 44 |
| | CONTECH CDS 2015 DV PRECAST WATER QUALITY SYSTEM | E 40 |
| | 6" A.C. BERM TYPE A | RSD G-5 |
| | AC PAVING | D 40 |
| | MSE WALL/SOIL NAIL WALL | |
| x x x | CHAIN LINK FENCE | |
| | SURVEY MONUMENT (FND) | |
| | SURVEY MONUMENT (RECORD) | |
| | SETTLEMENT MONUMENT | C 41 |
| PROFILE F.3 STRUCTURE NUMBER A-4 CO STRUCTURE TYPE | STORM DRAIN CALLOUT | |
| 345.35 FS | SPOT ELEVATION | |
| DETAIL LETTER SHEET NUMBER | DETAIL CALLOUT | |
| T | FIRE HYDRANT | WAS WF-3, WAS WF-4 |
| | BLOWOFF ASSEMBLY | WAS WB-1 |
| | AUTOMATIC COMBINATION AIR RELEASE AND AIR/VACUUM VALVE | WAS WA-2, WAS WA-6 |
| | GATE VALVE | RSD WV-1 |

## BENCHMARK/BASIS OF BEARING

THE BASIS OF COORDINATES OF THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE 6, NAD 83 (1992). THE COORDINATES ARE DISPLAYED IN U.S. SURVEY FEET, AS DETERMINED LOCALLY BY THE LINE BETWEEN GPS 32 AND CA 1102, I.E. NORTH 41°29'59 WEST AS SHOWN ON SDCO ROS 14310. THE BENCHMARK USED IS SAN DIEGO COUNTY BENCHMARK WHICH IS A 3 INCH BRASS DISK MARKED USGS H133 SET IN A GRANITE ROAD LEDGE NORTHERLY OF BELL BLUFF TRUCK TRAIL, AND WESTERLY OF JAPATUL VALLEY ROAD. THE ELEVATION OF THE BENCHMARK IS 3152.01 FEET (NAVD 88 DATUM).




VICINITY MAP
NTS

## DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.
I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY SAN DIEGO GAS AND ELECTRIC COMPANY IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS DESIGNER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

R.C.E. NO. 63344 DATE
EXPIRES: 06-30-10

REGISTERED PROFESSIONAL ENGINEER — RICHARD WILLIAM MILLER No. 63344 EXP. 6-30-10 CIVIL — STATE OF CALIFORNIA

## LIST OF DRAWINGS



NOLTE BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

TITLE SHEET, KEY MAP, GENERAL NOTES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/30/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 1 OF 66 | | | SCR-C-001 |
| CAD NO.: GP01 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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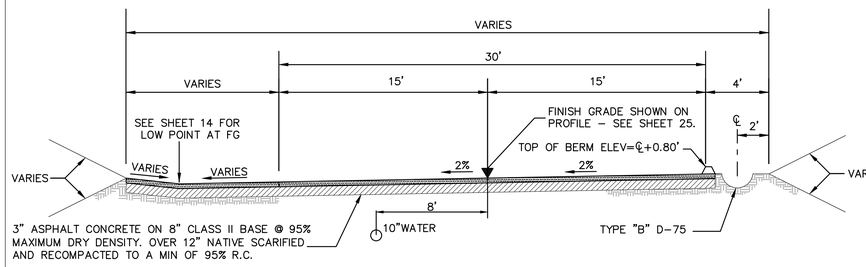
XREFS:

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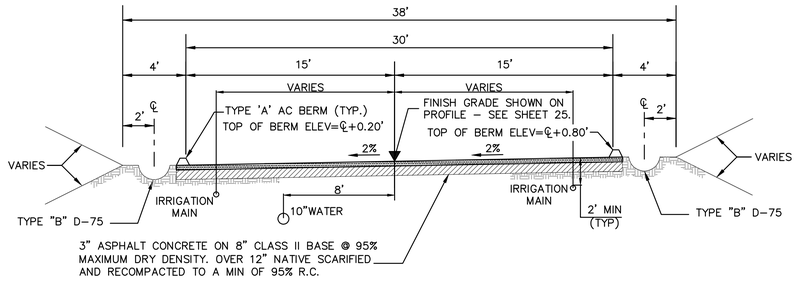
## STA. 10+00.00 – 11+84.00
NO SCALE

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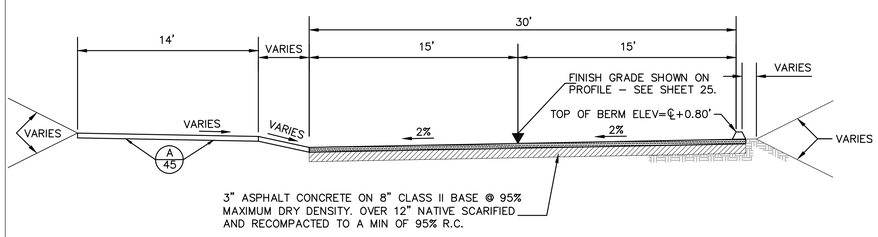


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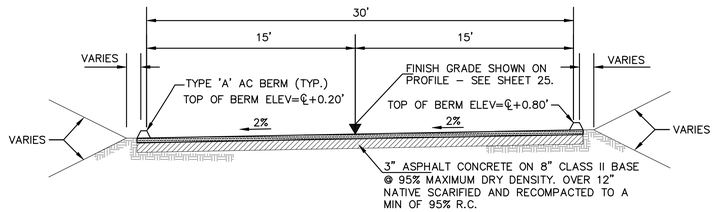


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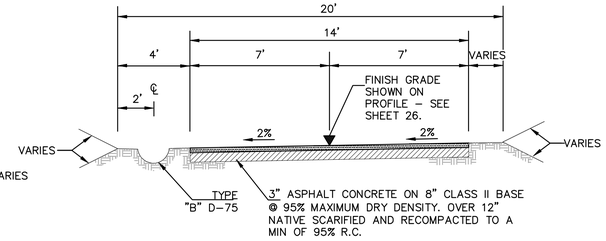


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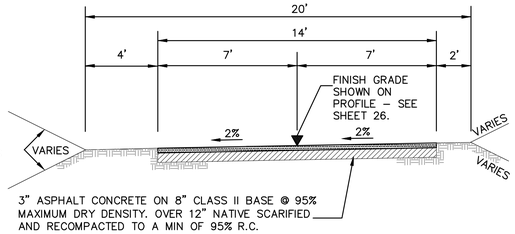
## STA. 10+00.00 – 14+25.00
NO SCALE

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## STA. 14+25.00 – 17+52.77
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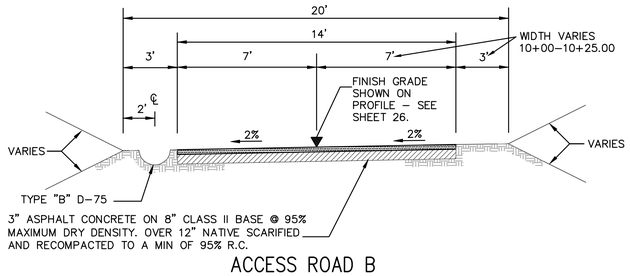


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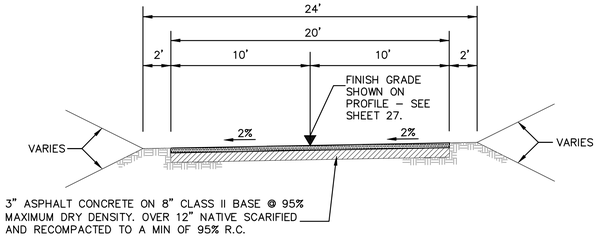
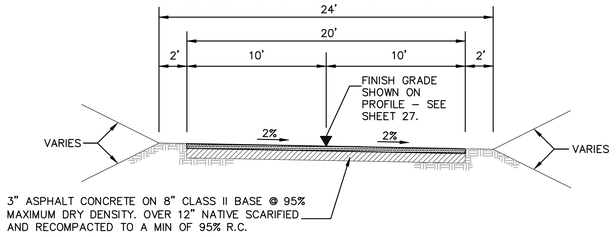



## ACCESS ROAD C TO DETENTION BASIN 2
## STA. 10+00.00 – 19+37.19
NO SCALE

## PROVIDE 40' SUPERELEVATION TRANSITION STA. 19+37.19 – 19+77.19




## ACCESS ROAD C
## STA. 19+77.19 – 21+91.89
NO SCALE

## WATER NOTES

1. WATER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS AND MATERIALS AS SPECIFIED HEREIN AND WITHIN THE MOST RECENT EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK), AND ALL SUPPLEMENTS. CONTRACTOR SHALL HAVE A COPY OF THE STANDARD SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.
2. CONTRACTOR SHALL COORDINATE WITH OWNER ALL ARRANGEMENTS FOR HIGH–LINING TEMPORARY SERVICES PRIOR TO SHUTDOWNS.
3. CONTRACTOR SHALL REVIEW ALL PROPOSED TRENCH WORK WITH CAL/OSHA. A COPY OF EXEMPTION LETTER OR TRENCHING PERMIT, IF REQUIRED, SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL PER THE SPECIFICATIONS, THE APPROPRIATE BURIED UTILITY WARNING, AND IDENTIFICATION TAPE ABOVE ALL WATER LINES, INCLUDING WATER LATERALS.
5. AUTOMATIC AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS AND BLOW–OFFS AT ALL LOW POINTS IN THE WATER MAIN PROFILE.
6. FILL AREAS MUST BE COMPACTED TO MINIMUM 90% (PERCENT) RELATIVE COMPACTION PRIOR TO PIPE INSTALLATION.
7. PIPELINES SHALL BE CONSTRUCTED WITH A MINIMUM 3.0 FOOT COVER, AND AS SHOWN IN THE DRAWINGS.
8. CONTRACTOR SHALL REMOVE ANY ABANDONED PIPE IN CONFLICT WITH THE PROPOSED PIPELINE OR WITHIN PIPE TRENCH WIDTH. ALL SECTIONS OF ABANDONED PIPE SHALL BE SEALED BY EITHER WELDING A CAP OR POURING A CONCRETE PLUG ON EACH END OF THE PIPE.(SEE REVISED NOTE)
9. CONTRACTOR SHALL LOCATE THE EXISTING PIPELINES AND CONFIRM THE CONNECTION LOCATIONS PRIOR TO ORDERING THE MATERIALS. THE CONTRACTOR SHALL CUT AND REPLACE ANY DAMAGED PIPE WITH NEW PIPE AT ALL CONNECTION LOCATIONS.
10. THE WATER SYSTEM SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE PROCEDURES IN THE SPECIFICATIONS.
11. PIPELINES AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO TIE–IN OR CONNECTION TO EXISTING SYSTEM FACILITIES. BACTERIOLOGIC QUALITY TEST RESULTS SHALL CONFORM TO THE CRITERIA SPECIFIED IN THAT SPECIFICATION.
12. CONTRACT RECORD DRAWINGS MUST BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF WORK. THE PLANS MUST PROVIDE POST CONSTRUCTION VERIFICATION OF THE LOCATION AND ELEVATION OF PIPES AND APPURTENANCES.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

## CONTRACTOR NOTES

THE FOLLOWING NOTES ARE PROVIDED TO GIVE DIRECTION TO THE CONTRACTOR BY THE ENGINEER OF WORK.

1. NEITHER THE OWNER, NOR THE ENGINEER OF WORK WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE, SPREAD, MOISTURE CONDITIONED AND COMPACT ALL FILL IN STRICT ACCORDANCE WITH SDG&E'S SPECIFICATIONS. A GEOTECHNICAL ENGINEER SHALL BE THE OWNER'S REPRESENTATIVE TO OBSERVE THE CONSTRUCTION OF FILLS. THE EXCAVATION AND THE PLACEMENT OF FILL SHALL BE UNDER THE DIRECT OBSERVATION OF THE GEOTECHNICAL ENGINEER, AND HE SHALL GIVE WRITTEN NOTICE OF CONFORMANCE WITH THE SPECIFICATIONS UPON COMPLETION OF GRADING. DEVIATIONS FROM SDG&E'S SPECIFICATIONS WILL BE PERMITTED ONLY UPON WRITTEN AUTHORIZATION FROM THE GEOTECHNICAL ENGINEER.
3. OBSERVATIONS AND COMPACTION TESTS SHALL BE MADE BY THE GEOTECHNICAL ENGINEER DURING THE FILLING AND COMPACTING OPERATIONS SO THAT HE CAN STATE HIS OPINION THAT THE FILL WAS CONSTRUCTED IN ACCORDANCE WITH SDG&E'S SPECIFICATIONS.
4. DURING CONSTRUCTION: THE CONTRACTOR SHALL GRADE ALL EXCAVATED SURFACES TO PROVIDE POSITIVE DRAINAGE AND PREVENT PONDING OF WATER. THE CONTRACTOR SHALL CONTROL SURFACE WATER TO AVOID DAMAGE TO ADJOINING PROPERTIES OR TO FINISH WORK ON THE SITE. THE CONTRACTOR SHALL TAKE REMEDIAL MEASURES TO PREVENT EROSION OF FRESHLY GRADED AREAS, AND UNTIL SUCH TIME AS PERMANENT DRAINAGE AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
5. AFTER GRADING IS COMPLETED AND THE GEOTECHNICAL ENGINEER HAS FINISHED HIS OBSERVATIONS OF THE WORK, NO FURTHER EXCAVATION OR FILLING SHALL BE DONE EXCEPT UNDER THE OBSERVATIONS OF THE GEOTECHNICAL ENGINEER.
6. CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS REQUIRED TO PROTECT ADJACENT PROPERTIES DURING THE GRADING OPERATIONS.
7. CUT SLOPES SHALL BE SERRATED AND LEFT ROUGH. FILL SLOPES SHALL BE OVERBUILT BY AT LEAST 3 FEET AND CUT BACK TO DESIRED SLOPE. FILL SLOPES SHALL BE TRACK WALKED AT LEAST TWICE OR MORE AS NEEDED TO ACHIEVE SATISFACTORY COMPACTION OF THE SLOPE FACE.
8. WHERE TRENCHES ARE WITHIN EASEMENTS, STREETS, OR 10 FEET OF ANY BUILDING, SOILS REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF WORK BY A QUALIFIED GEOTECHNICAL ENGINEER WHICH INDICATE THAT TRENCH BACKFILL WAS COMPACTED UNDER THE OBSERVATION AND TESTING OF THE GEOTECHNICAL ENGINEER AND IN ACCORDANCE WITH THE ABOVE NAMED SPECIFICATIONS.
9. BEFORE EXCAVATING FOR THIS CONTRACT, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES WITH THE APPROPRIATE UTILITY COMPANY.
10. CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.
11. CONTRACTOR SHALL NOTIFY THE RESPECTIVE UTILITY COMPANIES PRIOR TO STARTING WORK NEAR COMPANY FACILITIES AND SHALL COORDINATE HIS WORK WITH COMPANY REPRESENTATIVES. BEFORE EXCAVATING, VERIFY LOCATION OF EXISTING ELECTRICAL, GAS, TELEPHONE, CATV AND ALL OTHER UTILITIES. CONTACT UNDERGROUND SERVICE ALERT AT (800) 422–4133.
12. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED FROM A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING UTILITIES EXCEPT AS SOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHERS NOT ON RECORD OR NOT SHOWN ON THESE PLANS. ALL DAMAGES THERETO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND STANDARDS AT THE EXPENSE OF THE CONTRACTOR.
13. FILL AND CUT SLOPES ARE 2:1 HORIZONTAL TO VERTICAL UNLESS OTHERWISE NOTED.
14. ALL ON SITE IMPROVEMENTS ARE PRIVATE. ALL TREES, BRUSH, GRASS, AND OTHER OBJECTIONABLE MATERIAL TO BE REMOVED, SHALL BE COLLECTED AND DISPOSED OF BY THE CONTRACTOR OFF THE SITE SO AS TO LEAVE THE AREAS THAT HAVE BEEN CLEARED WITH A NEAT AND FINISHED APPEARANCE AND FREE FROM UNSIGHTLY DEBRIS.
15. THE ELEVATIONS SHOWN ON THE PLANS REPRESENT THE FINISH SURFACE ELEVATIONS OF ROADS, PAVEMENTS, FLOOR SLABS ON–GRADE, AND LANDSCAPED AREAS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE ALLOWANCES FOR THE THICKNESS OF PAVING MATERIALS, CONCRETE SLABS, AND TOPSOIL.
16. GRADING SHALL BE DONE WITHIN A TOLERANCE OF (+/–)0.1' OF THE GRADES AND ELEVATIONS SHOWN ON THESE PLANS AND ALL SLOPES SHALL BE CONSTRUCTED WITHIN 0.5'(+/–) OF THE LOCATION SHOWN ON THESE PLANS. IN NO WAY SHALL THE ABOVE TOLERANCES RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING A FINISH THAT WILL NOT POND WATER.
17. ANY QUANTITIES INDICATED ON THESE PLANS ARE ENGINEERS' ESTIMATES ONLY AND ARE NOT TO BE USED BY CONTRACTOR FOR BIDDING PURPOSES.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.
19. GRADING AT FLOWLINES SHALL BE PERFORMED SUCH THAT A MINIMUM 0.7% SLOPE TO DRAIN IS CONSTRUCTED, AND SUCH THAT THE FLOW LINE ELEVATION AT ANY POINT IS WITHIN 0.1' OF DESIGN ELEVATION AS INTERPOLATED BETWEEN HIGH AND LOW POINTS SHOWN ON PLAN.

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

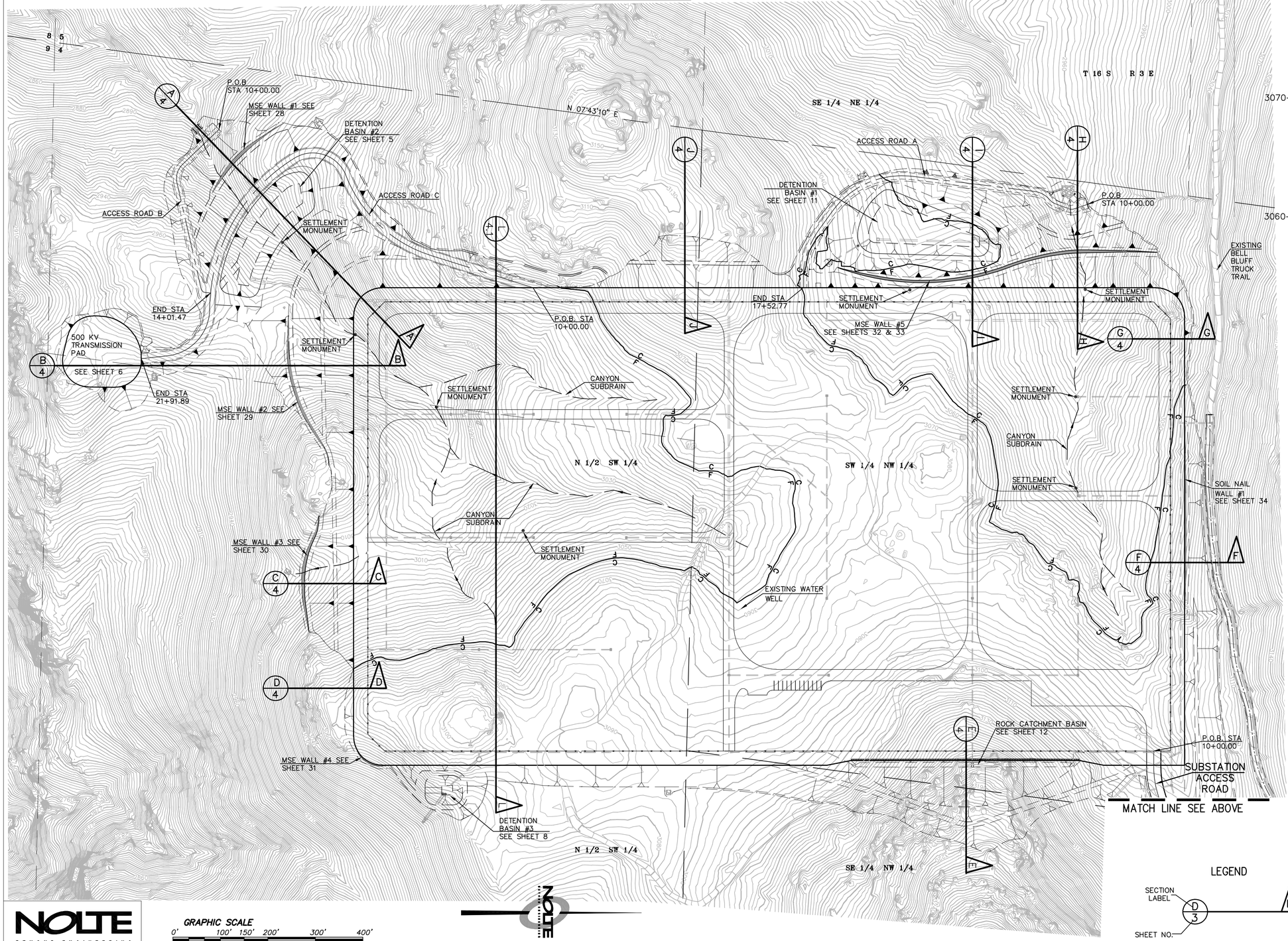
NOTES & TYPICAL ROAD SECTIONS

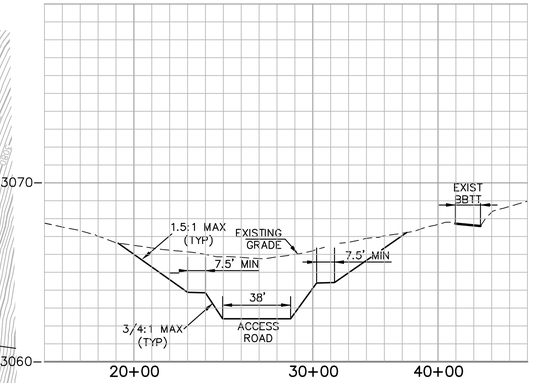
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 2 OF 66 | SCR–C–002 | |
| CAD NO.: | GP02 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP02
XREFS:

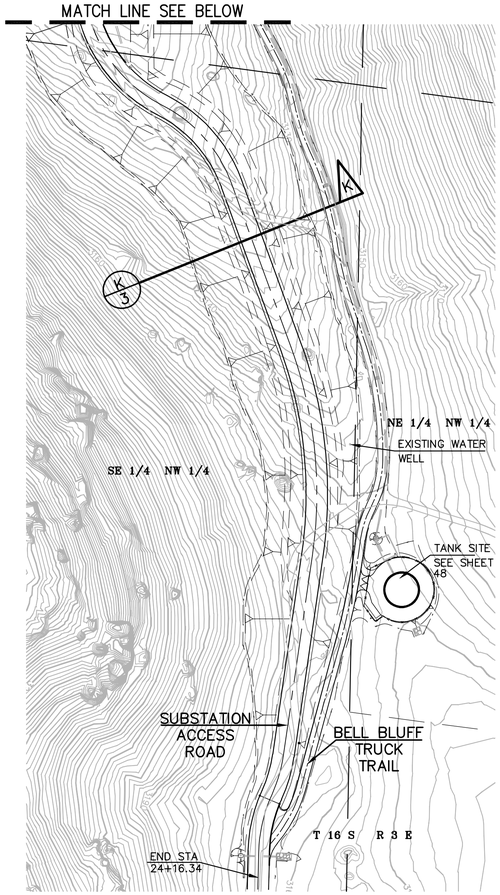
# SITE PLAN




## SECTION K–K

HORIZONTAL SCALE 1"=40'
VERTICAL SCALE 1"=40'




LEGEND

SECTION LABEL — D/3 — SHEET NO.

NOLTE BEYOND ENGINEERING

GRAPHIC SCALE
0' 100' 150' 200' 300' 400'
SCALE: 1"= 100'

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

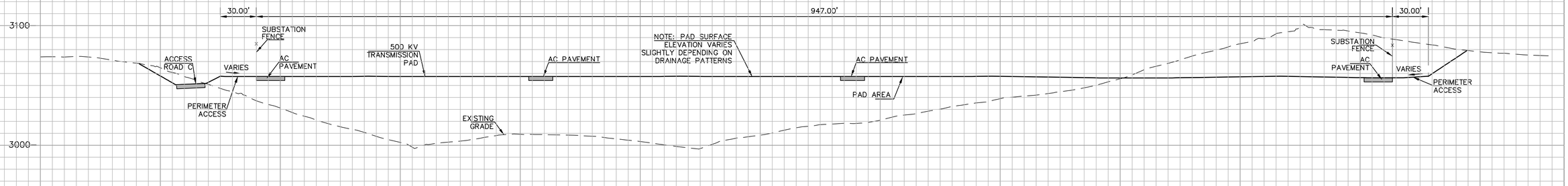
SUNCREST SUBSTATION

GENERAL SITE PLAN

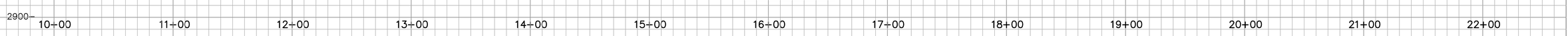
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/20/09 | SCALE: 1"=100' | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 3 OF 66 | | | SCR–C–003 | |
| CAD NO.: | GP03 | PLOT SCALE: | 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBD3960O\CADD\USFS\CIVIL\GP\GP03




## SECTION L–L




NOLTE
BEYOND ENGINEERING

SCALE
HORIZ: 1"= 40'
VERT: 1"= 40'

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

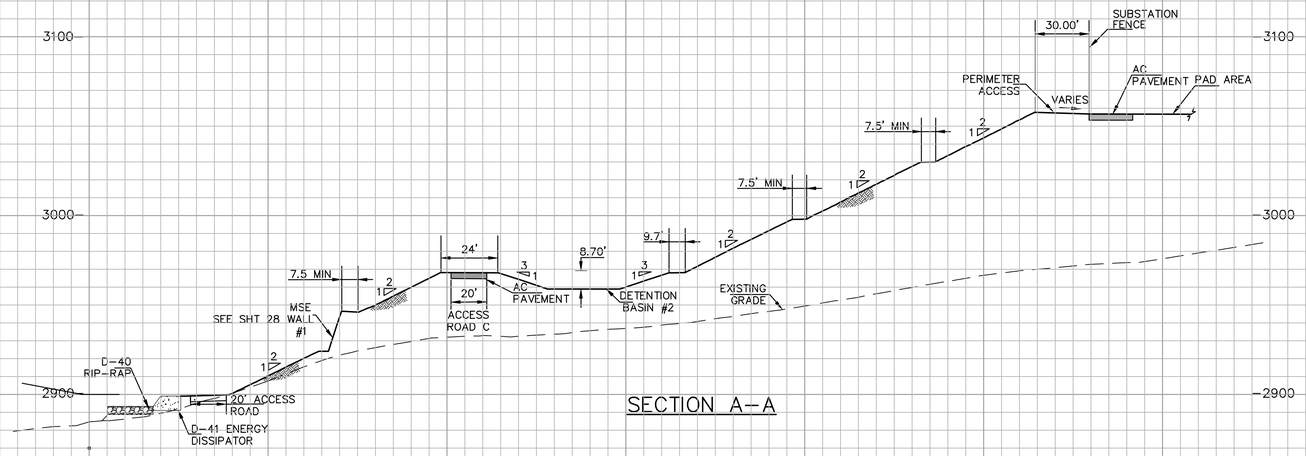
SITE PLAN SECTION

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | ML | DATE: 11/20/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 4.1 OF 66 | | |
| CAD NO.: | GP04–1 | PLOT SCALE: | 1=1 | | |

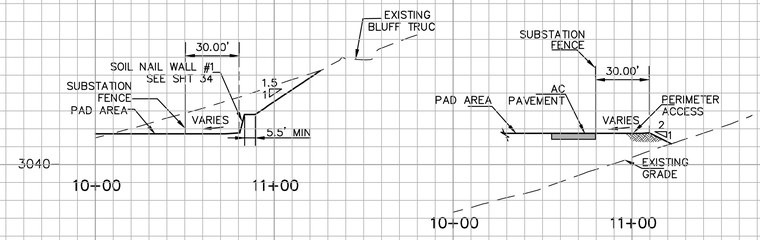
SCR–C–004.1

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBD39600\CADD\USFS\CIVIL\GP\GP04-1
XREFS:



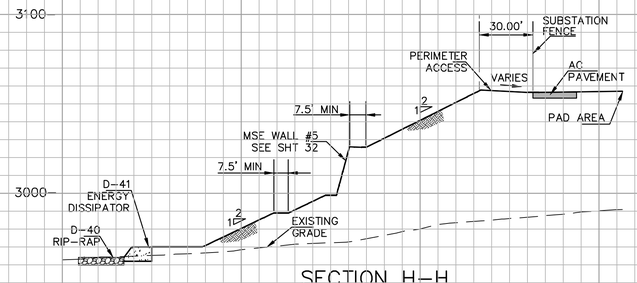

SECTION A–A



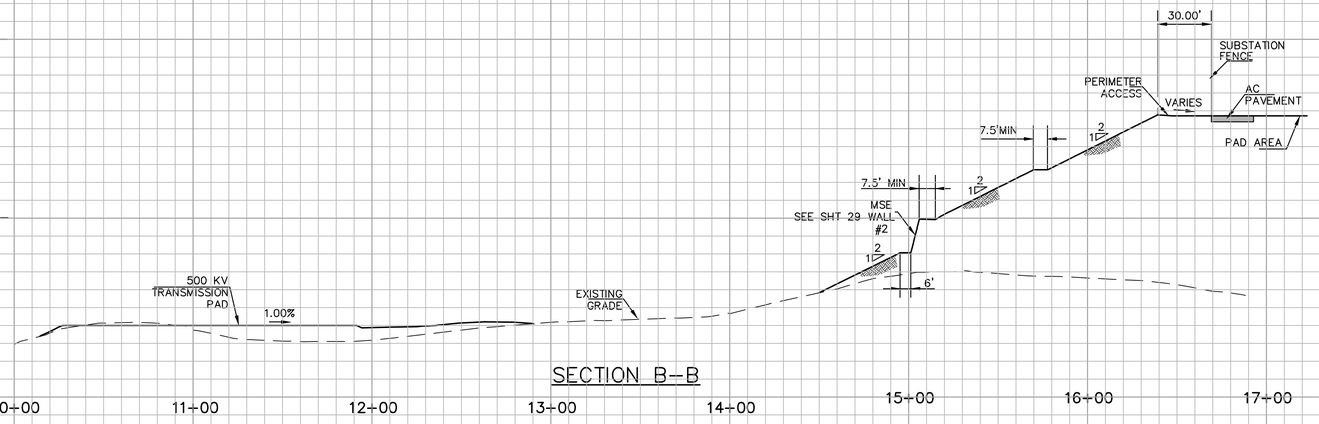

SECTION F–F



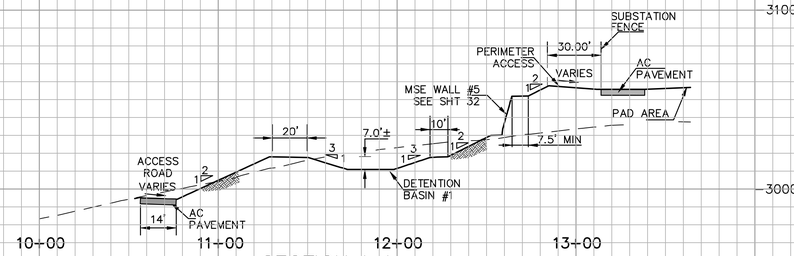

SECTION G–G



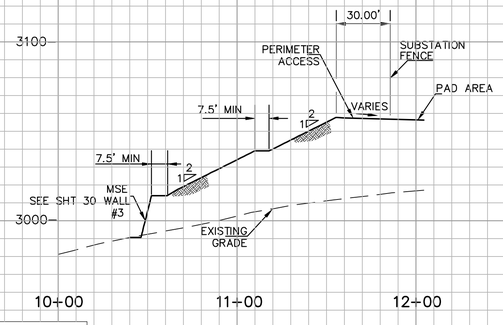

SECTION H–H



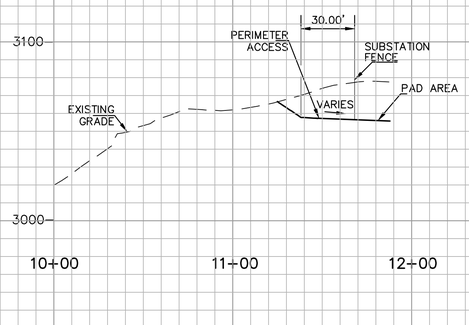

SECTION B–B



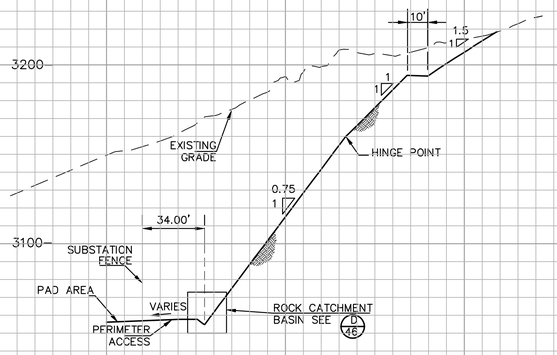

SECTION I–I



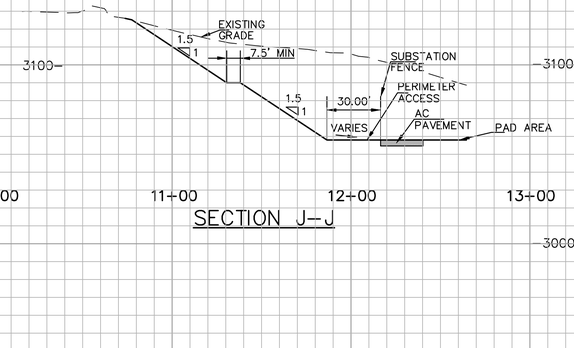

SECTION C–C




SECTION D–D




SECTION E–E




SECTION J–J

SCALE
HORIZ: 1" = 40'
VERT: 1" = 40'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

SITE PLAN SECTIONS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/19/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 4 OF 66 | | | SCR-C-004 |
| CAD NO.: GP04 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

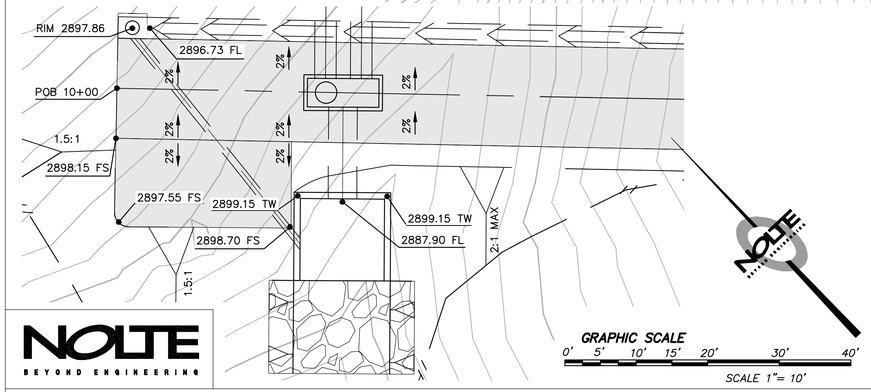
N:\SDB039600\CADD\USPS\CIVIL\GP\GP04
XREFS:

SEE SHEET 7

MATCH LINE SEE SHEET 6

× POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 603 | 1873221.6849 | 6428084.9600 | SD CL |
| 610 | 1873122.9833 | 6427781.7315 | SD CL |
| 700 | 1873439.9051 | 6428415.8111 | TOP SLOPE |
| 701 | 1873439.9051 | 6428165.6700 | TOP SLOPE |
| 702 | 1873450.3812 | 6428129.8067 | TOP SLOPE |
| 704 | 1873374.5282 | 6428415.8111 | TOP SLOPE |
| 705 | 1873369.3171 | 6428165.6700 | TOP SLOPE |
| 706 | 1873393.8644 | 6428087.1781 | TOP SLOPE |
| 708 | 1873302.8457 | 6428165.6700 | TOP SLOPE |
| 709 | 1873341.4836 | 6428047.6692 | TOP SLOPE |
| 711 | 1873240.6596 | 6428107.5569 | TOP SLOPE |
| 712 | 1873279.3330 | 6428016.0640 | TOP SLOPE |
| 713 | 1873349.0233 | 6427945.3251 | TOP SLOPE |
| 714 | 1873218.0808 | 6428100.3112 | TOE SLOPE |
| 715 | 1873258.2770 | 6428001.9979 | TOE SLOPE |
| 716 | 1873332.4475 | 6427925.7945 | TOE SLOPE |
| 717 | 1873192.1974 | 6428095.6443 | TOE SLOPE |
| 718 | 1873223.7815 | 6427983.6477 | TOE SLOPE |
| 719 | 1873301.5604 | 6427892.6311 | TOE SLOPE |
| 720 | 1873158.1519 | 6428092.2365 | TOP SLOPE |
| 721 | 1873201.6651 | 6427970.8773 | TOP SLOPE |
| 722 | 1873285.2088 | 6427872.7541 | TOP SLOPE |
| 723 | 1873200.7033 | 6428121.2601 | TOP SLOPE |
| 724 | 1873354.1848 | 6427898.7864 | TOP SLOPE |
| 725 | 1873329.1604 | 6427903.2032 | TOE SLOPE |
| 726 | 1873205.1391 | 6428097.9778 | TOE SLOPE |




ROAD B CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| B1 | N43°52'31"W | ... | 107.07' | ... |
| B2 | 58°56'53" | 40.00' | 41.15' | ... |
| B3 | N77°10'36"E | ... | 229.68' | ... |
| B4 | 71°31'57" | 10.00' | 12.48' | ... |
| B5 | N5°38'40"E | ... | 11.09' | ... |

ROAD C CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| C2 | 51°19'01" | 285.00' | 255.26' | ... |
| C3 | 100°53'16" | 75.00' | 132.06' | ... |
| C4 | 56°23'13" | 379.00' | 372.99' | ... |
| C5 | N88°29'59"W | | 5.96' | ... |
| C6 | 83°52'45" | 100.00' | 146.40' | ... |
| C7 | N06°00'00"W | ... | 54.92' | ... |

STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD108 | N10°57'32"E | ... | 29.68' | 48" RCP |
| SD111 | N10°57'32"E | ... | 207.41' | 42" HDPE |
| SD112 | N45°22'49"E | ... | 199.60' | 36" HDPE |
| SD113 | N45°22'49"E | ... | 199.60' | 36" HDPE |
| SD124 | N45°22'49"E | ... | 12.82' | 48" RCP |
| SD125 | N06°15'53"E | ... | 37.48' | 12" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

GRAPHIC SCALE
0' 10' 20' 30' 41' 60' 90' 120'
SCALE: 1"= 30'

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

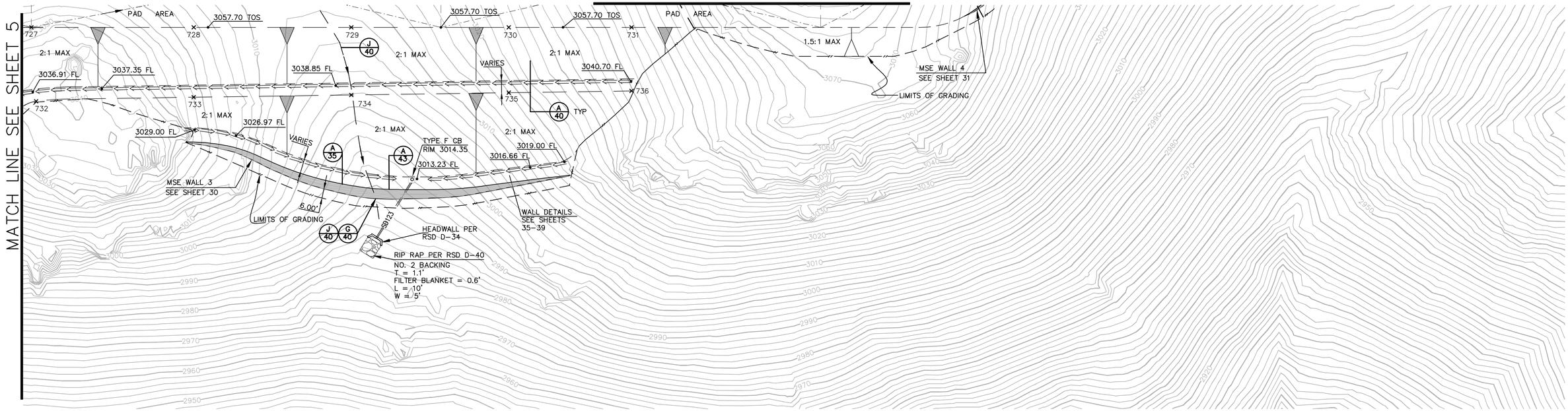
SUNCREST SUBSTATION

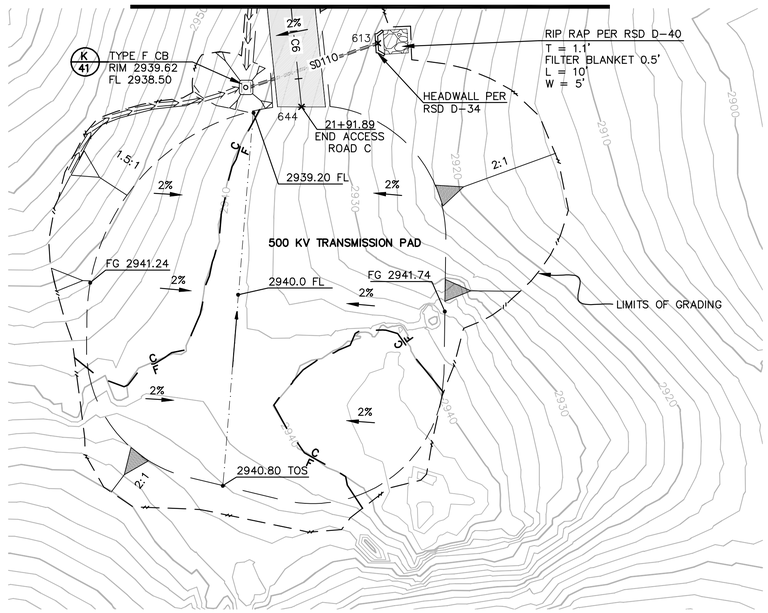
GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 5 OF 66 | | SCR–C–005 |
| CAD NO.: | GP05 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD80396\CADD\USFS\CIVIL\GP\GP05
Xrefs:




## ROAD C CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| C7 | N06°00'00"W | ... | 54.92' | ... |

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD110 | N71°03'48"E | ... | 57.12' | 12" HDPE |
| SD123 | N31°59'33"E | ... | 42.39' | 12" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 613 | 1873019.2047 | 6428285.4673 | SD CL |
| 644 | 1872992.4902 | 6428253.3592 | CL RD C |
| 727 | 1873439.9051 | 6428486.6798 | TOP SLOPE |
| 728 | 1873439.9051 | 6428589.7512 | TOP SLOPE |
| 729 | 1873439.9051 | 6428689.7512 | TOP SLOPE |
| 730 | 1873439.9051 | 6428789.7512 | TOP SLOPE |
| 731 | 1873439.9051 | 6428867.6638 | TOP SLOPE |
| 732 | 1873392.9376 | 6428489.7063 | TOP SLOPE |
| 733 | 1873395.4720 | 6428589.6962 | TOP SLOPE |
| 734 | 1873396.9098 | 6428689.7512 | TOP SLOPE |
| 735 | 1873398.3468 | 6428789.7512 | TOP SLOPE |
| 736 | 1873399.4664 | 6428867.6638 | TOP SLOPE |

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/24/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 6 OF 66 | | |
| CAD NO.: | GP06 | PLOT SCALE: | 1=1 | | |

SCR-C-006

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB03960\CADD\USFS\CIVIL\GP\GP06
XREFS:

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 500 | 1873469.9051 | 6428133.6798 | CORNER |
| 524 | 1873543.9051 | 6428207.6798 | RADIAL |
| 527 | 1873543.9051 | 6428310.6798 | RADIAL |
| 528 | 1873543.8364 | 6428430.6522 | RADIAL |
| 632 | 1873818.1186 | 6428103.6798 | CL RD C |
| 703 | 1873497.9286 | 6428103.7123 | TOP SLOPE |
| 707 | 1873497.9286 | 6428035.3217 | TOP SLOPE |
| 710 | 1873453.3258 | 6427975.5501 | TOP SLOPE |

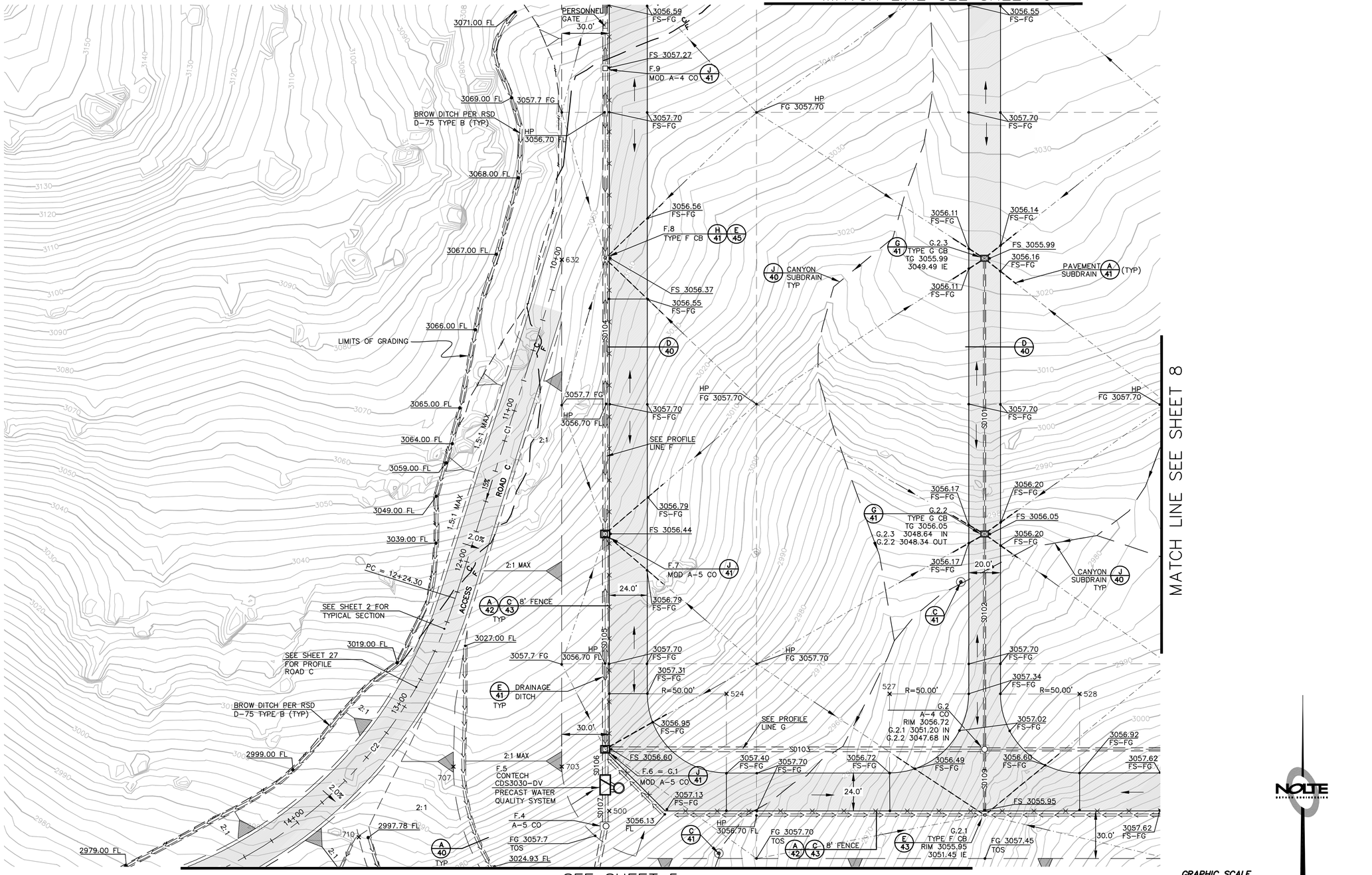
## ROAD C CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| C1 | N17°27'29"E | ... | 224.30' | ... |
| C2 | 51°19'01" | 285.00' | 255.26' | ... |

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD101 | N00°00'00"W | ... | 171.07' | 18" HDPE |
| SD102 | N00°00'00"W | ... | 132.51' | 18" HDPE |
| SD103 | N90°00'00"W | ... | 235.00' | 36" HDPE |
| SD104 | N00°00'00"W | ... | 290.15' | 36" HDPE |
| SD105 | N00°00'00"W | ... | 132.01' | 42" HDPE |
| SD106 | N00°00'00"W | ... | 14.50' | 42" HDPE |
| SD107 | N00°00'00"W | ... | 18.03' | 42" HDPE |
| SD109 | N00°00'00"W | ..... | 38.00' | 18" HDPE |
| SD111 | N10°57'32"E | ... | 207.41 | 42" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.




GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

GRADING PLAN

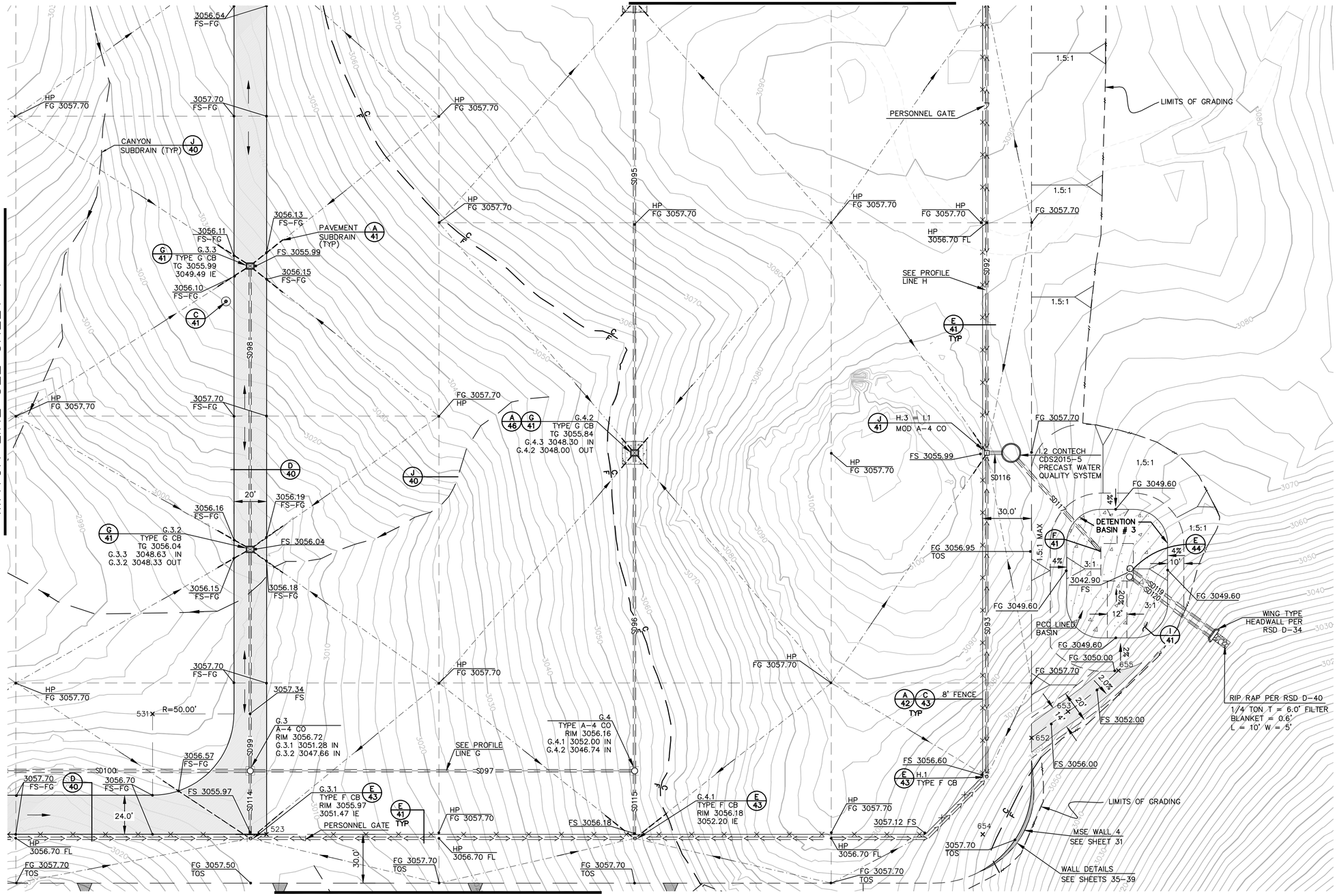
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/24/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 7 OF 66 | | SCR-C-007 |
| CAD NO.: | GP07 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG396\00\CAD\USFS\CIVIL\GP\GP07
XREFS:

MATCH LINE SEE SHEET 10

MATCH LINE SEE SHEET 7




× POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 523 | 1873469.9051 | 6428640.6798 | CORNER |
| 531 | 1873543.9051 | 6428570.6798 | RADIAL |
| 652 | 1873529.1711 | 6429110.6798 | DWY CL |
| 653 | 1873545.3232 | 6429133.1151 | DWY CL |
| 654 | 1873469.9051 | 6429080.6798 | CORNER |
| 655 | 1873570.5126 | 6429164.0468 | DWY CL |

STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD92 | N00°00'00"W | ... | 274.48' | 18" HDPE |
| SD93 | N00°00'00"W | ... | 195.46' | 18" HDPE |
| SD95 | N00°00'00"E | ... | 274.71' | 18" HDPE |
| SD96 | N00°00'00"E | ... | 191.89' | 18" HDPE |
| SD97 | N90°00'00"W | ... | 232.14' | 18" HDPE |
| SD98 | N00°00'00"W | ... | 171.11' | 18" HDPE |
| SD99 | N00°00'00"W | ... | 132.62' | 18" HDPE |
| SD100 | N90°00'00"W | ... | 256.00' | 24" HDPE |
| SD114 | N00°00'00"W | ... | 38.00' | 18" HDPE |
| SD115 | N00°00'00"E | ... | 38.00' | 18" HDPE |
| SD116 | N90°00'00"W | ... | 7.53' | 24" HDPE |
| SD117 | S42°20'40"E | ... | 76.43' | 24" HDPE |
| SD119 | N53°22'18"W | ... | 62.75' | 18" HDPE |
| SD120 | N53°22'18"W | ... | 59.82' | 18" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

NOLTE BEYOND ENGINEERING

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 8 OF 66 | | SCR-C-008 |
| CAD NO.: | GP08 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG39600\CADD\USFS\CIVIL\GP\GP08
XREFS:

## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W16 | N00°00'00"W | ... | 333.58' | 8" PVC DR 18 C900 |
| W17 | N45°00'00"W | ... | 100.00' | 8" PVC DR 18 C900 |
| W18 | N90°00'00"W | ... | 814.00' | 8" PVC DR 18 C900 |
| W25 | N90°00'00"E | ... | 83.29' | 4" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.

## ROAD A CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| A7 | 61°00'00" | 181.00' | 192.70' | ... |
| A8 | N54°00'00"W | ... | 45.88' | ... |
| A9 | 36°00'00" | 181.00' | 113.73' | ... |
| A10 | N90°00'00"W | ... | 17.60' | ... |

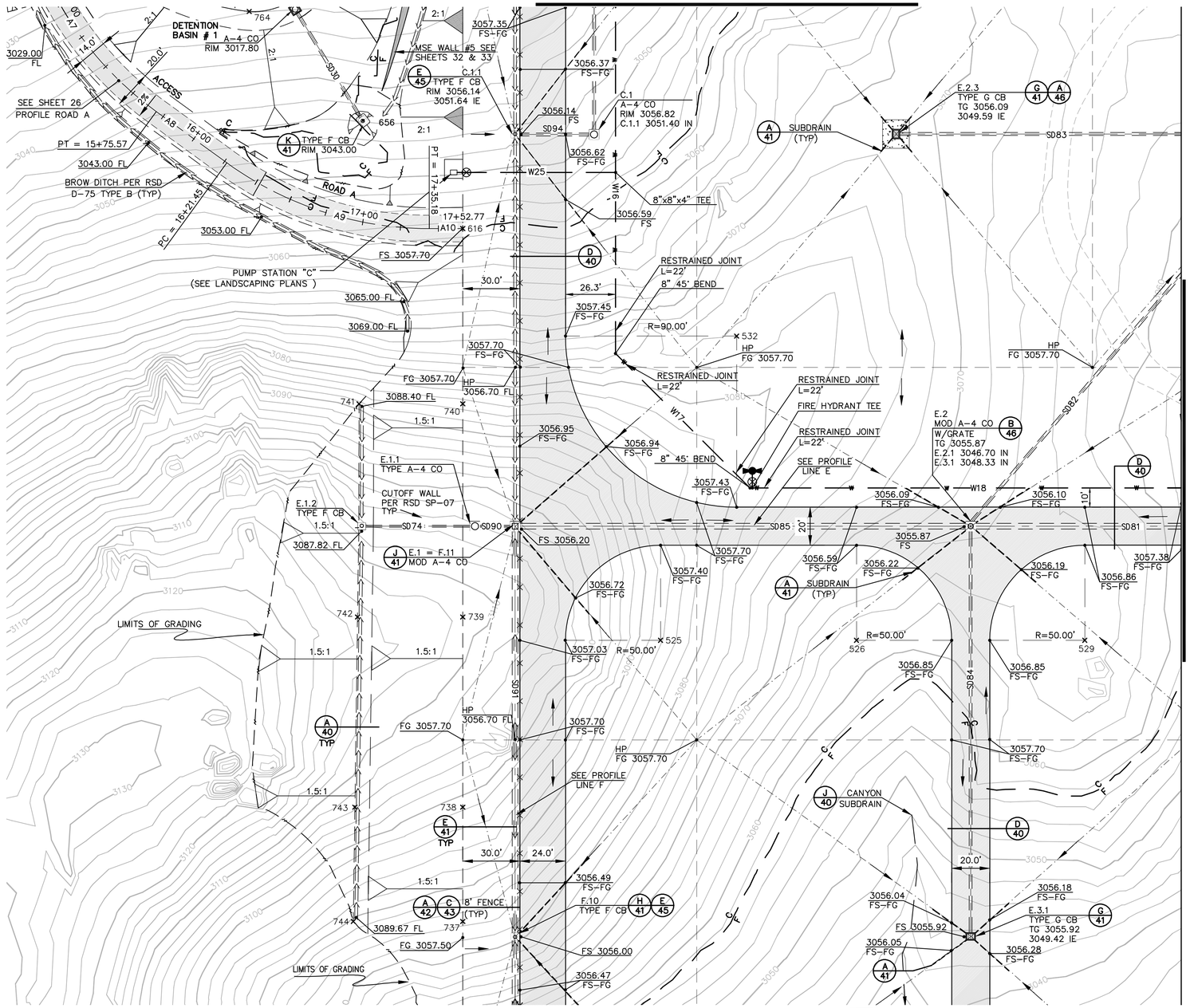
## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD74 | N90°00'00"E | ... | 56.06' | 12" HDPE |
| SD30 | N31°12'08"W | ... | 65.09' | 18" HDPE |
| SD81 | N90°00'00"W | ... | 256.00' | 36" HDPE |
| SD82 | N40°20'31"E | ... | 265.35' | 18" HDPE |
| SD83 | N90°00'00"W | ... | 207.60' | 18" HDPE |
| SD84 | N00°00'00"W | ... | 212.19' | 18" HDPE |
| SD85 | N90°00'00"E | ... | 235.50' | 36" HDPE |
| SD90 | N90°00'00"E | ... | 17.08' | 12" HDPE |
| SD91 | N00°00'00"W | ... | 287.85' | 36" HDPE |
| SD94 | N90°00'00"E | ... | 38.00' | 18" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 525 | 1874170.9051 | 6428207.6798 | RADIAL |
| 526 | 1874170.9051 | 6428310.6798 | RADIAL |
| 529 | 1874170.9051 | 6428430.6787 | RADIAL |
| 532 | 1874330.9051 | 6428247.6798 | RADIAL |
| 616 | 1874387.4334 | 6428103.6798 | CL RD A |
| 737 | 1874023.0547 | 6428103.6798 | TOE SLOPE |
| 738 | 1874083.1773 | 6428103.6798 | TOE SLOPE |
| 739 | 1874183.1773 | 6428103.6798 | TOE SLOPE |
| 740 | 1874295.3102 | 6428103.6798 | TOE SLOPE |
| 741 | 1874295.3102 | 6428049.1895 | TOE SLOPE |
| 742 | 1874183.1773 | 6428048.3828 | TOE SLOPE |
| 743 | 1874083.1773 | 6428046.9869 | TOE SLOPE |
| 744 | 1874023.0547 | 6428046.1477 | TOE SLOPE |
| 764 | 1874501.6453 | 6427991.4172 | TOP SLOPE |




GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

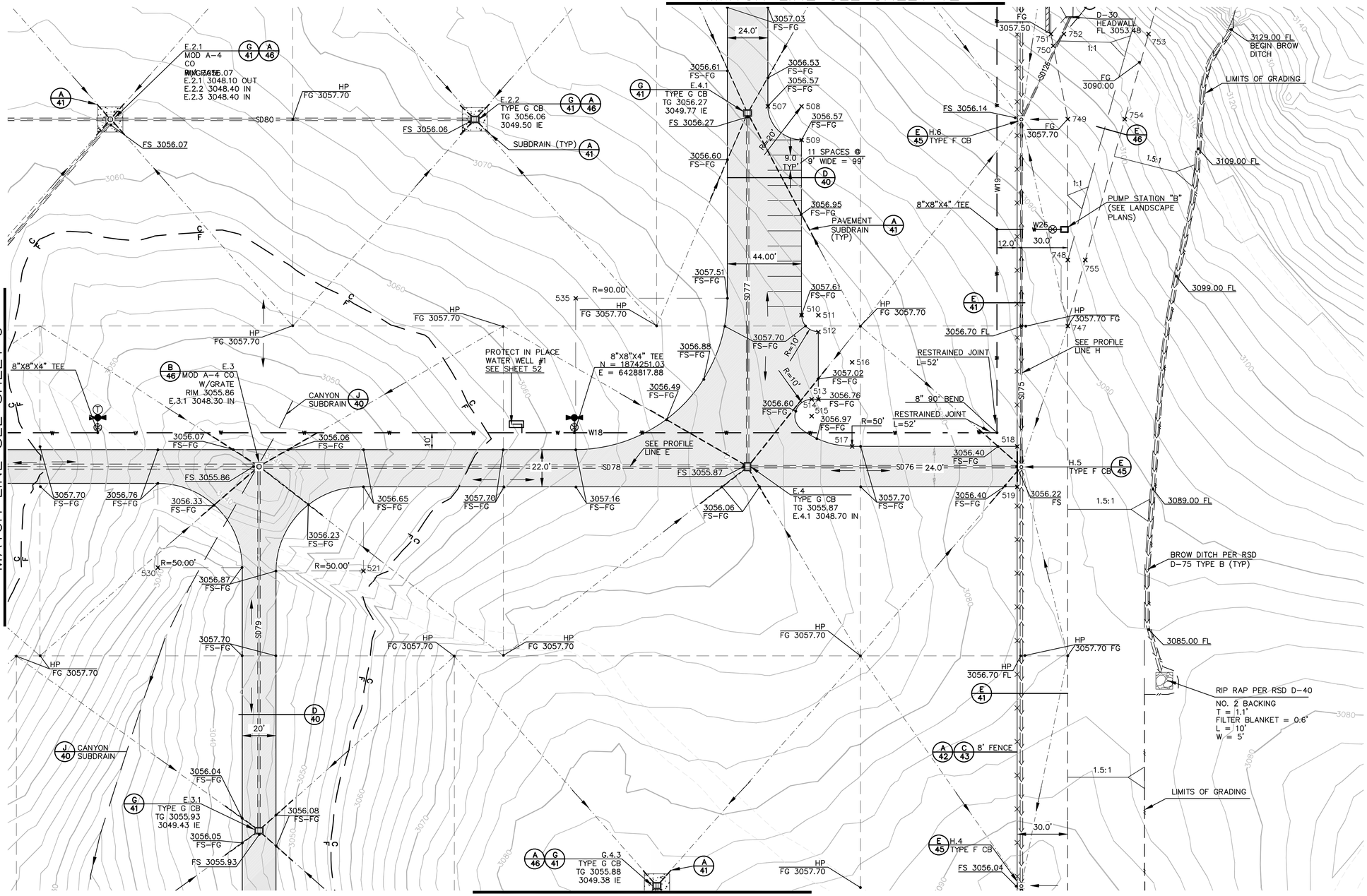
SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 9 OF 66 | | | SCR-C-009 |
| CAD NO.: GP09 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBO3960\CADD\USFS\CIVIL\GP\GP09




## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W18 | N90°00'00"W | ... | 814.00' | 8" PVC DR 18 C900 |
| W19 | N00°00'00"E | ... | 475.00' | 8" PVC DR 18 C900 |
| W26 | N90°00'00"E | ... | 38.24' | 4" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD75 | N00°00'00"W | ... | 203.52' | 18" HDPE |
| SD76 | N90°00'00"W | ... | 159.51' | 18" HDPE |
| SD77 | N00°00'00"W | ... | 206.50' | 18" HDPE |
| SD78 | N90°00'00"W | ... | 286.49' | 24" HDPE |
| SD79 | N00°00'00"W | ... | 212.65' | 18" HDPE |
| SD80 | N90°00'00"W | ... | 212.33' | 18" HDPE |
| SD126 | N25°32'33"E | ... | 66.01' | 12" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 507 | 1874444.9051 | 6428932.6798 | ROAD EP |
| 508 | 1874444.9051 | 6428952.6798 | RADIAL |
| 509 | 1874424.9051 | 6428952.6798 | ROAD EP |
| 510 | 1874320.9051 | 6428952.6798 | ROAD EP |
| 511 | 1874320.9051 | 6428962.6798 | RADIAL |
| 512 | 1874310.9047 | 6428962.6798 | ROAD EP |
| 513 | 1874270.8802 | 6428962.6798 | ROAD EP |
| 514 | 1874270.9047 | 6428958.6798 | ROAD EP |
| 515 | 1874260.9051 | 6428958.6798 | RADIAL |
| 516 | 1874292.9051 | 6428982.6798 | RADIAL |
| 517 | 1874242.9051 | 6428982.6798 | ROAD EP |
| 518 | 1874242.9051 | 6429080.6798 | ROAD EP |
| 519 | 1874218.9051 | 6429080.6798 | ROAD EP |
| 521 | 1874168.9051 | 6428692.6798 | RADIAL |
| 530 | 1874170.9051 | 6428570.6807 | RADIAL |
| 535 | 1874330.9051 | 6428818.6798 | RADIAL |
| 747 | 1874314.4062 | 6429110.6798 | TOE SLOPE |
| 748 | 1874353.6271 | 6429110.6798 | TOE SLOPE |
| 749 | 1874437.3039 | 6429110.6798 | TOE SLOPE |
| 750 | 1874480.8471 | 6429102.0667 | TOE SLOPE |
| 751 | 1874487.8584 | 6429100.6798 | TOE SLOPE |
| 752 | 1874487.8584 | 6429108.4114 | TOE SLOPE |
| 753 | 1874487.8584 | 6429158.6113 | TOE SLOPE |
| 754 | 1874437.3039 | 6429144.4700 | TOE SLOPE |
| 755 | 1874353.6271 | 6429121.0636 | TOE SLOPE |

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

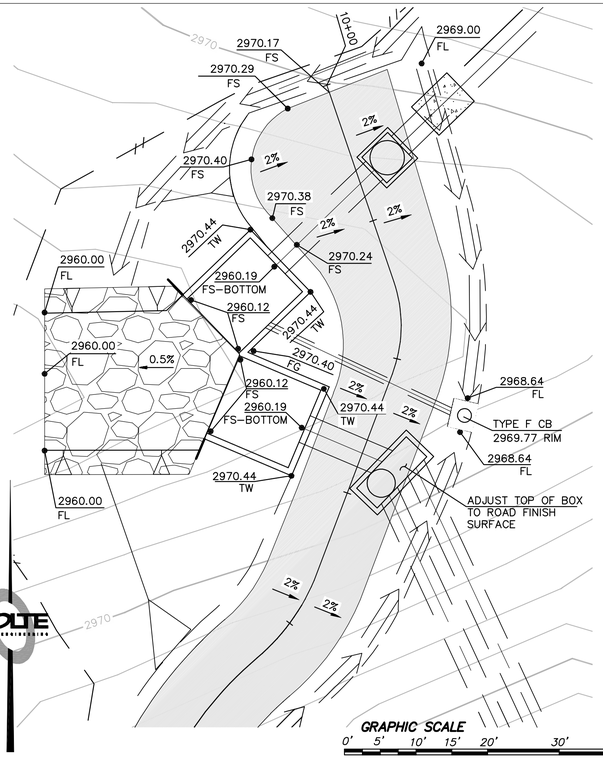
GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 10 OF 66 | | |
| CAD NO.: | GP10 | PLOT SCALE: | 1=1 | | |

SCR-C-010

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD8039600\CADD\USFS\CIVIL\GP\GP10
XREFS:




GRAPHIC SCALE
0' 5' 10' 15' 20' 30' 40'
SCALE 1"= 10'

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD31 | N31°12'08"W | ... | 25.54' | 18" RCP |
| SD60 | N90°00'00"W | ... | 154.18' | 36" HDPE |
| SD61 | N00°00'00"W | ... | 219.00' | 42" HDPE |
| SD62 | N00°00'00"W | ... | 260.79' | 18" HDPE |
| SD63 | N00°00'00"W | ... | 38.19' | 18" HDPE |
| SD64 | N90°00'00"E | ... | 104.83' | 42" HDPE |
| SD65 | N01°33'03"E | ... | 237.84' | 36" HDPE |
| SD66 | N25°00'00"W | ... | 159.21' | 36" HDPE |
| SD67 | N90°00'00"W | ... | 9.00' | 42" HDPE |
| SD68 | N90°00'00"E | ... | 22.81' | 42" RCP |
| SD69 | N01°33'03"E | ... | 41.04' | 36" HDPE |
| SD70 | N25°00'00"W | ... | 151.45' | 36" HDPE |
| SD71 | N90°00'00"E | ... | 37.50' | 18" HDPE |
| SD72 | N46°00'00"E | ... | 19.04' | 42" RCP |
| SD73 | N67°00'00"W | ... | 11.77' | 48" RCP |
| SD89 | N90°00'00"W | ... | 38.00' | 18" RCP |

NOTE 1: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## ROAD A CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| A1 | N18°48'57"W | ... | 29.03' | ... |
| A2 | 39°32'38" | 19.00' | 13.11' | ... |
| A3 | N20°43'41"E | ... | 30.88' | ... |
| A4 | 26°46'08" | 29.00' | 13.55' | ... |
| A5 | 42°40'03" | 51.00' | 37.98' | ... |
| A6 | N7°00'00"E | ... | 258.31' | ... |
| A7 | 61°00'00" | 181.00' | 192.70' | ... |

## × SLOPE POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 533 | 1874643.9051 | 6428247.6794 | RADIAL |
| 536 | 1874803.9051 | 6428207.6798 | RADIAL |
| 551 | 1874961.4465 | 6427921.0763 | CL D-41 |
| 552 | 1874938.4970 | 6427925.0089 | CL D-41 |
| 756 | 1874557.2011 | 6427926.8496 | TOE SLOPE |
| 757 | 1874631.9854 | 6427945.7956 | TOE SLOPE |
| 758 | 1874685.7661 | 6427967.5486 | TOE SLOPE |
| 759 | 1874758.7390 | 6427996.8826 | TOE SLOPE |
| 760 | 1874758.7390 | 6428017.9169 | TOE SLOPE |
| 761 | 1874649.4964 | 6428013.3089 | TOE SLOPE |
| 762 | 1874539.1607 | 6428008.9713 | TOE SLOPE |
| 763 | 1874524.3370 | 6427992.7702 | TOE SLOPE |
| 764 | 1874501.6453 | 6427991.4172 | TOP SLOPE |
| 765 | 1874540.8818 | 6427911.7902 | TOP SLOPE |
| 766 | 1874569.6238 | 6427897.1001 | TOP SLOPE |
| 767 | 1874640.2700 | 6427925.9557 | TOP SLOPE |
| 768 | 1874693.8002 | 6427948.3087 | TOP SLOPE |
| 769 | 1874766.3685 | 6427978.6115 | TOP SLOPE |
| 770 | 1874758.2041 | 6428037.6735 | TOP SLOPE |
| 771 | 1874648.9159 | 6428034.7510 | TOP SLOPE |
| 772 | 1874538.5436 | 6428031.7629 | TOP SLOPE |
| 773 | 1874757.3617 | 6428068.7887 | TOP SLOPE |
| 774 | 1874647.6036 | 6428082.0932 | TOP SLOPE |
| 775 | 1874537.3927 | 6428073.2828 | TOP SLOPE |
| 776 | 1874756.4172 | 6428103.6798 | TOP SLOPE |
| 777 | 1874647.0052 | 6428103.6798 | TOP SLOPE |
| 778 | 1874536.5501 | 6428103.6798 | TOP SLOPE |
| 813 | 1874884.9113 | 6427969.5442 | TOP SLOPE |
| 814 | 1874934.7821 | 6427991.9635 | TOP SLOPE |
| 815 | 1874984.0375 | 6427988.5743 | TOP SLOPE |
| 816 | 1874820.4757 | 6428049.0867 | TOP SLOPE |
| 817 | 1874929.8888 | 6428021.5129 | TOP SLOPE |
| 818 | 1874993.3028 | 6428018.3672 | TOP SLOPE |
| 819 | 1874820.4757 | 6428103.6798 | TOP SLOPE |
| 820 | 1874929.8888 | 6428103.6798 | TOP SLOPE |
| 821 | 1874993.3028 | 6428103.6798 | TOP SLOPE |

## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W16 | N00°00'00"W | ... | 333.58' | 8" PVC DR 18 C900 |
| W20 | N45°00'00"E | ... | 100.00' | 8" PVC DR 18 C900 |
| W21 | N90°00'00"E | ... | 794.00' | 8" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.

MATCH LINE SEE SHEET 13

MATCH LINE SEE SHEET 12

MATCH LINE SEE SHEET 9

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

N:\SD8039600\CADD\USPS\CIVIL\GP\GP11
XREFS:

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

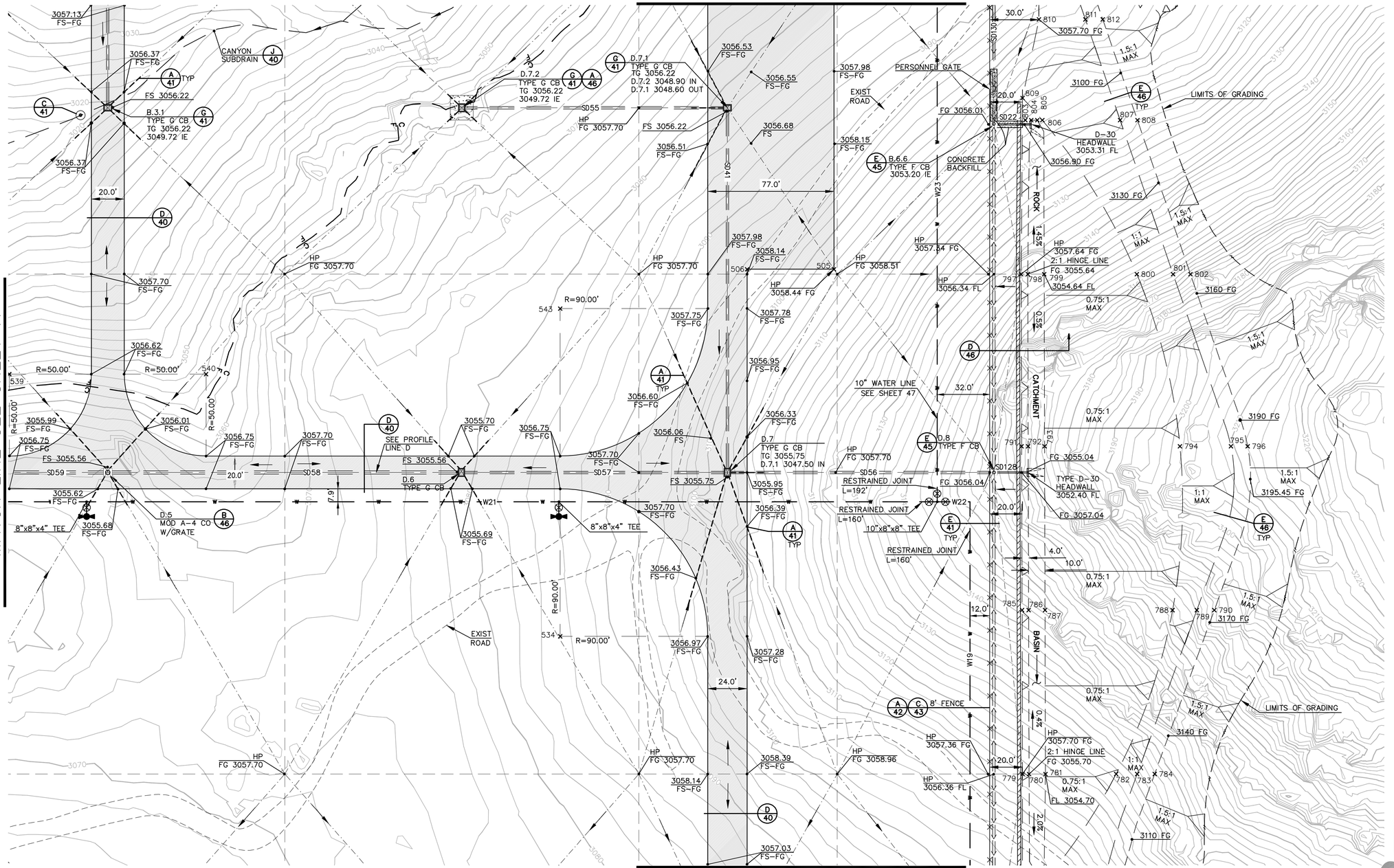
SUNCREST SUBSTATION

GRADING PLAN

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | SCR-C-011 | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 11 OF 66 | | | | |
| CAD NO.: | GP11 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

MATCH LINE SEE SHEET 14




## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W19 | N90°00'00"E | ... | 475.00' | 8" PVC DR 18 C900 |
| W21 | N00°00'00"E | ... | 794.00' | 8" PVC DR 18 C900 |
| W22 | N00°00'00"E | ... | 20.00' | 8" PVC DR 18 C900 |
| W23 | N00°00'00"E | ... | 407.87' | 10" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD22 | N90°00'00"W | ... | 21.37' | 12" HDPE |
| SD41 | N00°00'00"W | ... | 219.01' | 18" HDPE |
| SD55 | N90°00'00"E | ... | 158.55' | 18" HDPE |
| SD56 | N90°00'00"W | ... | 159.55' | 18" HDPE |
| SD57 | N90°00'00"W | ... | 159.27' | 18" HDPE |
| SD58 | N90°00'00"W | ... | 212.22' | 24" HDPE |
| SD59 | N90°00'00"W | ... | 207.33' | 24" HDPE |
| SD128 | N90°00'00"W | ... | 19.46' | 12" HDPE |
| SD130 | N00°00'00"E | ... | 130.86' | 12" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 505 | 1874867.9144 | 6428985.6798 | CORNER |
| 506 | 1874867.9144 | 6428932.6798 | CORNER |
| 534 | 1874643.9051 | 6428818.6798 | RADIAL |
| 539 | 1874803.9051 | 6428482.6798 | RADIAL |
| 540 | 1874803.9051 | 6428602.6798 | RADIAL |
| 543 | 1874843.9051 | 6428818.6708 | RADIAL |
| 779 | 1874559.9051 | 6429100.6798 | TOP SLOPE |
| 780 | 1874559.8373 | 6429104.6798 | TOE SLOPE |
| 781 | 1874559.8373 | 6429114.6798 | TOE SLOPE |
| 782 | 1874559.9051 | 6429157.7857 | HINGE PT |
| 783 | 1874559.9051 | 6429170.6358 | TOP SLOPE |
| 784 | 1874559.9051 | 6429181.2768 | TOE SLOPE |
| 785 | 1874659.9051 | 6429100.4111 | TOP SLOPE |
| 786 | 1874659.9051 | 6429104.4110 | TOE SLOPE |
| 787 | 1874659.9051 | 6429114.4110 | TOE SLOPE |
| 788 | 1874659.9051 | 6429192.2347 | HINGE PT |
| 789 | 1874659.9051 | 6429207.0101 | TOP SLOPE |
| 790 | 1874659.9051 | 6429217.6511 | TOE SLOPE |
| 791 | 1874759.9051 | 6429100.1341 | TOP SLOPE |
| 792 | 1874759.9051 | 6429104.1456 | TOE SLOPE |
| 793 | 1874759.9051 | 6429114.1548 | TOE SLOPE |
| 794 | 1874759.9051 | 6429196.7222 | HINGE PT |
| 795 | 1874759.9051 | 6429227.8208 | TOP SLOPE |
| 796 | 1874759.9051 | 6429238.0107 | TOE SLOPE |
| 797 | 1874864.9051 | 6429099.7965 | TOP SLOPE |
| 798 | 1874864.9310 | 6429103.8848 | TOE SLOPE |
| 799 | 1874864.9051 | 6429113.8848 | TOE SLOPE |
| 800 | 1874864.9051 | 6429170.4084 | HINGE PT |
| 801 | 1874864.9051 | 6429192.5377 | TOP SLOPE |
| 802 | 1874864.9051 | 6429203.1130 | TOE SLOPE |
| 803 | 1874958.8738 | 6429102.4397 | TOP SLOPE |
| 804 | 1874958.8738 | 6429106.0507 | TOE SLOPE |
| 805 | 1874958.8726 | 6429109.6921 | TOE SLOPE |
| 806 | 1874958.8738 | 6429112.7728 | HINGE PT |
| 807 | 1874958.8738 | 6429160.1959 | TOP SLOPE |
| 808 | 1874958.8738 | 6429170.7837 | TOE SLOPE |
| 809 | 1874972.4128 | 6429100.6798 | TOE HINGE |
| 810 | 1875020.3484 | 6429110.6798 | TOE SLOPE |
| 811 | 1875020.3484 | 6429139.0586 | TOP SLOPE |
| 812 | 1875020.3484 | 6429149.6339 | TOE SLOPE |

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 12 OF 66 | | | SCR-C-012 |
| CAD NO.: GP12 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD8039600\CADD\USFS\CIVIL\GP\GP12
XREFS:

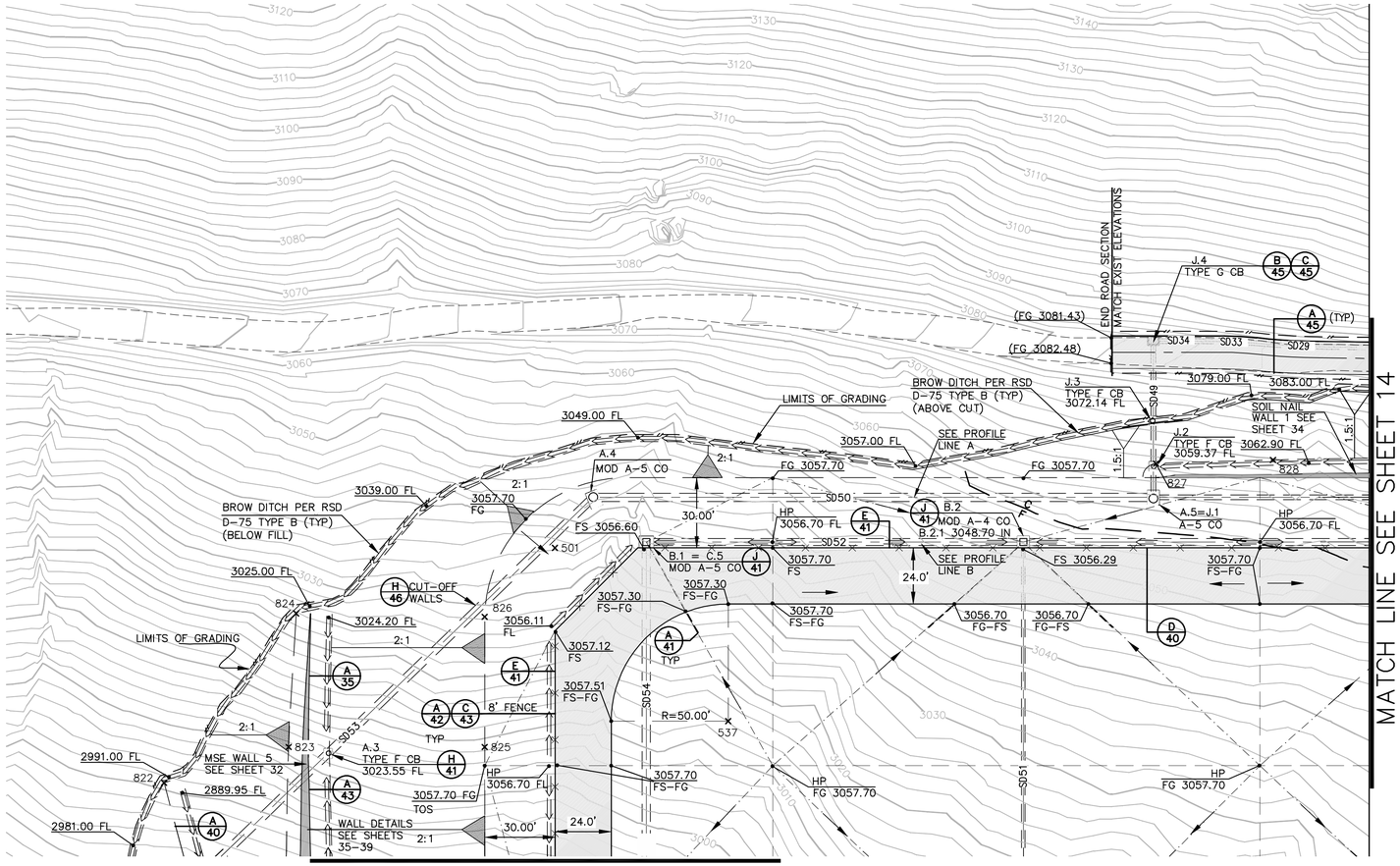
## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD29 | 3°43'51" | 400.00' | 26.05' | 24" HDPE |
| SD33 | 4°29'12" | 400.00' | 31.32' | 24" HDPE |
| SD34 | N89°59'51"W | | 15.73' | 24" HDPE |
| SD49 | N00°00'00"E | ... | 62.93' | 24" HDPE |
| SD50 | N90°00'00"E | ... | 235.03' | 42" HDPE |
| SD51 | N00°00'00"E | ... | 193.49' | 18" HDPE |
| SD52 | N90°00'00"E | ... | 156.50' | 36" HDPE |
| SD53 | N46°00'00"E | ... | 292.03' | 42" HDPE |
| SD54 | N00°00'00"W | ... | 193.50' | 42" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 501 | 1875160.9051 | 6428133.6798 | CORNER |
| 537 | 1875086.9051 | 6428207.6798 | RADIAL |
| 822 | 1875060.5850 | 6427966.7742 | TOP SLOPE |
| 823 | 1875075.8299 | 6428019.9395 | TOP SLOPE |
| 824 | 1875132.9054 | 6428023.1914 | TOP SLOPE |
| 825 | 1875075.8299 | 6428103.6798 | TOP SLOPE |
| 826 | 1875131.4232 | 6428103.6872 | TOP SLOPE |
| 827 | 1875196.8964 | 6428390.3434 | TOE SLOPE |
| 828 | 1875198.4328 | 6428440.3198 | TOE SLOPE |




GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

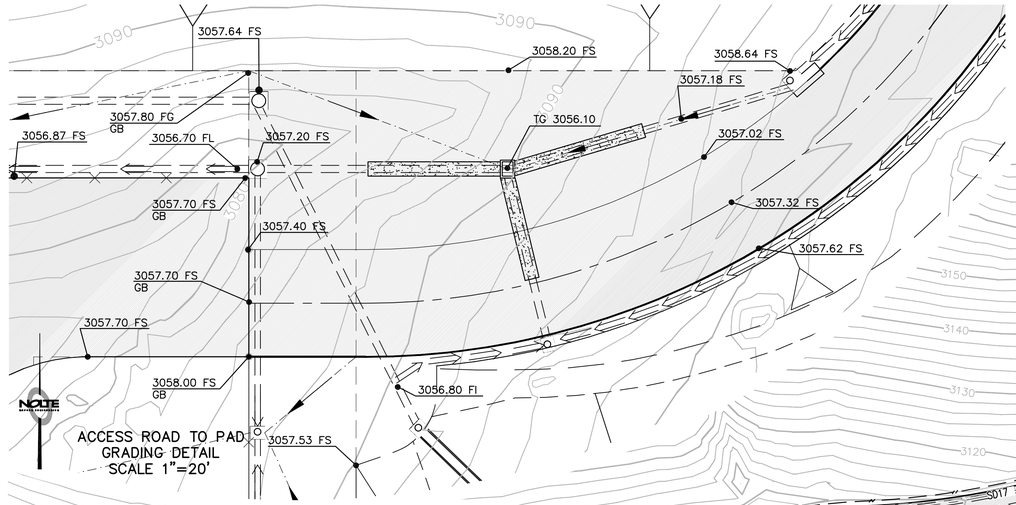
SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 13 OF 66 | SCR-C-013 | |
| CAD NO.: | GP13 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG39600\CADD\USFS\CIVIL\GP\GP13
XREFS:







## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W7 | N90°00'00"W | ... | 64.73' | 10" PVC DR 18 C900 |
| W8 | 62°58'55" | 192.00' | 211.05' | 10" PVC DR 18 C900 |
| W9 | 42°59'35" | 208.00' | 156.08' | 10" PVC DR 18 C900 |
| W24 | N90°00'00"W | ... | 270.00' | 8" PVC DR 18 C900 |
| W27 | N90°00'00"W | ... | 52.05' | 6" PVC DR 18 C900 |

## CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH |
|---|---|---|---|
| CL1 | N90°00'00"W | ... | 32.72' |
| CL2 | 62°58'55" | 200.00' | 219.85' |
| CL3 | 42°59'35" | 200.00' | 150.07' |
| CL4 | N70°00'40"E | ... | 243.04' |

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 502 | 1875160.9051 | 6429080.6798 | CORNER |
| 503 | 1875110.9051 | 6429080.6798 | ROAD EP |
| 504 | 1875060.9051 | 6429035.6798 | RADIAL |
| 538 | 1875086.9051 | 6428482.6798 | RADIAL |
| 541 | 1875086.9051 | 6428602.6798 | RADIAL |
| 542 | 1875086.9051 | 6428858.6798 | RADIAL |

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 852 | 1875296.6661 | 6429414.2987 | TOE SLOPE |
| 855 | 1875370.2689 | 6429387.5256 | TOE SLOPE |
| 856 | 1875247.7104 | 6429348.9965 | TOE SLOPE |
| 859 | 1875301.2219 | 6429286.5680 | TOE SLOPE |
| 860 | 1875215.8098 | 6429329.3198 | TOE SLOPE |
| 863 | 1875252.8799 | 6429256.6220 | TOE SLOPE |
| 864 | 1875162.2201 | 6429294.6828 | TOE SLOPE |
| 867 | 1875224.0022 | 6429240.1474 | TOE SLOPE |

## × POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 868 | 1875102.7333 | 6429191.4374 | TOE SLOPE |
| 870 | 1875190.9051 | 6429160.6114 | TOE SLOPE |
| 871 | 1875222.6548 | 6429149.6145 | TOE SLOPE |
| 873 | 1875080.5522 | 6429110.6798 | TOE SLOPE |
| 874 | 1875190.9051 | 6429233.5887 | TOE SLOPE |
| 875 | 1875191.3551 | 6429090.6664 | TOE SLOPE |
| 876 | 1875221.7775 | 6429090.6665 | TOE SLOPE |
| 877 | 1875191.3540 | 6428990.6664 | TOE SLOPE |
| 878 | 1875220.2892 | 6428990.6744 | TOE SLOPE |
| 879 | 1875191.3530 | 6428890.6664 | TOE SLOPE |
| 880 | 1875218.8010 | 6428890.6824 | TOE SLOPE |
| 881 | 1875191.0104 | 6428785.4888 | TOE SLOPE |
| 882 | 1875217.4736 | 6428785.4123 | TOE SLOPE |
| 883 | 1875209.8932 | 6428757.1587 | TOE SLOPE |
| 884 | 1875199.9091 | 6428690.6664 | TOE SLOPE |
| 885 | 1875200.1897 | 6428590.6664 | TOE SLOPE |
| 886 | 1875199.3339 | 6428490.6664 | TOE SLOPE |

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD7 | 4°34'06" | 524.00' | 87.58' | 18" HDPE |
| SD8 | 05°42'22" | 524.00' | 52.19' | 18" HDPE |
| SD9 | 12°18'42" | 316.00' | 67.90' | 18" HDPE |
| SD10 | 15°39'35" | 254.00' | 69.42' | 18" HDPE |
| SD11 | N62°31'04"E | ... | 70.90' | 18" HDPE |
| SD12 | 21°53'34" | 261.00' | 99.73' | 18" HDPE |
| SD13 | N84°24'38"E | ... | 48.92' | 18" HDPE |
| SD14 | 08°31'37" | 255.00' | 37.95' | 18" HDPE |
| SD15 | N75°53'01"E | ... | 2.37' | 18" HDPE |
| SD16 | N72°42'27"E | ... | 40.62' | 24" HDPE |
| SD17 | 12°00'49" | 400.00' | 83.87' | 24" HDPE |
| SD18 | 13°20'58" | 400.00' | 93.20' | 24" HDPE |
| SD19 | 10°39'40" | 400.00' | 74.43' | 24" HDPE |
| SD20 | 1°24'06" | 400.00' | 9.79' | 24" HDPE |
| SD21 | N00°00'00"E | ... | 70.47' | 24" HDPE |
| SD24 | 3°29'48" | 400.00' | 24.41' | 24" HDPE |
| SD25 | 5°40'46" | 400.00' | 39.65' | 24" HDPE |
| SD26 | N86°11'25"E | ... | 81.63' | 24" HDPE |

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD27 | 4°34'06" | 400.00' | 31.89' | 24" HDPE |
| SD28 | N89°14'30"W | ... | 35.04' | 24" HDPE |
| SD32 | N90°00'00"E | ... | 103.20' | 24" HDPE |
| SD35 | N73°33'08"E | ... | 80.97' | 24" HDPE |
| SD36 | N13°32'27"W | ... | 46.80' | 24" HDPE |
| SD37 | N90°00'00"E | ... | 66.35' | 24" HDPE |
| SD38 | N26°33'16"W | ... | 98.83' | 24" HDPE |
| SD39 | N46°05'36"W | ... | 70.15' | SPILLWAY |
| SD40 | N90°00'00"E | ... | 132.00 | 24" HDPE |
| SD42 | N90°00'00"E | ... | 284.62' | 24" HDPE |
| SD43 | N90°00'00"E | ... | 149.73' | 36" HDPE |
| SD44 | N00°00'00"E | ... | 13.52' | SPILLWAY |
| SD45 | N90°00'00"E | ... | 294.49' | 24" HDPE |
| SD46 | N90°00'00"E | ... | 246.77' | 36" HDPE |
| SD47 | N00°00'00"E | ... | 193.49' | 18" HDPE |
| SD48 | N90°00'00"E | ... | 205.00' | 36" HDPE |
| SD129 | N00°00'00"E | ... | 27.08' | 12" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.

GRAPHIC SCALE
0' 10' 20' 30' 45' 60' 90' 120'
SCALE: 1"= 30'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

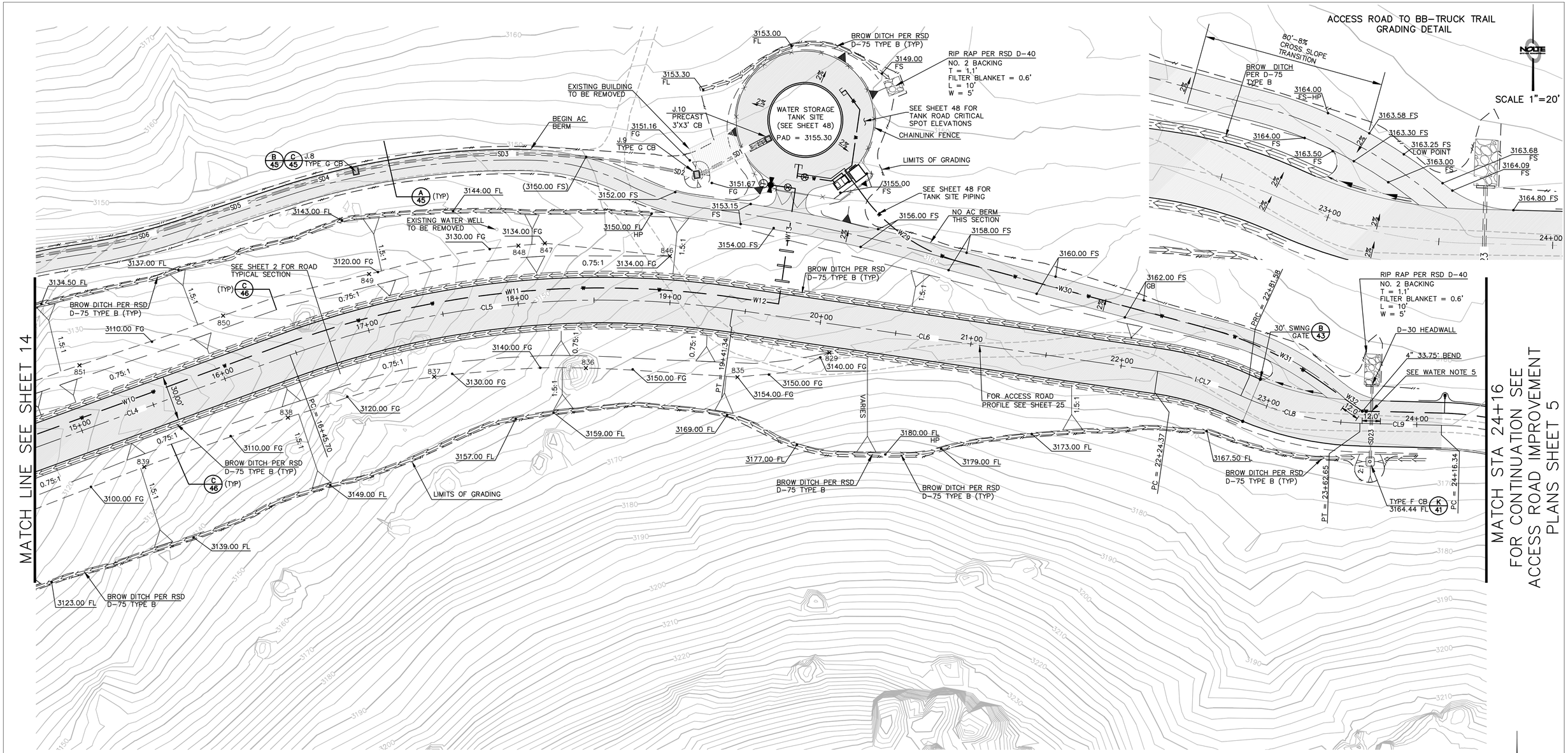
SUNCREST SUBSTATION

GRADING PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 14 OF 66 | | SCR-C-014 |
| CAD NO.: | GP14 | | PLOT SCALE: 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB\039600\CADD\USFS\CIVIL\GP\GP14
XREFS:




## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W8 | 62°58'55" | 192.00' | 211.05' | 10" PVC DR 18 C900 |
| W9 | 42°59'35" | 208.00' | 156.08' | 10" PVC DR 18 C900 |
| W10 | N70°0'40"E | ... | 243.04' | 10" PVC DR 18 C900 |
| W11 | 28°13'55" | 608.00' | 299.59' | 10" PVC DR 18 C900 |
| W12 | N81°45'25"W | ... | 29.67' | 10" PVC DR 18 C900 |
| W13 | N8°14'35"E | ... | 92.65' | 10" PVC DR 18 C900 |
| W29 | 38°13'32" | 115' | 76.72' | 4" PVC DR 18 C900 |
| W30 | N74°58'27"W | ... | 169.34' | 4" PVC DR 18 C900 |
| W31 | 20°07'56" | 230' | 80.82' | 4" PVC DR 18 C900 |
| W32 | N54°50'31"W | ... | 35.39' | 4" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 700)
3. INSTALL BLOWOFFS PER SDWAS DWG WB-01 AT ALL LOW POINTS IN WATER PIPELINES.
4. INSTALL AIR RELEASE VALVES PER SDWAS DWGS WA-02 AND WA-03 AT ALL HIGH POINTS IN WATER PIPELINES.
5. INSTALL PROPOSED 4" WATER LINE A MINIMUM OF 12" BELOW PROPOSED STORM DRAIN CULVERT.

NOTE

1. SEE SHEET 25 FOR MAIN ACCESS ROAD CL PROFILE DESIGN.

## x POINT DATA TABLE

| POINT # | NORTHING | EASTING | REMARKS |
|---|---|---|---|
| 829 | 1875416.7172 | 6429984.8246 | TOE SLOPE |
| 835 | 1875400.6656 | 6429924.3363 | TOE SLOPE |
| 836 | 1875406.6336 | 6429824.5120 | TOE SLOPE |
| 837 | 1875400.8890 | 6429724.6771 | TOE SLOPE |
| 838 | 1875374.0192 | 6429628.3547 | TOE SLOPE |
| 839 | 1875341.5632 | 6429533.7682 | TOE SLOPE |
| 843 | 1875452.1670 | 6429685.8916 | TOE SLOPE |
| 846 | 1875480.3115 | 6429879.8038 | TOE SLOPE |
| 847 | 1875488.7674 | 6429797.5493 | TOE SLOPE |
| 848 | 1875487.1718 | 6429780.0804 | TOE SLOPE |
| 849 | 1875468.5324 | 6429681.8329 | TOE SLOPE |
| 850 | 1875441.1119 | 6429585.6658 | TOE SLOPE |
| 851 | 1875408.4686 | 6429491.1437 | TOE SLOPE |

## STORMDRAIN DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| SD1 | N62°47'12"E | ... | 49.61' | 12" HDPE |
| SD2 | N78°15'52"W | ... | 18.11' | 18" HDPE |
| SD3 | 23°49'22" | 494.00' | 205.40' | 18" HDPE |
| SD4 | 05°46'09" | 494.00' | 49.74' | 18" HDPE |
| SD5 | N71°47'44"E | ... | 71.77' | 18" HDPE |
| SD6 | 09°40'50" | 396.00' | 66.91' | 18" HDPE |
| SD23 | N01°24'29"E | ... | 49.00' | 18" HDPE |

NOTE: ALL STORM DRAIN LENGTHS ARE MEASURED ALONG PIPE CENTERLINE FROM INSIDE FACE TO INSIDE FACE ON CONCRETE STRUCTURE OR TO TERMINATION POINT AT CONCRETE HEADWALL. TABLE LENGTHS REPRESENT TOTAL PIPE LENGTH WHERE PIPES ARE SHOWN ON TWO PLAN SHEETS.

## CENTERLINE DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH |
|---|---|---|---|
| CL4 | N70°00'40"W | ... | 243.04' |
| CL5 | 28°13'55" | 600.00' | 295.64' |
| CL6 | N81°45'25"W | ... | 243.04' |
| CL7 | 16°23'20" | 200.00' | 27.51' |
| CL8 | 25°13'26" | 200.00' | 81.07' |
| CL9 | N88°35'31"W | ... | 53.69' |

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

GRADING PLAN

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=30' | W.O.: | – | REV.: | 0 |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 15 OF 66 | | | | |
| CAD NO.: | GP15 | PLOT SCALE: 1=1 | | | | | |

SCR-C-015

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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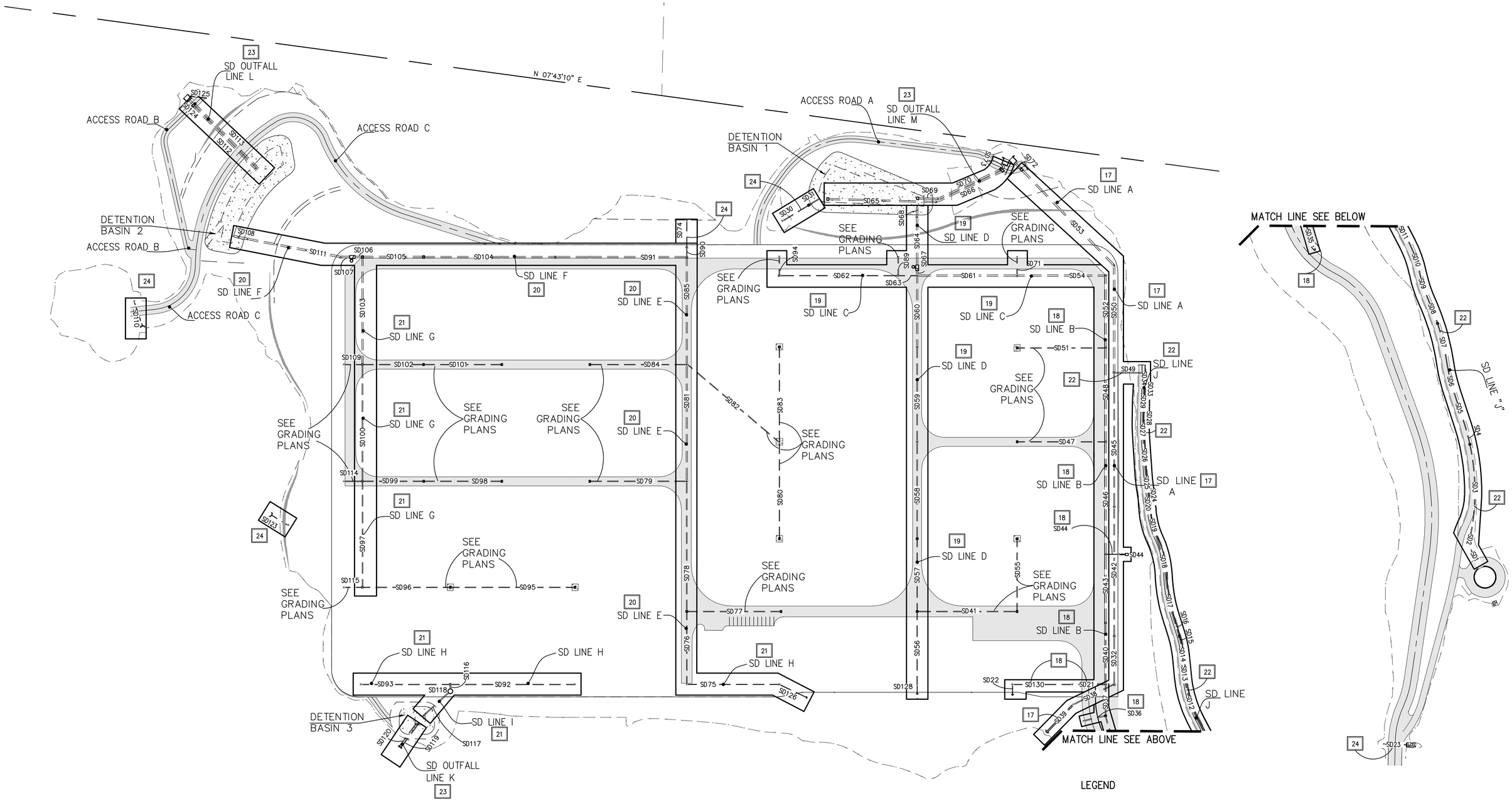
XREFS:




LEGEND

SD ID LABEL — SD LINE D

SHEET No. — XX

FOR SD LATERALS NOT LOCATED IN THE PROFILE SYSTEM SEE GRADING PLANS.

NOLTE BEYOND ENGINEERING

GRAPHIC SCALE
0' 100' 150' 200' 300' 400'
SCALE: 1"= 100'

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

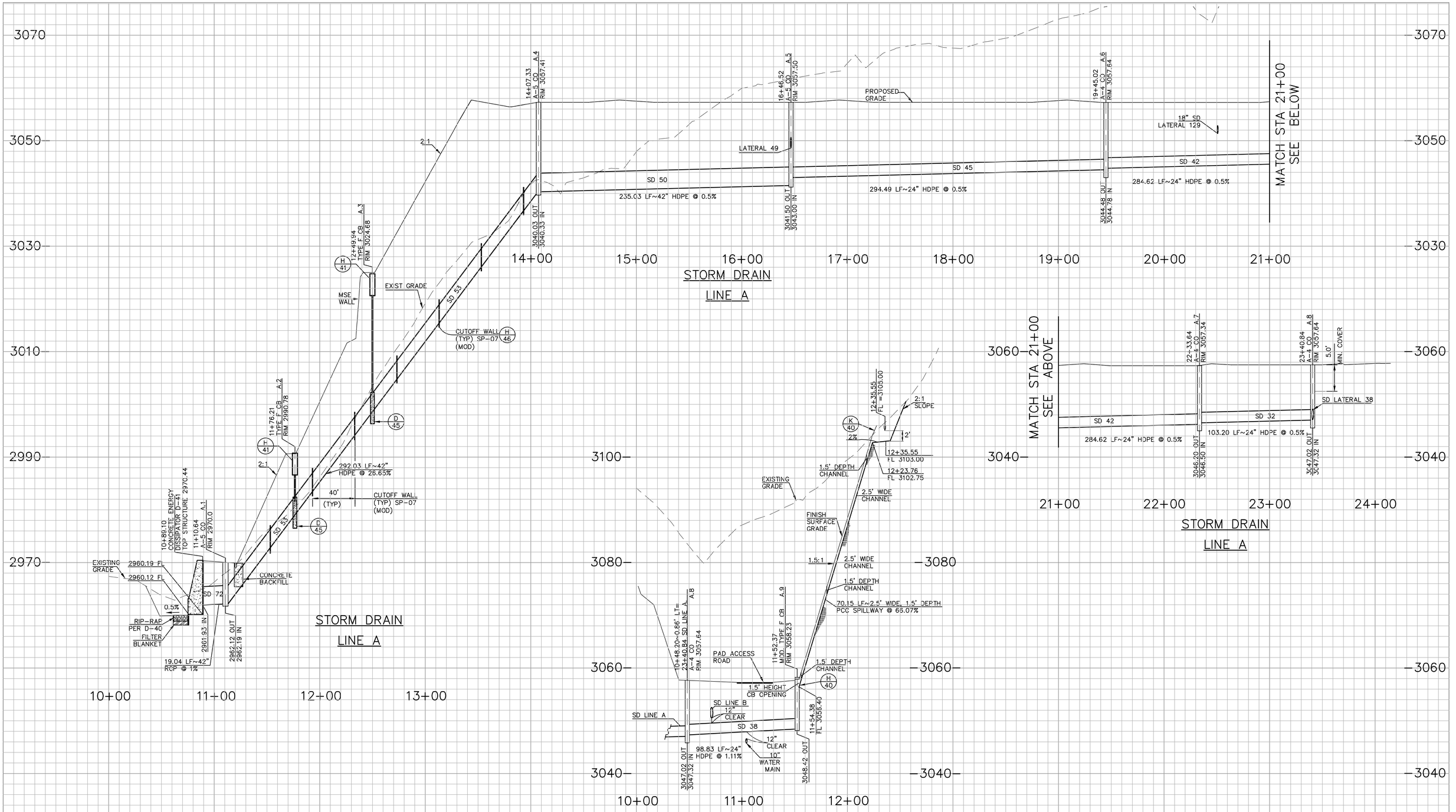
SUNCREST SUBSTATION

STORM DRAIN PROFILES – KEY MAP

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/24/09 | SCALE: 1"=100' | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 16 OF 66 | | | SCR-C-016 | |
| CAD NO.: | GP16 | PLOT SCALE: | 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP16
XREFS:




SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

N:\SDB039600\C400\USFS\CIVIL\GP\GP17
XREFS:

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

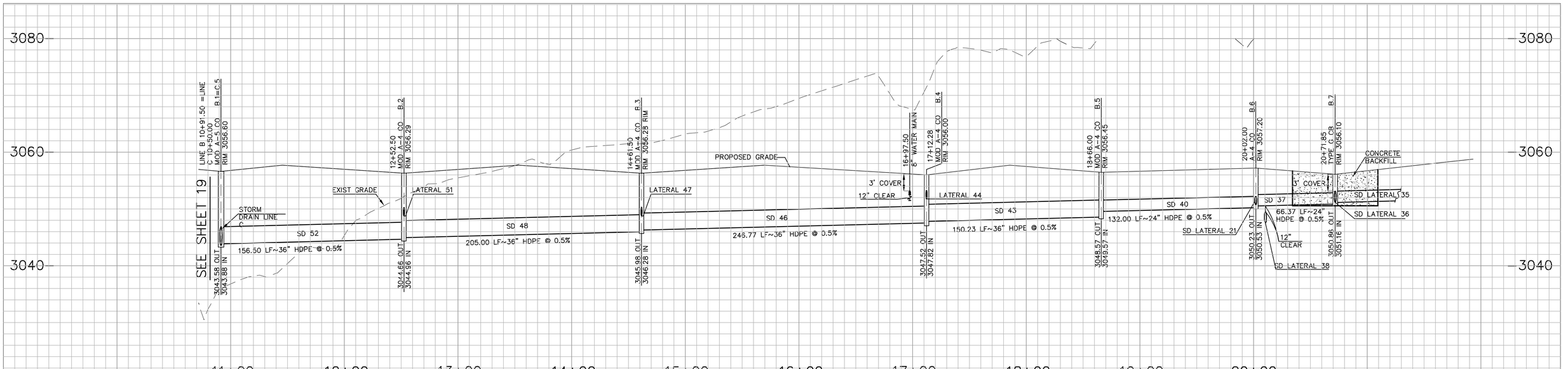
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

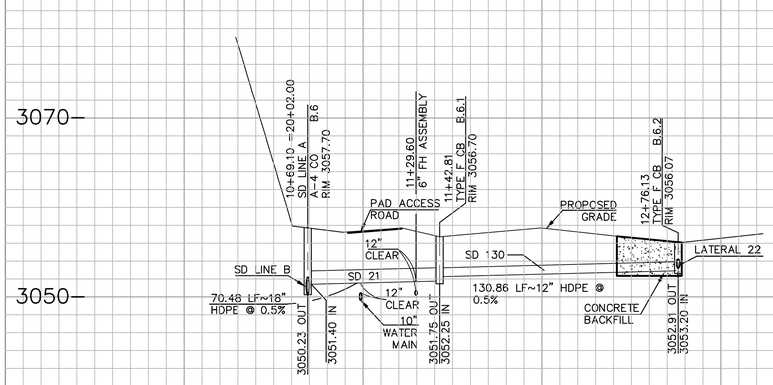
STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/30/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 17 OF 66 | | SCR-C-017 |
| CAD NO.: | GP17 | PLOT SCALE: 1=1 | | | |

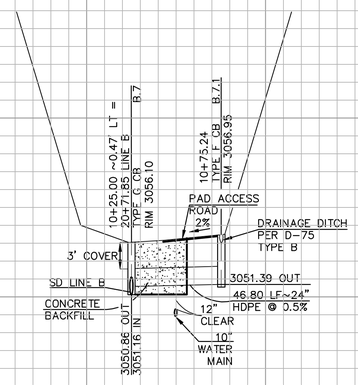
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09



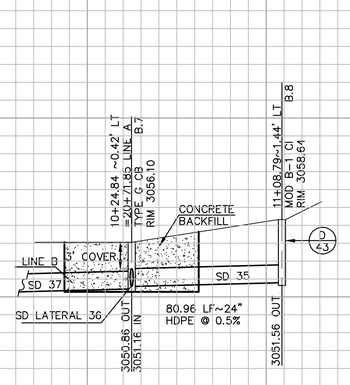

STORM DRAIN
LINE B



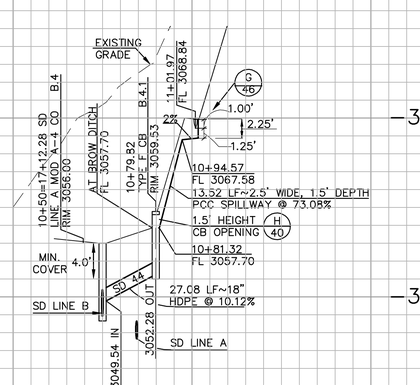

SD LATERAL 21 & 18




SD LATERAL 36




SD LATERAL 35




SD LATERAL 44

SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

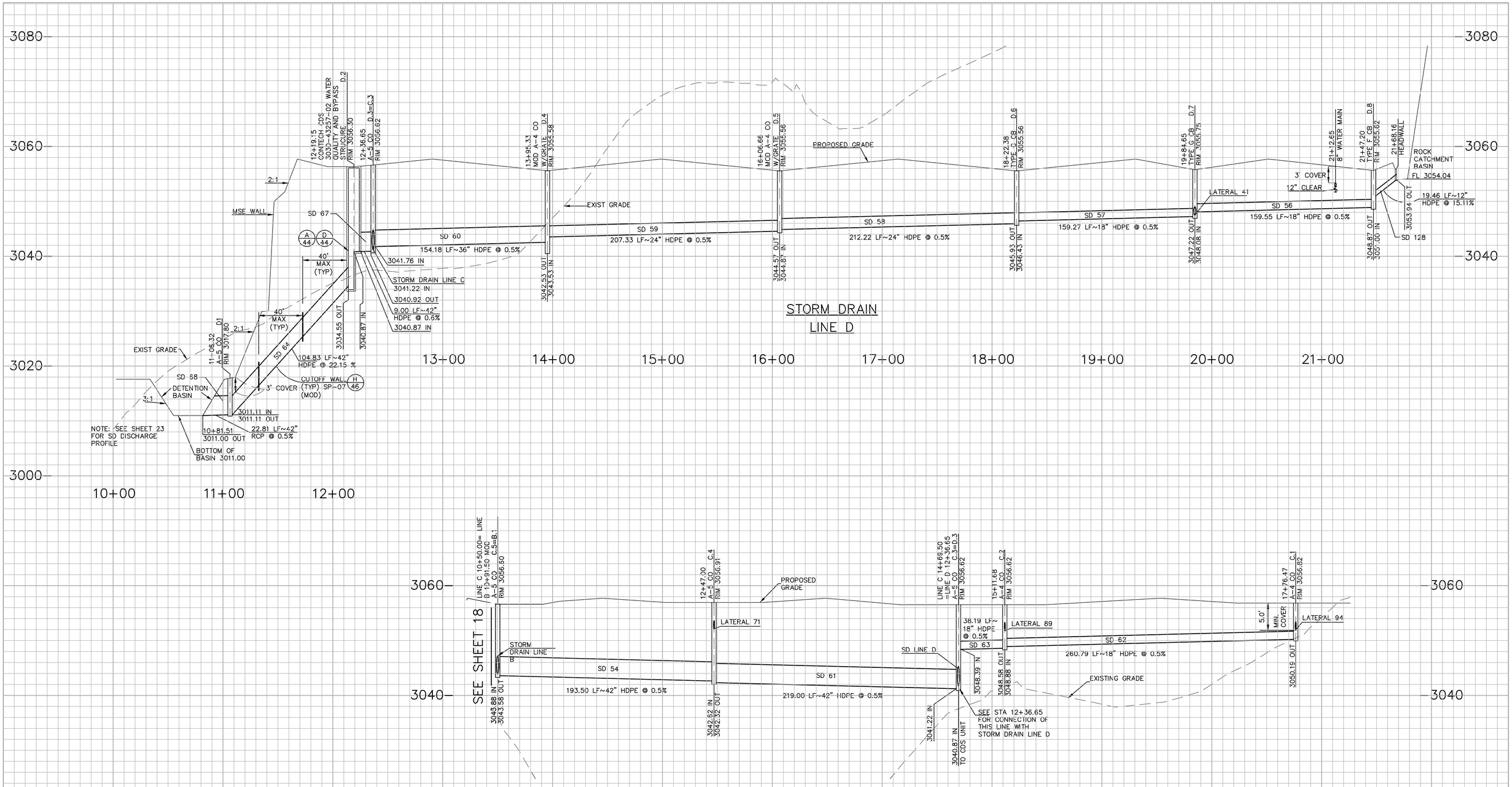
SUNCREST SUBSTATION

STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 18 OF 66 | | SCR-C-018 |
| CAD NO.: | GP18 | | PLOT SCALE: 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBD3960\CADD\USFS\CIVIL\GP\GP18
XREFS:




STORM DRAIN LINE D

STORM DRAIN LINE C

SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

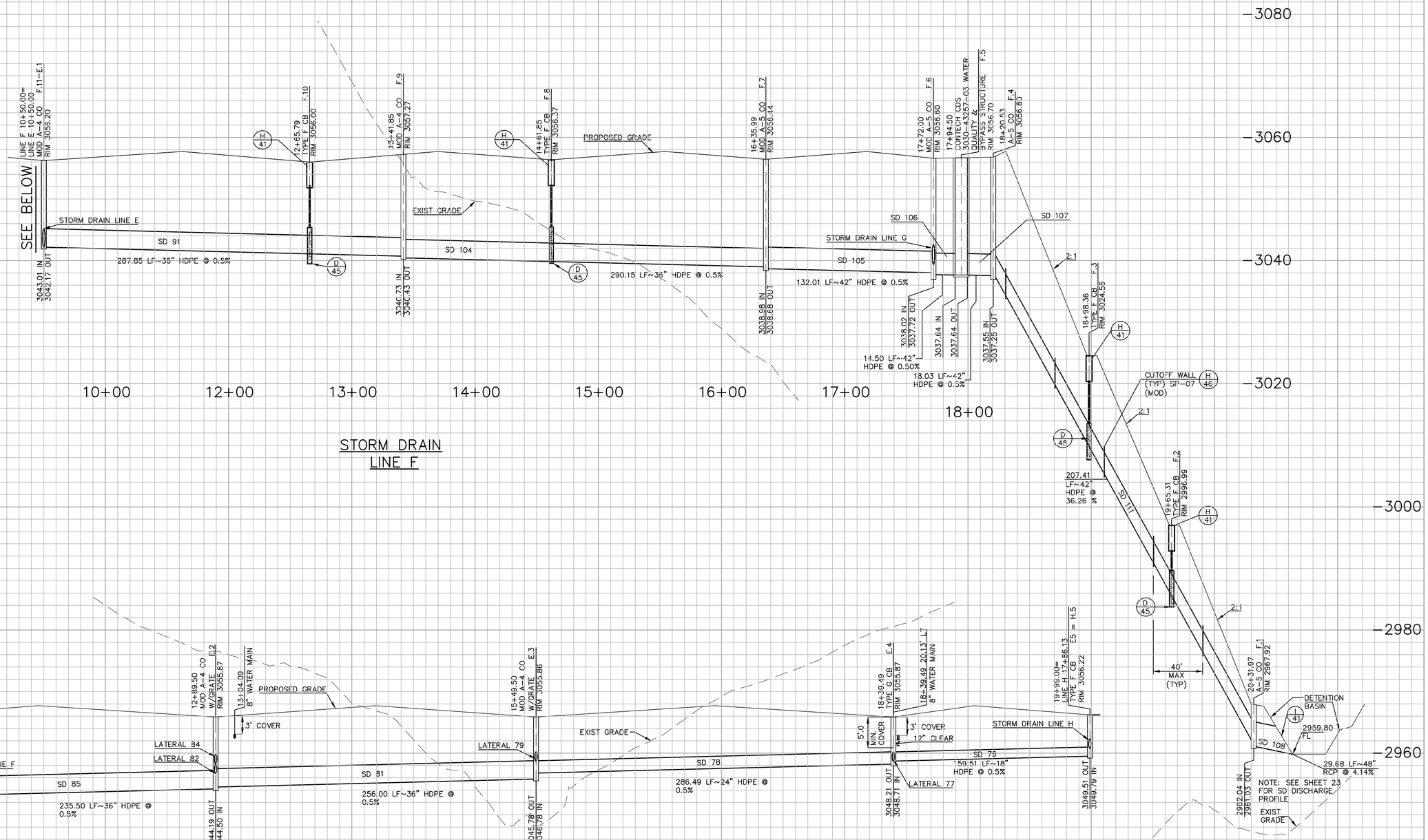
SUNCREST SUBSTATION

STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | RCF | DATE: 11/25/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 19 OF 66 | | SCR-C-019 |
| CAD NO.: | GP19 | | PLOT SCALE: 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBO3960\CADD\USFS\CIVIL\GP\GP19
XREFS:




SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

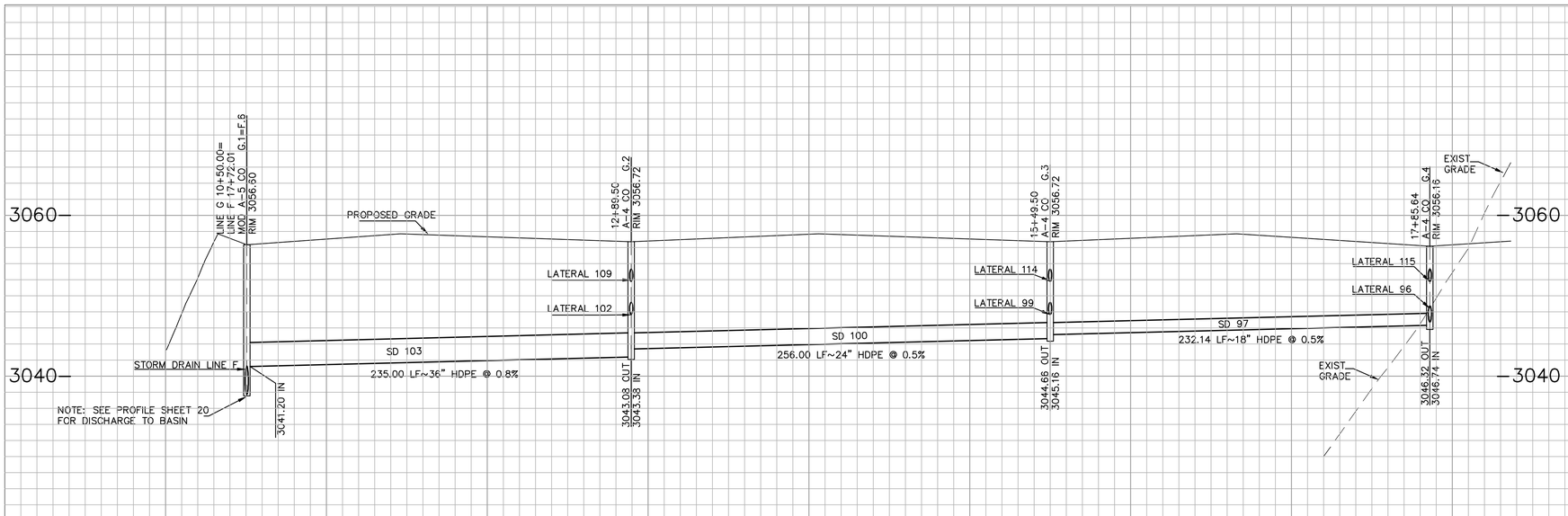
STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | RCF | DATE: 11/25/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 20 OF 66 | | |
| CAD NO.: | GP20 | PLOT SCALE: | 1=1 | | |

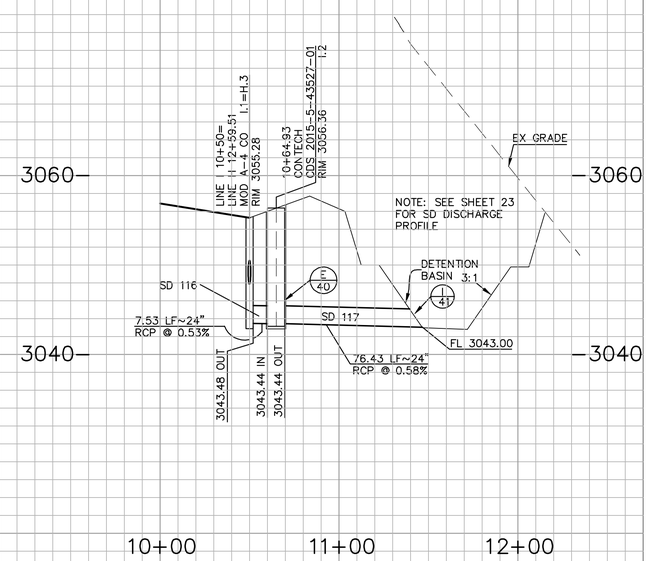
SCR-C-020

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

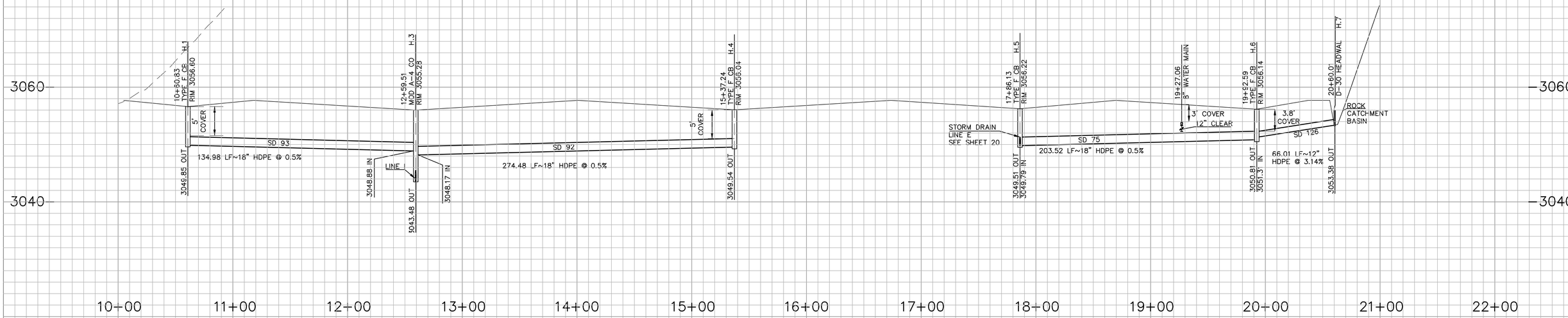
N:\SD80396O0\CADD\USFS\CIVIL\GP\GP20




STORM DRAIN
LINE G




STORM DRAIN
LINE I




STORM DRAIN
LINE H

SCALE
HORIZ: 1"= 40'
VERT: 1"=8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

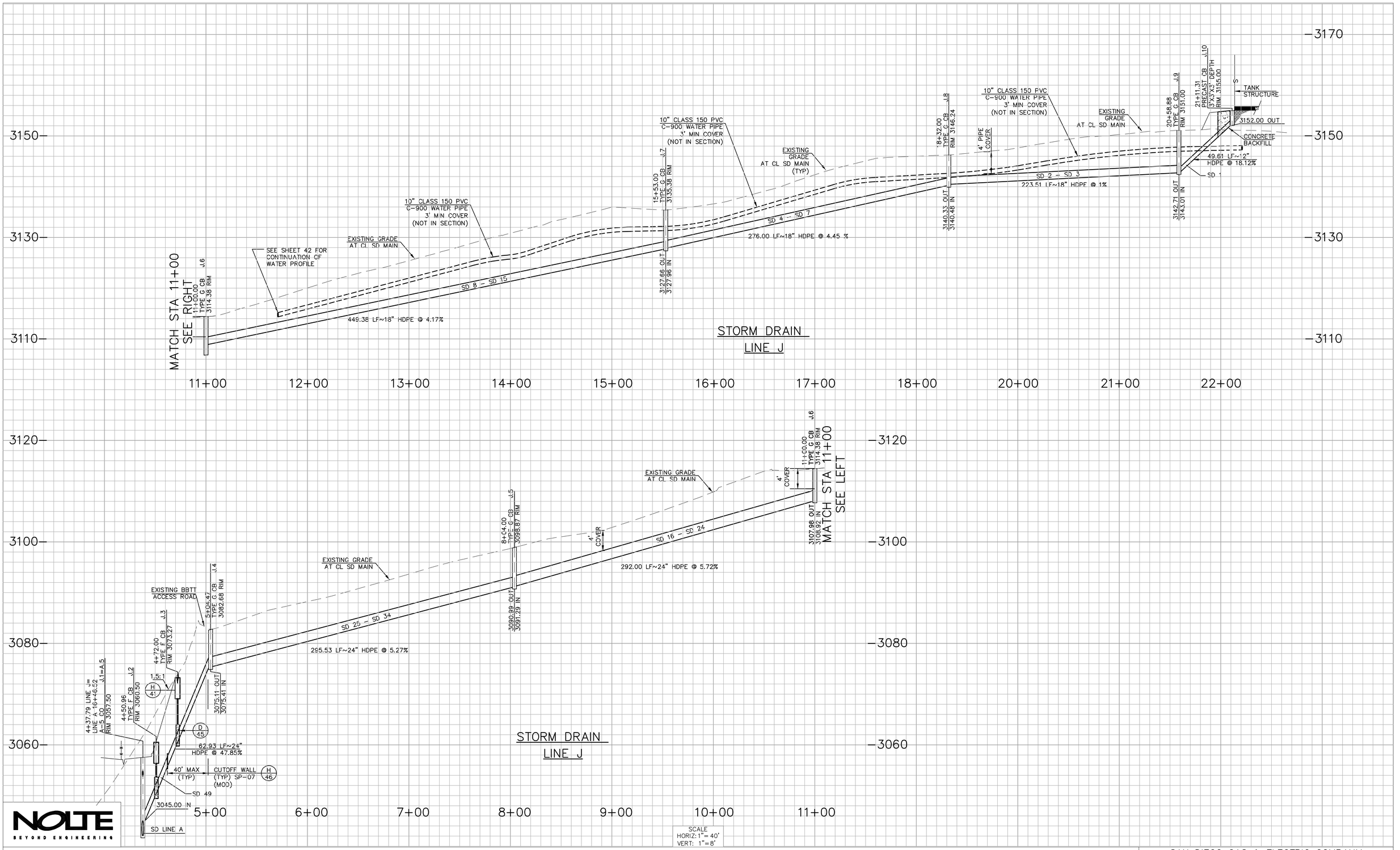
SUNCREST SUBSTATION

STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/30/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | SCR-C-021 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 21 OF 66 | | | |
| CAD NO.: GP21 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBO39600\CADD\USFS\CIVIL\GP\GP21




SCALE
HORIZ: 1" = 40'
VERT: 1" = 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

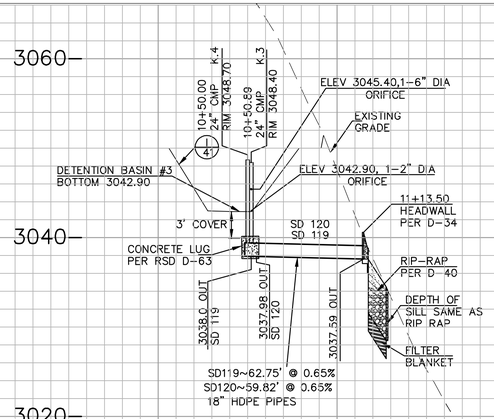
SUNCREST SUBSTATION

STORM DRAIN PROFILES

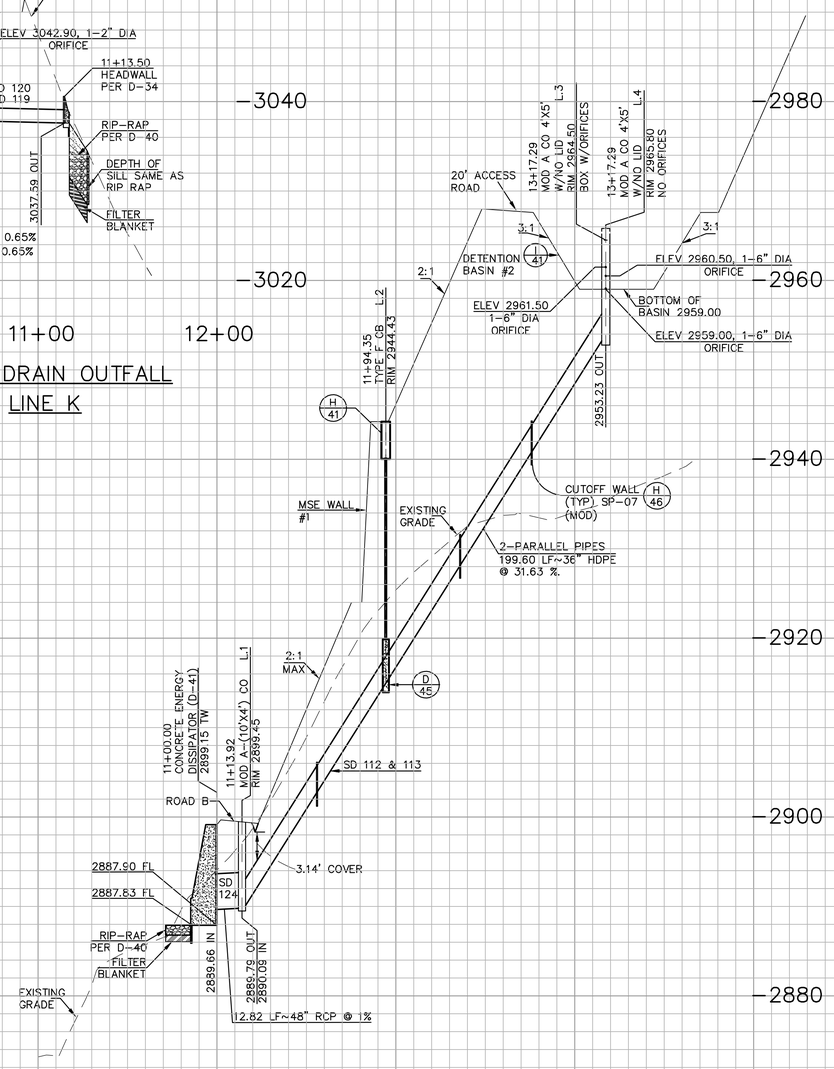
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/30/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 22 OF 66 | | | SCR-C-022 |
| CAD NO.: GP22 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

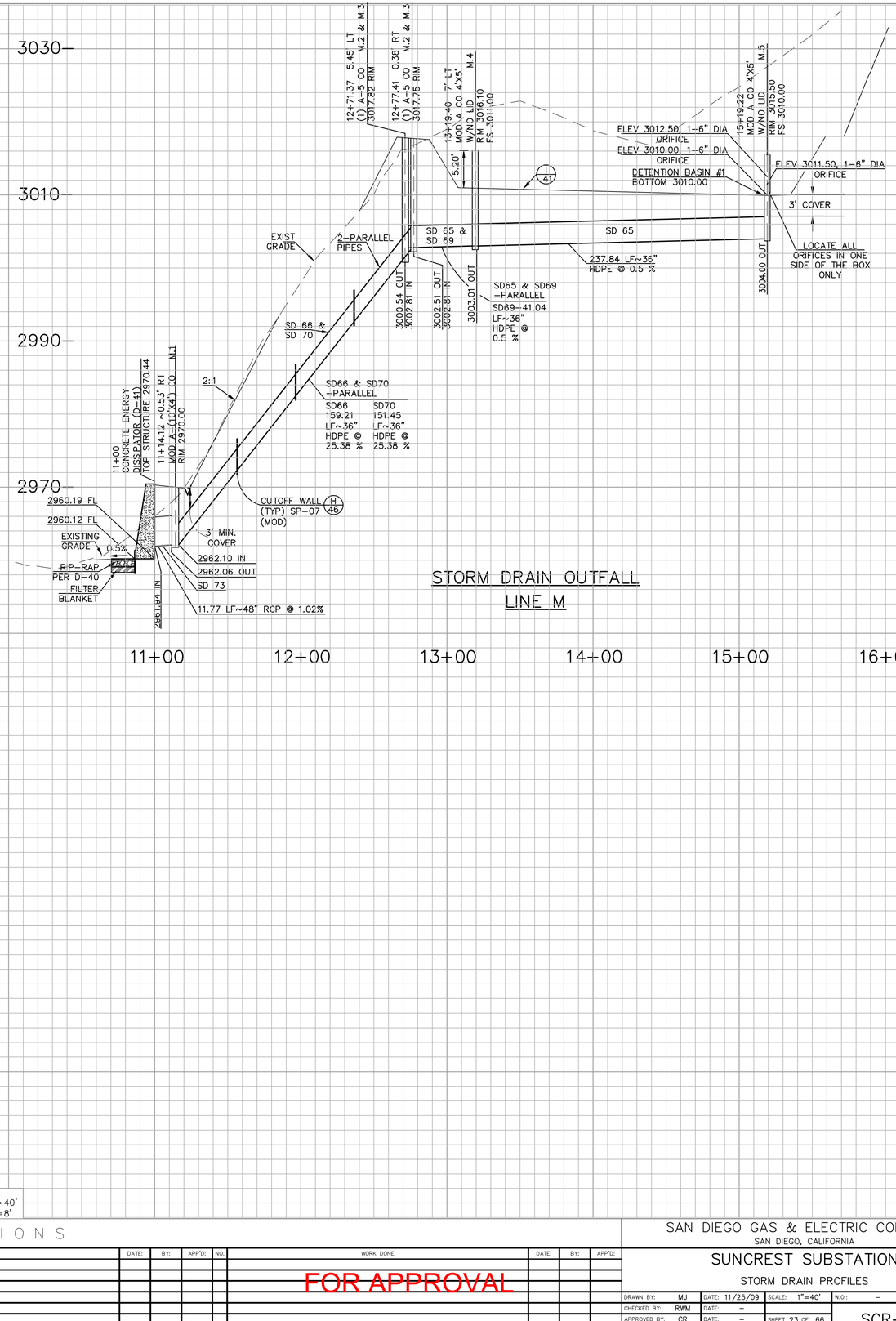
N:\SDB039600\CADD\USFS\CIVIL\GP\GP22
XREFS:




STORM DRAIN OUTFALL
LINE K




STORM DRAIN OUTFALL
LINE L




STORM DRAIN OUTFALL
LINE M

SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

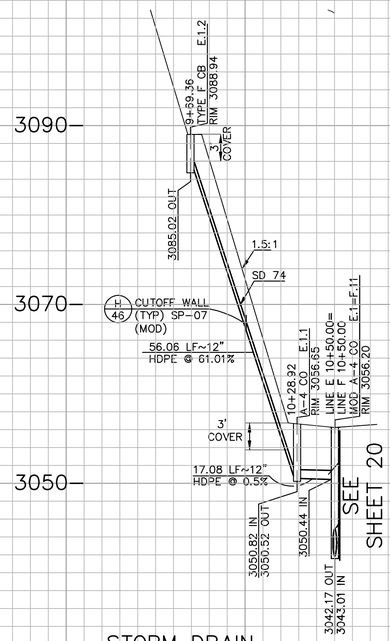
SUNCREST SUBSTATION

STORM DRAIN PROFILES

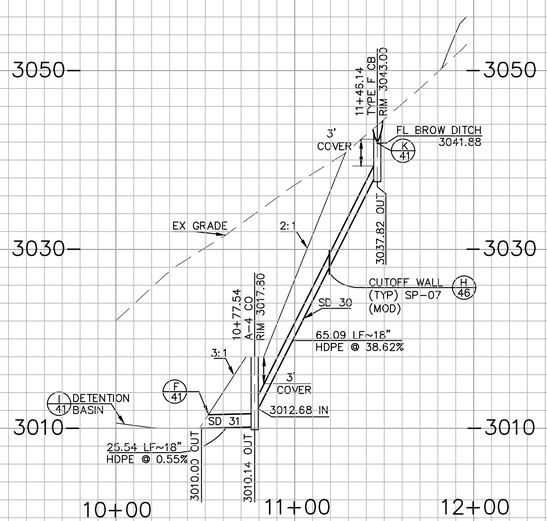
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 23 OF 66 | | | SCR-C-023 |
| CAD NO.: GP23 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

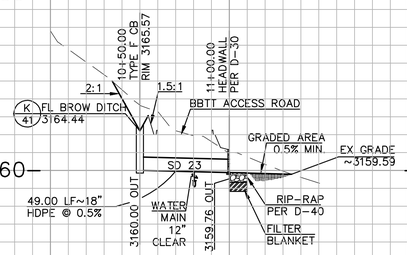
N:\SDB039600\CADD\USFS\CIVIL\GP\GP23
XREFS:



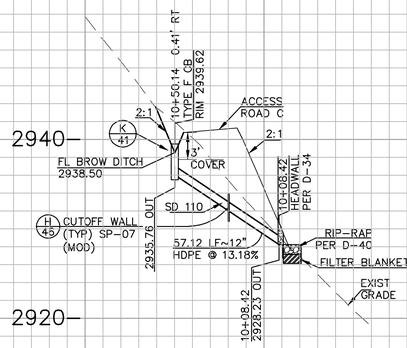

STORM DRAIN
LATERAL 74 & 90



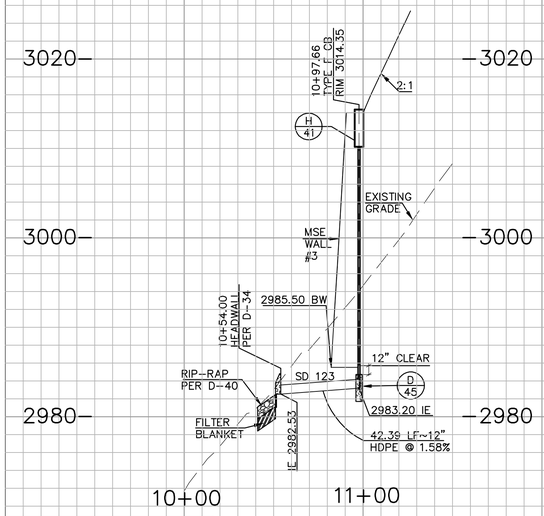

STORM DRAIN
LATERAL 30 & 31




STORM DRAIN
CULVERT 1
SD 23




STORM DRAIN
CULVERT 2
SD 110




STORM DRAIN
LATERAL 123

SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

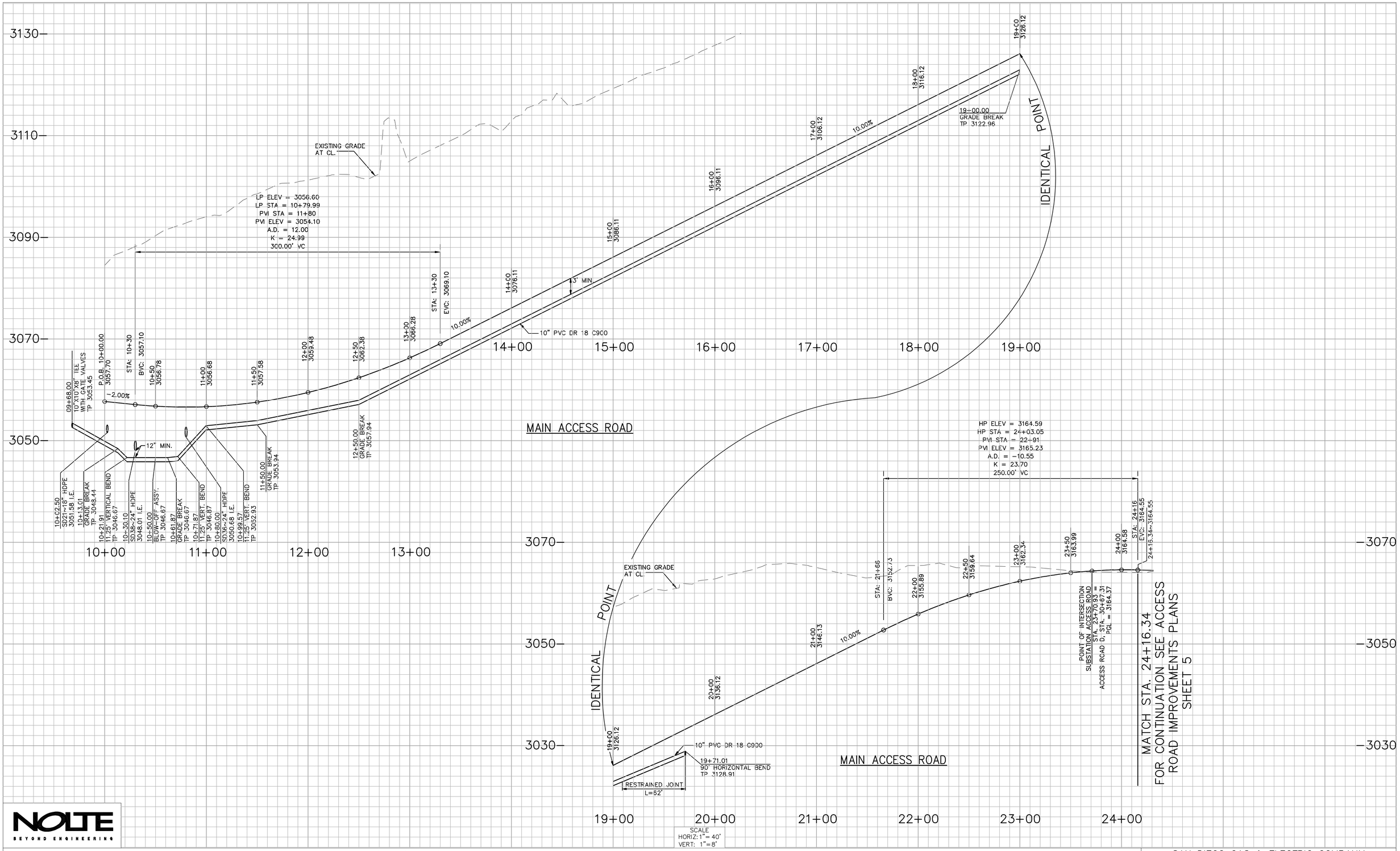
SUNCREST SUBSTATION

STORM DRAIN PROFILES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/30/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | SCR-C-024 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 24 OF 66 | | | |
| CAD NO.: GP24 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP24
XREFS:




SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

N:\SDB039600\CADD\USFS\CIVIL\GP\GP25

REVISIONS

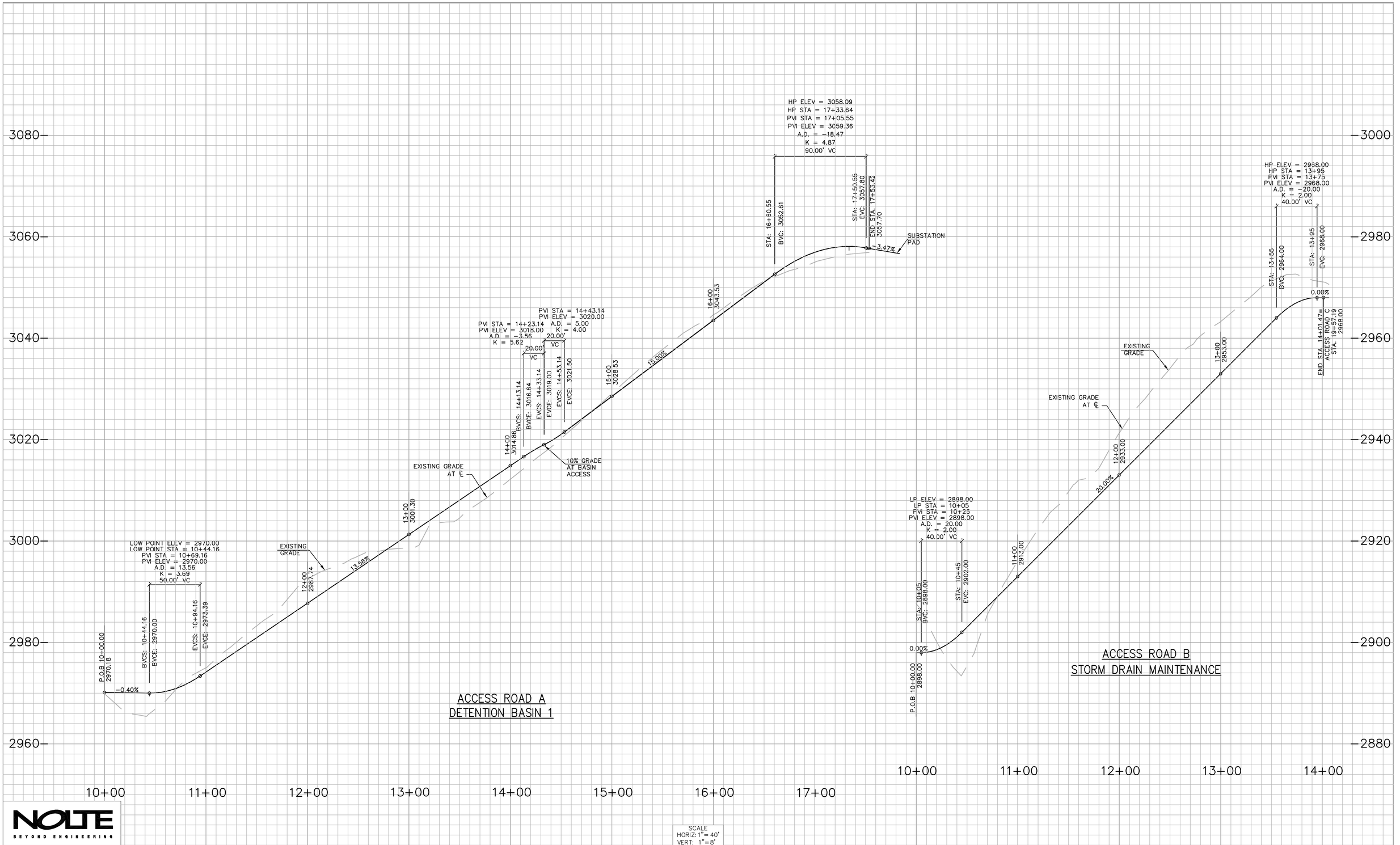
| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
ACCESS ROAD PROFILE–MAIN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/19/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | SCR–C–025 |
| APPROVED BY: CR | DATE: – | SHEET 25 OF 66 | | | |
| CAD NO.: GP25 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09




SCALE
HORIZ: 1"= 40'
VERT: 1"= 8'

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

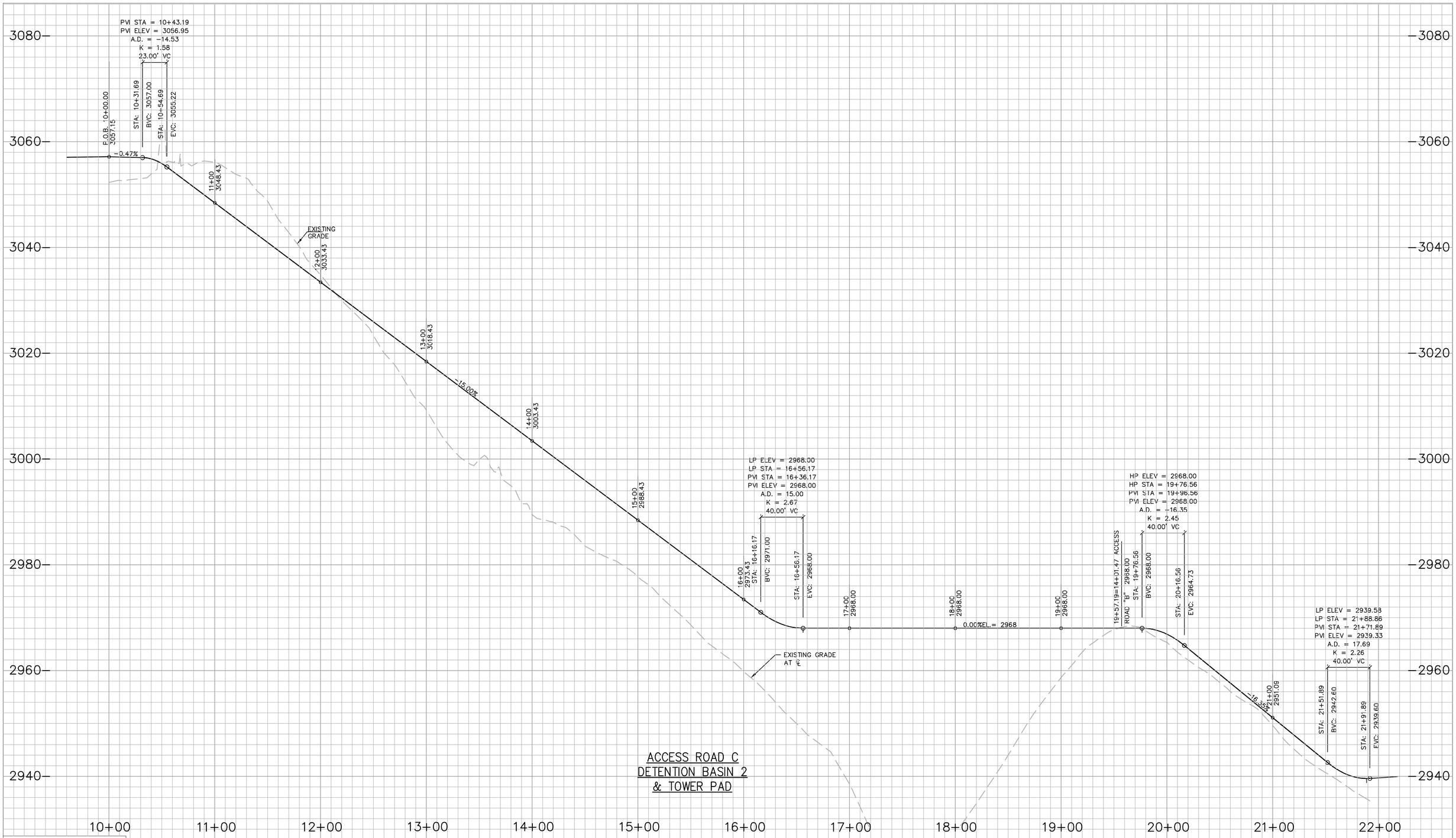
SUNCREST SUBSTATION

ACCESS ROAD PROFILES "A" AND "B"

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/18/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 26 OF 66 | | SCR-C-026 |
| CAD NO.: | GP26 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBO3960O\CADD\USFS\CIVIL\GP\GP26
XREFS:




ACCESS ROAD C
DETENTION BASIN 2
& TOWER PAD

SCALE
HORIZ: 1"= 40'
VERT: 1"=8'

NOLTE
BEYOND ENGINEERING

N:\SDBD39600\CADD\USFS\CIVIL\GP\GP27
XREFS:

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

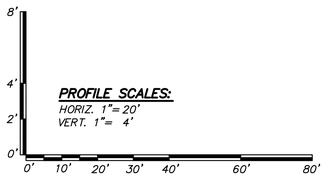
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

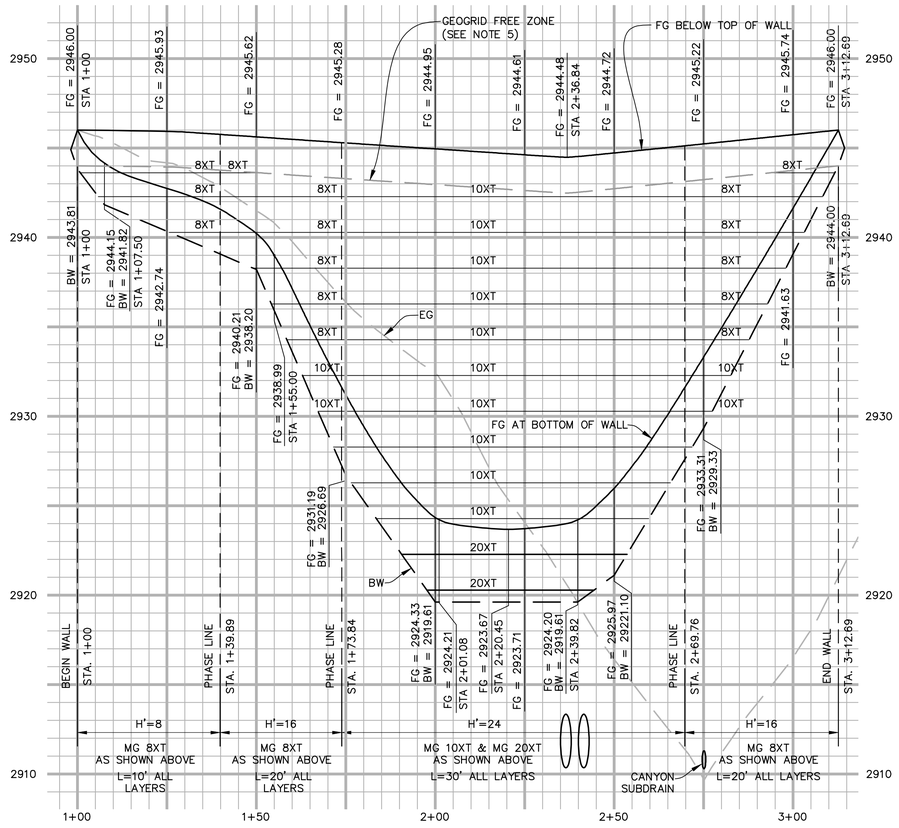
SUNCREST SUBSTATION

ACCESS ROAD PROFILE "C"

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/23/09 | SCALE: 1"=40' | W.O.: – | REV.: 0 | SCR–C–027 | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 27 OF 66 | | | | |
| CAD NO.: | GP27 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09




## WALL 1 PROFILE

**STA. 1+00 TO 3+12.69**

## LEGEND

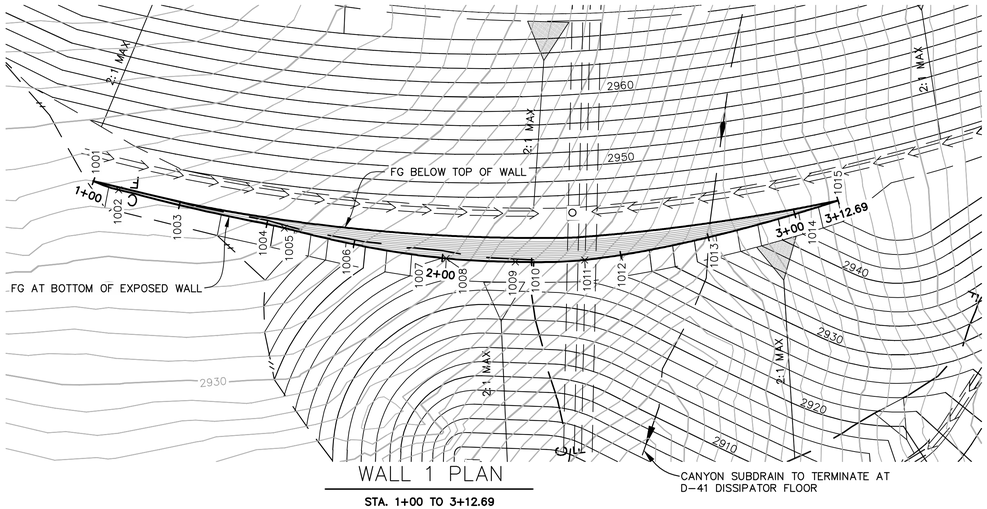
| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{EMB}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 + | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.

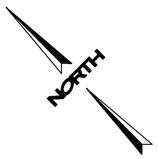
## HORIZONTAL CONTROL TABLE

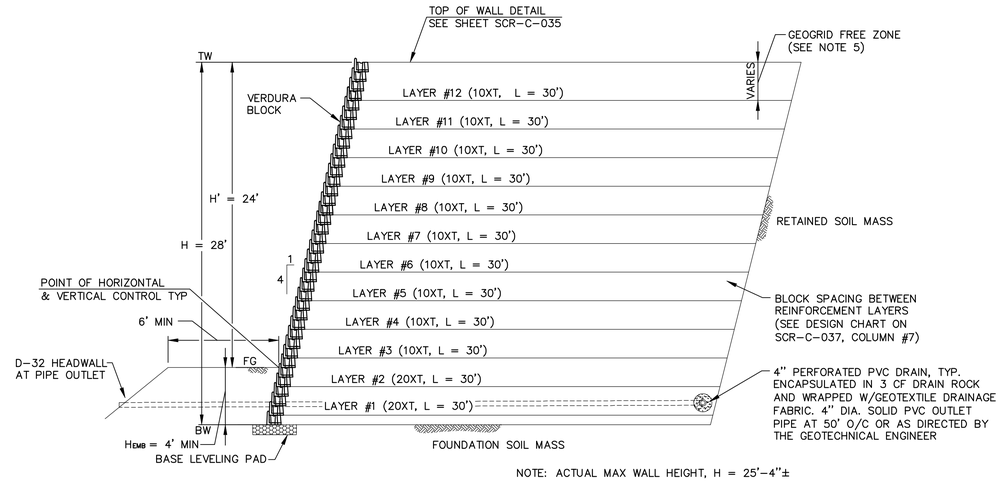
| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1001 | 1873291.6760 | 6427757.8381 | 2946.00 | 1+00.00 |
| 1002 | 1873285.0051 | 6427761.2397 | 2944.15 | 1+07.50 |
| 1003 | 1873270.0920 | 6427770.3930 | 2942.74 | 1+25.00 |
| 1004 | 1873249.2289 | 6427784.1655 | 2940.21 | 1+50.00 |
| 1005 | 1873245.0343 | 6427786.8851 | 2938.99 | 1+55.00 |
| 1006 | 1873228.1958 | 6427797.6735 | 2931.19 | 1+75.00 |
| 1007 | 1873208.2212 | 6427812.6891 | 2924.33 | 2+00.00 |
| 1008 | 1873207.3855 | 6427813.3732 | 2924.21 | 2+01.08 |
| 1009 | 1873193.2126 | 6427826.5690 | 2923.67 | 2+20.45 |
| 1010 | 1873190.0192 | 6427829.8101 | 2923.71 | 2+25.00 |
| 1011 | 1873180.0613 | 6427840.7773 | 2924.20 | 2+39.82 |
| 1012 | 1873174.0223 | 6427848.9724 | 2925.97 | 2+50.00 |
| 1013 | 1873160.4937 | 6427869.9883 | 2933.31 | 2+75.00 |
| 1014 | 1873148.2825 | 6427891.7993 | 2941.63 | 3+00.00 |
| 1015 | 1873142.5563 | 6427903.1234 | 2946.00 | 3+12.69 |




## WALL 1 PLAN

**STA. 1+00 TO 3+12.69**




NOTE: ACTUAL MAX WALL HEIGHT, H = 25'-4"±
MAX DESIGN WALL HEIGHT, H = 28'

## WALL 1 MAX DESIGN SECTION

**NOT TO SCALE**

NOLTE BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

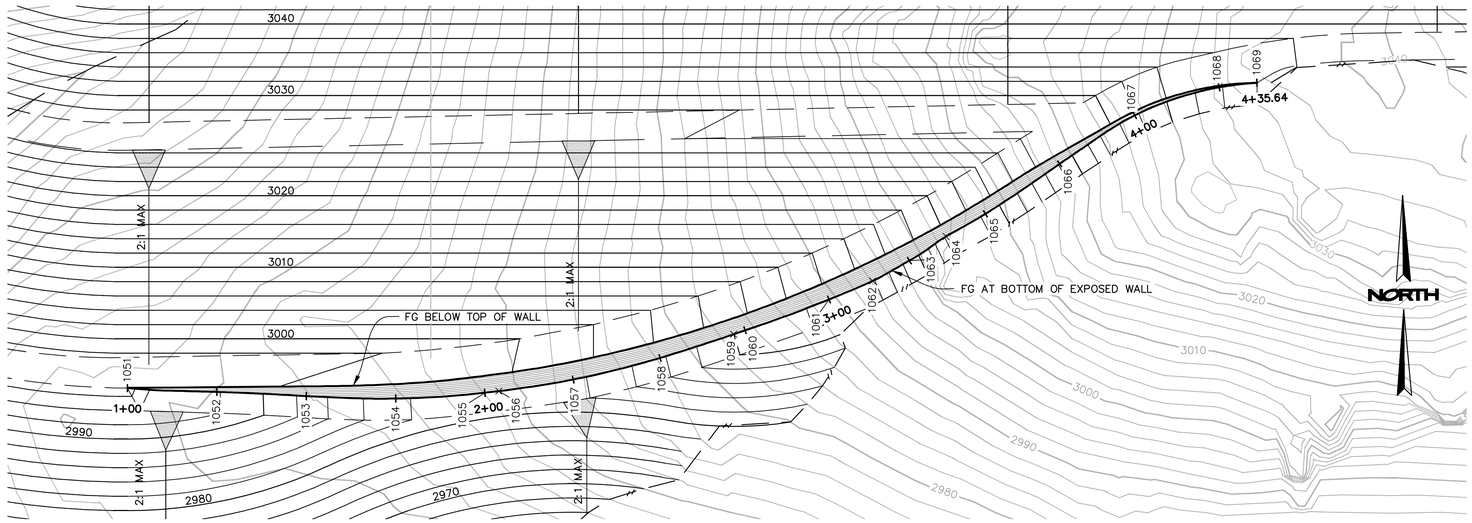
SUNCREST SUBSTATION

MSE WALL PLAN AND PROFILE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/25/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 | SCR-C-028 | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 28 OF 66 | | | | |
| CAD NO.: | GP28 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG39600\CADD\SFS\CIVIL\GP\GP28
XREFS:




## WALL 2 PLAN

**STA. 1+00 TO 4+35.64**

## HORIZONTAL CONTROL TABLE

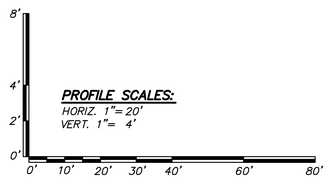
| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1051 | 1873302.7702 | 6428162.8840 | 2997.74 | 1+00.00 |
| 1052 | 1873301.7053 | 6428187.9121 | 2992.04 | 1+25.00 |
| 1053 | 1873300.5128 | 6428212.8833 | 2987.38 | 1+50.00 |
| 1054 | 1873299.8407 | 6428237.8725 | 2982.63 | 1+75.00 |
| 1055 | 1873301.4700 | 6428262.8004 | 2980.81 | 2+00.00 |
| 1056 | 1873301.9199 | 6428266.6945 | 2980.78 | 2+03.92 |
| 1057 | 1873305.1678 | 6428287.5074 | 2981.65 | 2+25.00 |
| 1058 | 1873311.1871 | 6428311.7609 | 2985.65 | 2+50.00 |
| 1059 | 1873317.8206 | 6428332.3482 | 2989.89 | 2+71.67 |
| 1060 | 1873318.9028 | 6428335.5382 | 2990.28 | 2+75.00 |
| 1061 | 1873327.5323 | 6428358.9946 | 2992.66 | 3+00.00 |
| 1062 | 1873332.7085 | 6428371.1777 | 2994.13 | 3+13.29 |
| 1063 | 1873338.4025 | 6428381.4544 | 2998.81 | 3+25.00 |
| 1064 | 1873345.1611 | 6428391.6997 | 3005.94 | 3+37.31 |
| 1065 | 1873351.4665 | 6428402.7295 | 3008.51 | 3+50.00 |
| 1066 | 1873365.4461 | 6428423.4521 | 3018.21 | 3+75.00 |
| 1067 | 1873379.0129 | 6428444.4232 | 3027.57 | 4+00.00 |
| 1068 | 1873386.8785 | 6428468.0615 | 3033.75 | 4+25.00 |
| 1069 | 1873388.1270 | 6428478.6237 | 3037.13 | 4+35.64 |

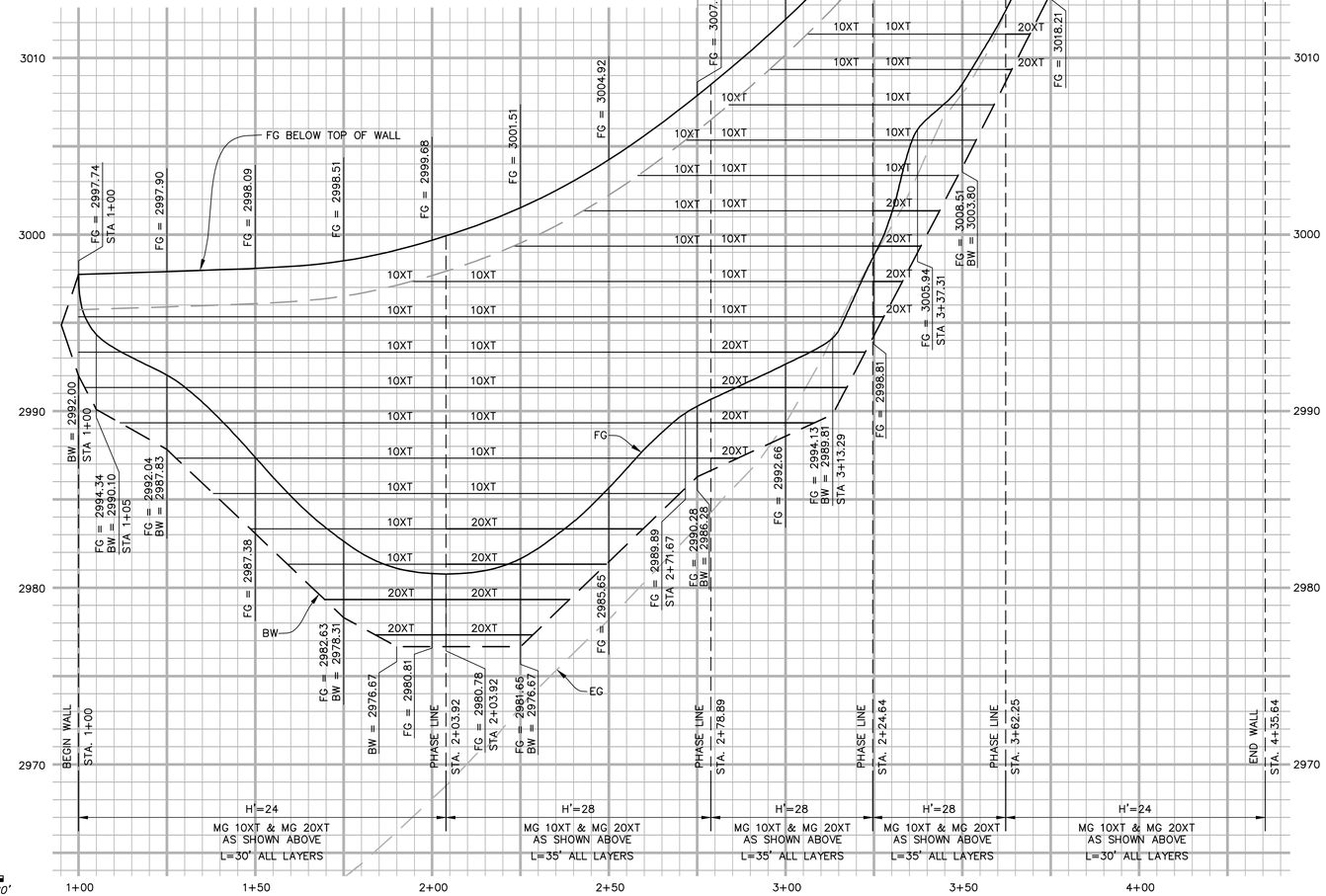
## LEGEND

| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{EMB}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 + | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.
7. FOR WALL 2 MAX DESIGN SECTION, SEE SHEET SCR-C-037.




## WALL 2 PROFILE

**STA. 1+00 TO 4+35.64**

NOLTE BEYOND ENGINEERING

N:\SDI039600\CADD\USFS\CIVIL\GP\GP29 XREFS:

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

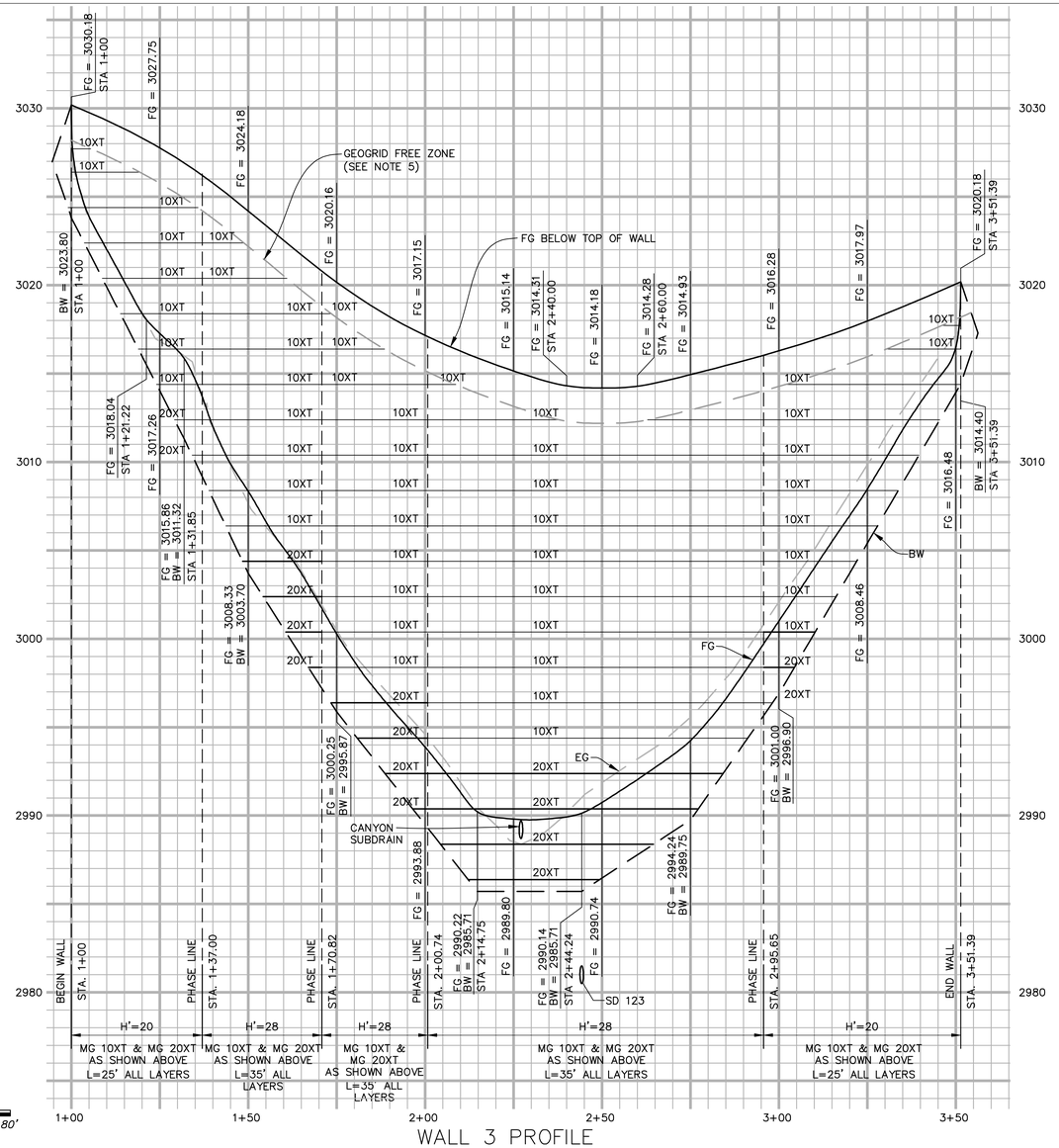
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

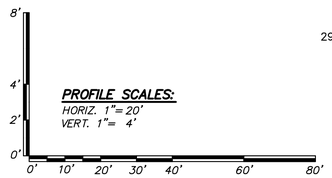
SUNCREST SUBSTATION

MSE WALL 2 PLAN/PROFILE

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/16/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 29 OF 66 | SCR-C-029 | |
| CAD NO.: | GP29 | PLOT SCALE: 1=1 | | | |

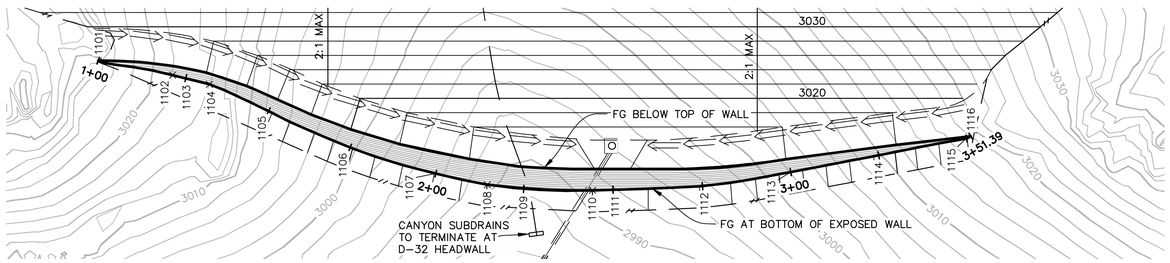
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09




## WALL 3 PROFILE

**STA. 1+00 TO 3+51.39**




## WALL 3 PLAN

**STA. 1+00 TO 3+51.39**

NORTH

## LEGEND

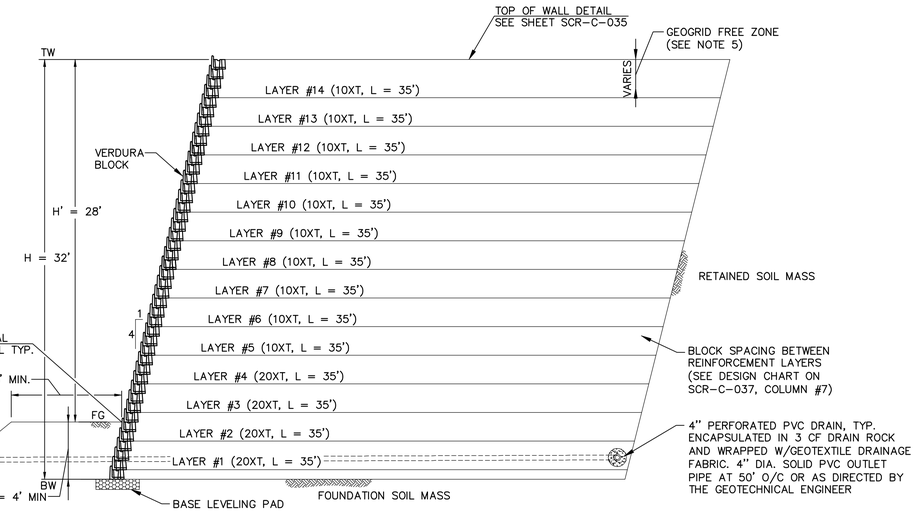
| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{DB}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.

## HORIZONTAL CONTROL TABLE

| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1101 | 1873367.0545 | 6428584.7716 | 3030.18 | 1+00.00 |
| 1102 | 1873363.0240 | 6428605.5935 | 3018.04 | 1+21.22 |
| 1103 | 1873362.1937 | 6428609.2607 | 3017.26 | 1+25.00 |
| 1104 | 1873360.4448 | 6428615.8825 | 3015.86 | 1+31.85 |
| 1105 | 1873352.9621 | 6428632.4061 | 3008.33 | 1+50.00 |
| 1106 | 1873342.7871 | 6428655.2286 | 3000.25 | 1+75.00 |
| 1107 | 1873335.5141 | 6428679.1272 | 2993.88 | 2+00.00 |
| 1108 | 1873332.3892 | 6428693.5406 | 2990.22 | 2+14.75 |
| 1109 | 1873331.2029 | 6428703.7173 | 2989.80 | 2+25.00 |
| 1110 | 1873330.8124 | 6428722.9385 | 2990.14 | 2+44.24 |
| 1111 | 1873330.9904 | 6428728.6958 | 2990.74 | 2+50.00 |
| 1112 | 1873332.0167 | 6428753.6720 | 2994.24 | 2+75.00 |
| 1113 | 1873335.9432 | 6428778.3488 | 3001.00 | 3+00.00 |
| 1114 | 1873340.6129 | 6428802.9087 | 3008.46 | 3+25.00 |
| 1115 | 1873345.2899 | 6428827.4662 | 3016.48 | 3+50.00 |
| 1116 | 1873345.9424 | 6428828.6796 | 3020.18 | 3+51.39 |




NOTE: ACTUAL MAX WALL HEIGHT, H = 30'-0"±
MAX DESIGN WALL HEIGHT, H = 32'

## WALL 3 MAX DESIGN SECTION

**NOT TO SCALE**

NOLTE
BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

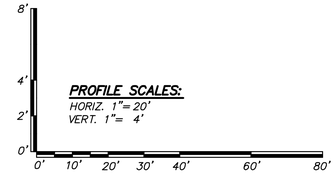
SUNCREST SUBSTATION

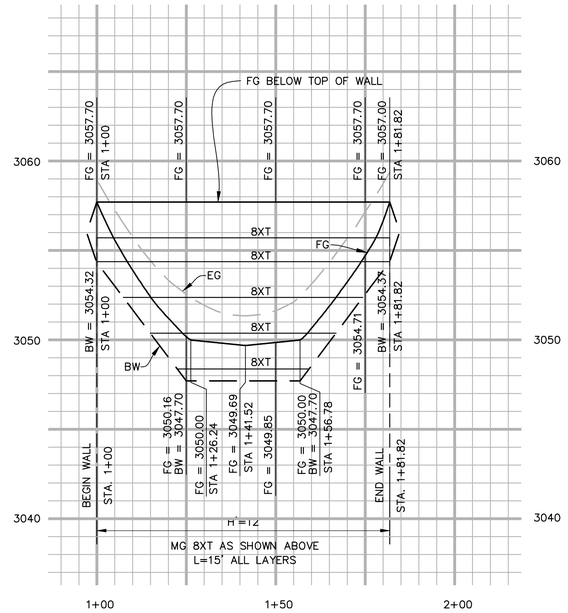
MSE WALL 3 PLAN/PROFILE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/25/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 30 OF 66 | | | SCR-C-030 | |
| CAD NO.: | GP30 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CAD\USFS\CIVIL\GP\GP30
XREFS:




## WALL 4 PROFILE

**STA. 1+00 TO 1+81.82**

## LEGEND

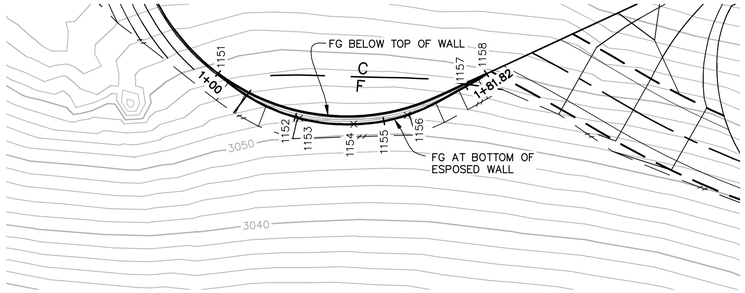
| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{EMB}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 + | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.

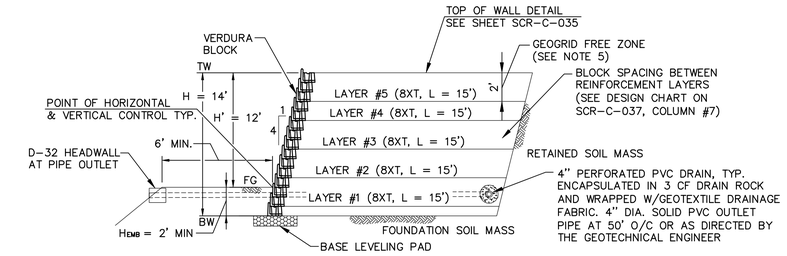
## HORIZONTAL CONTROL TABLE

| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1151 | 1873447.0640 | 6429079.1019 | 3057.70 | 1+00.00 |
| 1152 | 1873461.5246 | 6429099.2068 | 3050.16 | 1+25.00 |
| 1153 | 1873462.4590 | 6429100.0208 | 3050.00 | 1+26.24 |
| 1154 | 1873475.5061 | 6429107.8673 | 3049.69 | 1+41.52 |
| 1155 | 1873483.5131 | 6429110.6353 | 3049.85 | 1+50.00 |
| 1156 | 1873490.1792 | 6429111.8532 | 3050.00 | 1+56.78 |
| 1157 | 1873508.3648 | 6429111.4272 | 3054.71 | 1+75.00 |
| 1158 | 1873515.1348 | 6429110.6798 | 3057.70 | 1+81.82 |


## WALL 4 PLAN

**STA. 1+00 TO 1+81.82**




NOTE: ACTUAL MAX WALL HEIGHT, H = 10'-0"±
MAX DESIGN WALL HEIGHT, H = 14'

## WALL 4 MAX DESIGN SECTION

**NOT TO SCALE**

NOLTE
BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

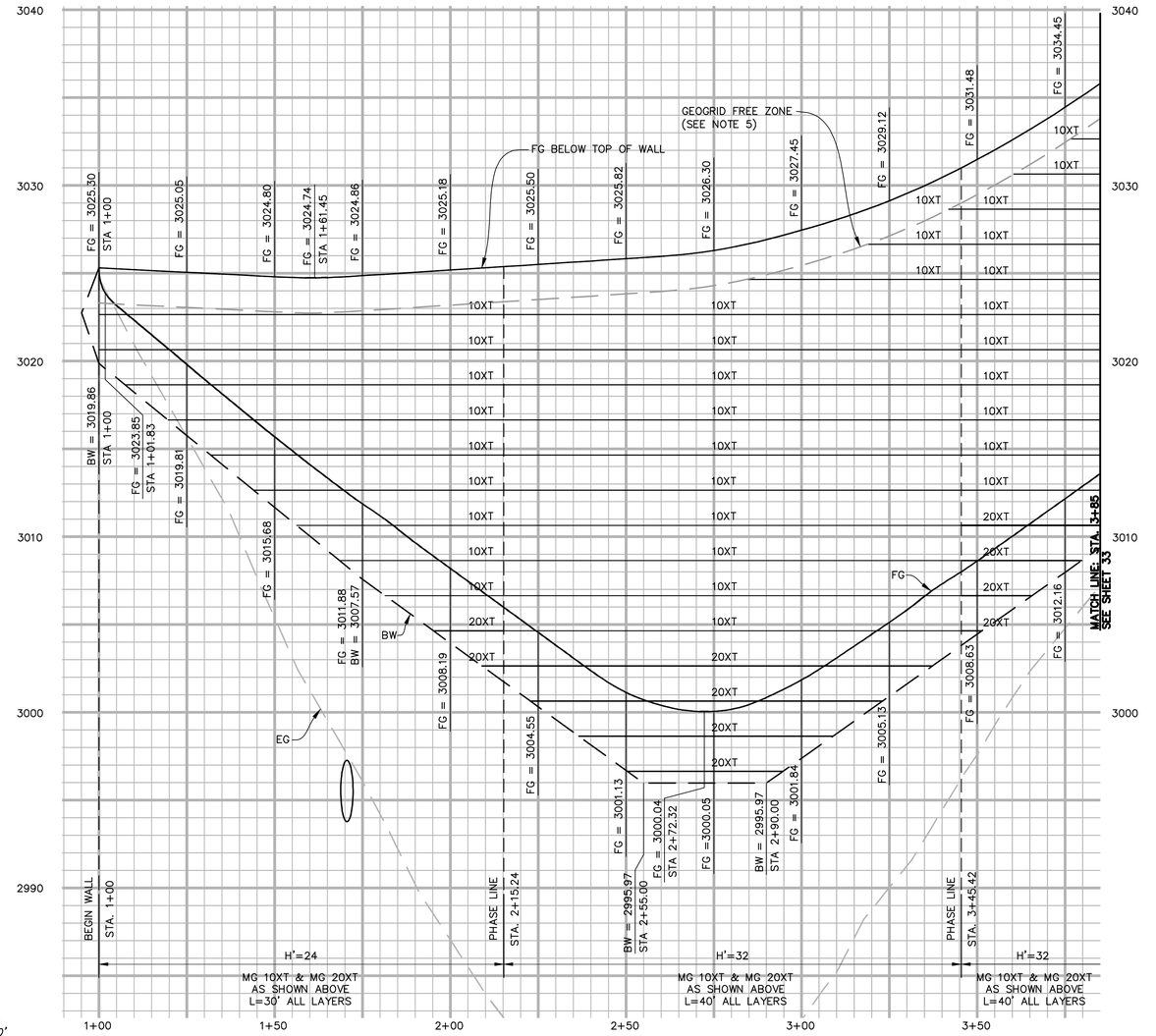
SUNCREST SUBSTATION

MSE WALL 4 PLAN/PROFILE

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/25/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 31 OF 66 | | SCR-C-031 |
| CAD NO.: | GP31 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBD39600\CADD\USFS\CIVIL\GP\GP31
XREFS:

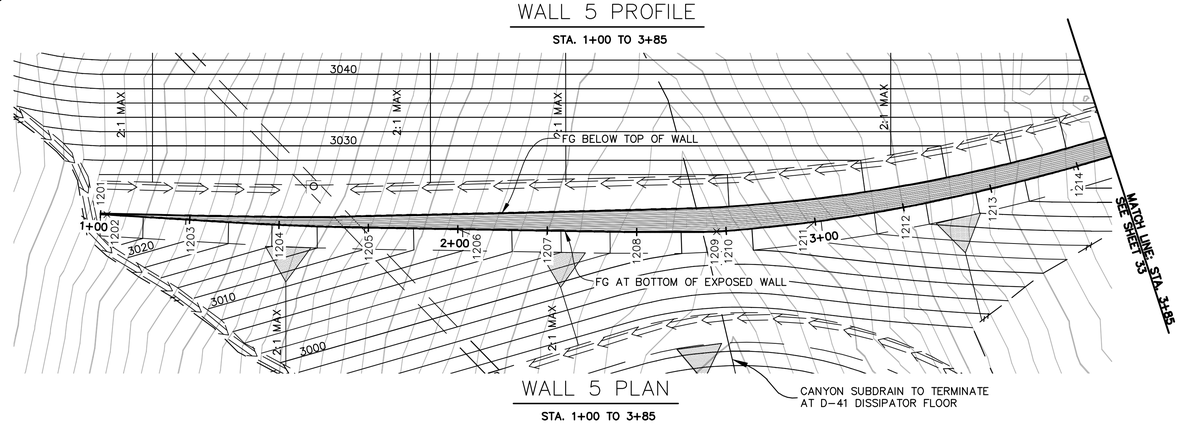



## WALL 5 PROFILE

STA. 1+00 TO 3+85

8'
4'
2'
0'
0' 10' 20' 30' 40' 60' 80'

**PROFILE SCALES:**
HORIZ. 1"= 20'
VERT. 1"= 4'




## WALL 5 PLAN

STA. 1+00 TO 3+85

NORTH

## LEGEND

| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{DES}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 + | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE WALL AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.
7. FOR WALL 5 MAX DESIGN SECTION, SEE SHEET SCR-C-037.

## HORIZONTAL CONTROL TABLE

| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1201 | 1875132.7949 | 6428029.1903 | 3025.30 | 1+00.00 |
| 1202 | 1875130.9684 | 6428029.0773 | 3023.85 | 1+01.83 |
| 1203 | 1875107.8427 | 6428027.6444 | 3019.81 | 1+25.00 |
| 1204 | 1875082.8837 | 6428026.2209 | 3015.68 | 1+50.00 |
| 1205 | 1875057.8971 | 6428025.4321 | 3011.88 | 1+75.00 |
| 1206 | 1875032.9007 | 6428025.0147 | 3008.19 | 2+00.00 |
| 1207 | 1875007.9041 | 6428024.6040 | 3004.55 | 2+25.00 |
| 1208 | 1874982.9069 | 6428024.2299 | 3001.13 | 2+50.00 |
| 1209 | 1874960.5877 | 6428024.3552 | 3000.04 | 2+72.32 |
| 1210 | 1874957.9169 | 6428025.5763 | 3000.05 | 2+75.00 |
| 1211 | 1874933.0519 | 6428027.1433 | 3001.84 | 3+00.00 |
| 1212 | 1874908.3736 | 6428031.1193 | 3005.13 | 3+25.00 |
| 1213 | 1874883.9315 | 6428036.3599 | 3008.63 | 3+50.00 |
| 1214 | 1874859.7420 | 6428042.6660 | 3012.16 | 3+75.00 |

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

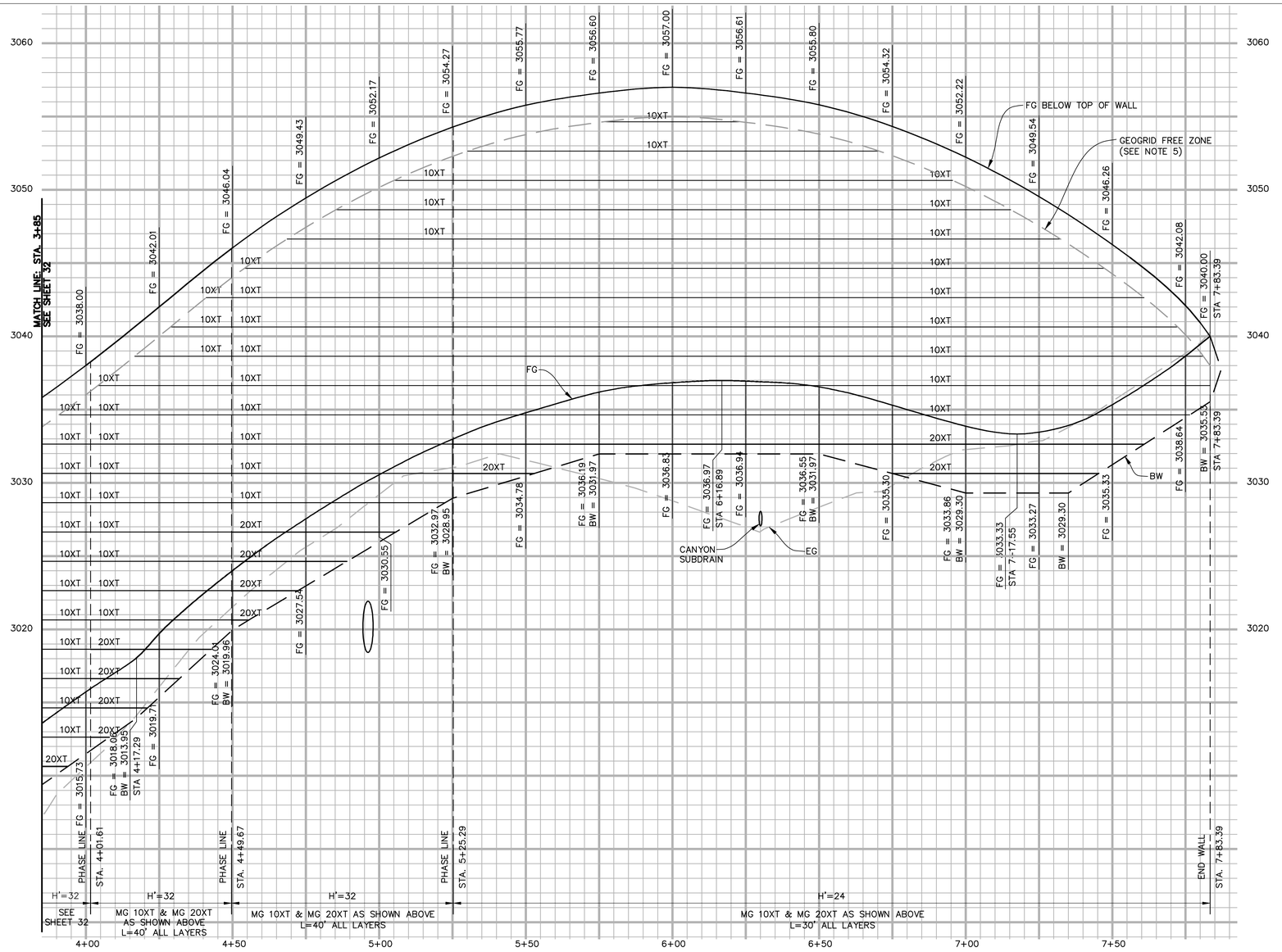
SUNCREST SUBSTATION

MSE WALL 5 PLAN/PROFILE

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/25/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 32 OF 66 | SCR-C-032 | |
| CAD NO.: | GP32 | PLOT SCALE: | 1=1 | | |

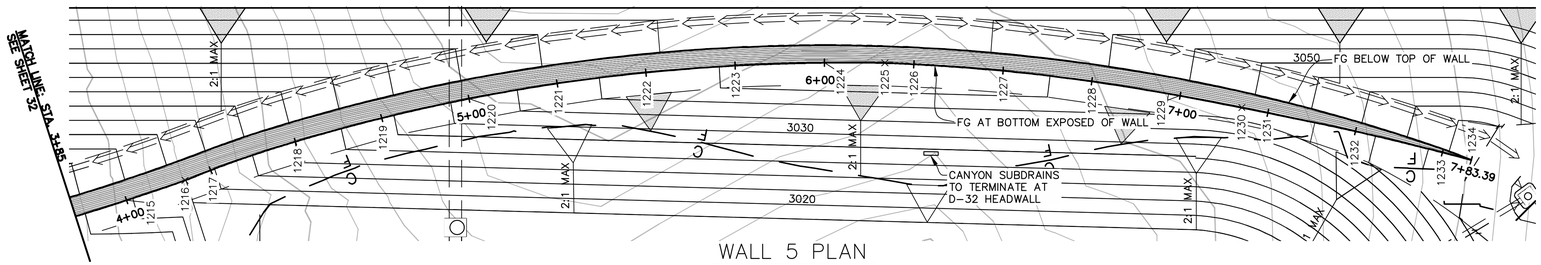
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDGE039600\C400\USFS\CIVIL\GP\GP32
XREFS:



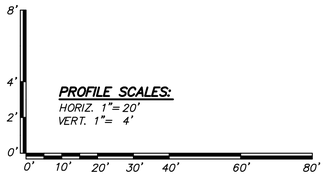

## WALL 5 PROFILE

**STA. 3+85 TO 7+83.39**




## WALL 5 PLAN

**STA. 3+60 TO 7+83.39**




## LEGEND

| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | GEOGRID LENGTH |
| H | TOTAL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{EMB}$ | WALL EMBEDMENT DESIGN HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |
| 1002 × | HORIZONTAL CONTROL POINT |
| 1003 + | HORIZONTAL CONTROL POINT AT ALIGNMENT STATION |

## NOTES

1. THIS SHEET IS NOT A GRADING PLAN. SEE GRADING PLANS FOR MORE INFORMATION.
2. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
3. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
4. SEE CIVIL PLANS FOR TYP. DRAINAGE DETAILS.
5. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES BELOW FINISH GRADE AND NO FURTHER THAN FIVE COURSES.
6. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.
7. FOR WALL 5 MAX DESIGN SECTION, SEE SHEET SCR-C-037.

## HORIZONTAL CONTROL TABLE

| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1215 | 1874835.8384 | 6428049.9820 | 3015.73 | 4+00.00 |
| 1216 | 1874819.4685 | 6428055.5453 | 3018.06 | 4+17.29 |
| 1217 | 1874812.2918 | 6428058.3625 | 3019.71 | 4+25.00 |
| 1218 | 1874788.6132 | 6428066.3605 | 3024.01 | 4+50.00 |
| 1219 | 1874764.4911 | 6428072.9178 | 3027.54 | 4+75.00 |
| 1220 | 1874740.0880 | 6428078.3346 | 3030.55 | 5+00.00 |
| 1221 | 1874715.4579 | 6428082.6037 | 3032.97 | 5+25.00 |
| 1222 | 1874690.6451 | 6428085.6317 | 3034.78 | 5+50.00 |
| 1223 | 1874665.7250 | 6428087.5958 | 3036.19 | 5+75.00 |
| 1224 | 1874640.7398 | 6428088.4010 | 3036.83 | 6+00.00 |
| 1225 | 1874623.8504 | 6428088.3538 | 3036.97 | 6+16.89 |
| 1226 | 1874615.7492 | 6428087.9791 | 3036.94 | 6+25.00 |
| 1227 | 1874590.8177 | 6428089.1554 | 3036.55 | 6+50.00 |
| 1228 | 1874565.9961 | 6428083.1994 | 3035.30 | 6+75.00 |
| 1229 | 1874541.3201 | 6428079.2080 | 3033.86 | 7+00.00 |
| 1230 | 1874524.0884 | 6428075.8809 | 3033.33 | 7+17.55 |
| 1231 | 1874516.7893 | 6428074.3891 | 3033.27 | 7+25.00 |
| 1232 | 1874492.3237 | 6428069.2505 | 3035.33 | 7+50.00 |
| 1233 | 1874468.0295 | 6428063.3572 | 3038.64 | 7+75.00 |
| 1234 | 1874459.9219 | 6428061.2184 | 3040.00 | 7+83.39 |

NORTH

NOLTE
BEYOND ENGINEERING

## REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

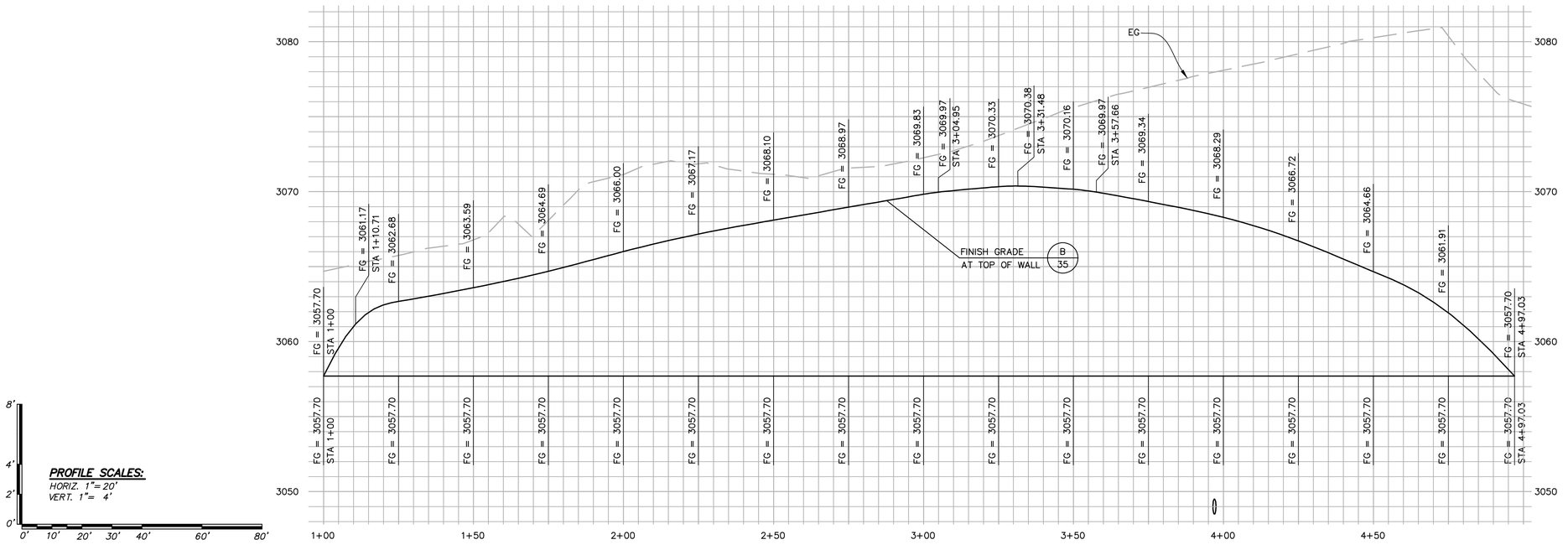
SUNCREST SUBSTATION

MSE WALL 5 PLAN/PROFILE

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/16/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 33 OF 66 | | SCR-C-033 |
| CAD NO.: | GP33 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP33
XREFS:

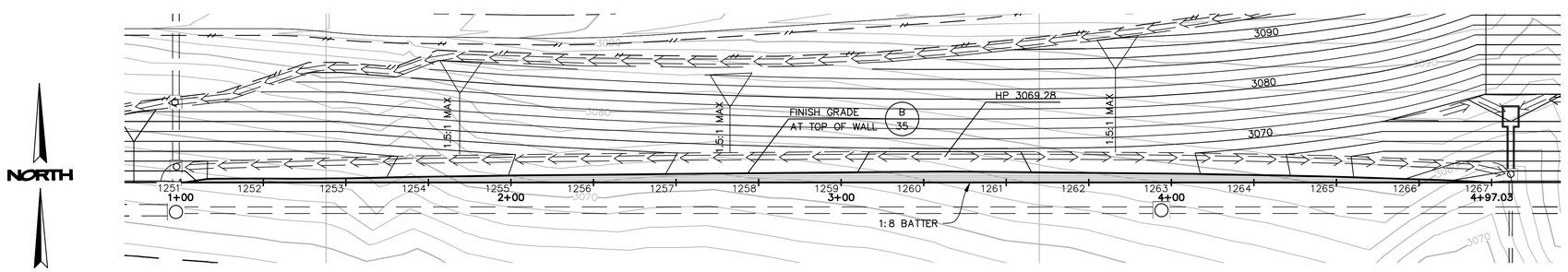



8'
4'
2'
0'
0' 10' 20' 30' 40' 60' 80'

***PROFILE SCALES:***
*HORIZ. 1"= 20'*
*VERT. 1"= 4'*

## SOIL NAIL WALL 1 PROFILE

**STA. 1+00 TO 4+97.03**




NORTH

## SOIL NAIL WALL 1 PLAN

**STA. 1+00 TO 4+97.03**

## LEGEND

| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| EG | EXISTING GRADE |
| L | LENGTH |
| H' | EXPOSED WALL HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |
| | FACE OF WALL |

## NOTES

1. THIS SHEET IS NOT INTENDED TO SERVE AS A GRADING PLAN

## HORIZONTAL CONTROL TABLE

| POINT | N | E | FG ELEV | STA |
|---|---|---|---|---|
| 1251 | 1875190.9051 | 6428390.6664 | 3057.70 | 1+00.00 |
| 1252 | 1875190.9051 | 6428415.6664 | 3057.70 | 1+25.00 |
| 1253 | 1875190.9051 | 6428440.6664 | 3057.70 | 1+50.00 |
| 1254 | 1875190.9051 | 6428465.6664 | 3057.70 | 1+75.00 |
| 1255 | 1875190.9051 | 6428490.6664 | 3057.70 | 2+00.00 |
| 1256 | 1875190.9051 | 6428515.6664 | 3057.70 | 2+25.00 |
| 1257 | 1875190.9051 | 6428540.6664 | 3057.70 | 2+50.00 |
| 1258 | 1875190.9051 | 6428565.6664 | 3057.70 | 2+75.00 |
| 1259 | 1875190.9051 | 6428590.6664 | 3057.70 | 3+00.00 |
| 1260 | 1875190.9051 | 6428615.6664 | 3057.70 | 3+25.00 |
| 1261 | 1875190.9051 | 6428640.6664 | 3057.70 | 3+50.00 |
| 1262 | 1875190.9051 | 6428665.6664 | 3057.70 | 3+75.00 |
| 1263 | 1875190.9051 | 6428690.6664 | 3057.70 | 4+00.00 |
| 1264 | 1875190.9051 | 6428715.6664 | 3057.70 | 4+25.00 |
| 1265 | 1875190.9051 | 6428740.6664 | 3057.70 | 4+50.00 |
| 1266 | 1875190.9051 | 6428765.6664 | 3057.70 | 4+75.00 |
| 1267 | 1875190.9051 | 6428787.6967 | 3057.70 | 4+97.03 |

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

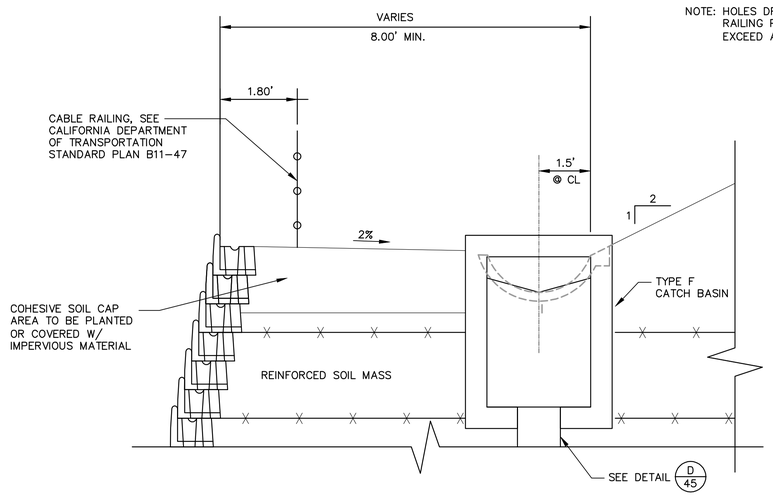
SUNCREST SUBSTATION

SOIL NAIL WALL PLAN AND PROFILE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/25/09 | SCALE: 1"=20' | W.O.: – | REV.: 0 | SCR-C-034 | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 34 OF 66 | | | | |
| CAD NO.: | GP34 | | PLOT SCALE: 1=1 | | | | |

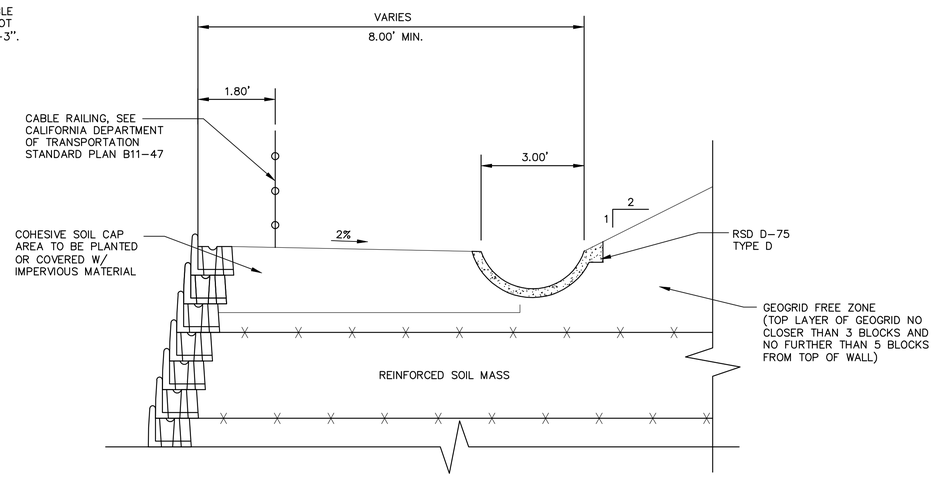
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBO39600\CADD\USFS\CIVIL\GP\GP34



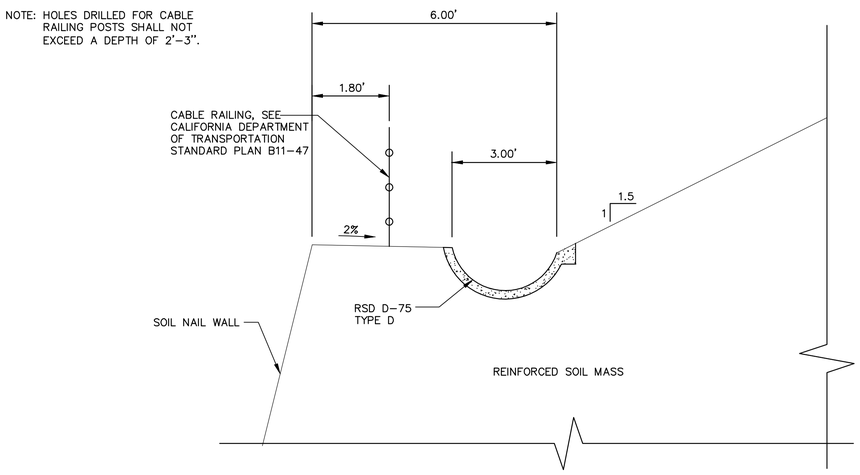

NOTE: HOLES DRILLED FOR CABLE RAILING POSTS SHALL NOT EXCEED A DEPTH OF 2'-3".

SECTION @ TYPE F CATCH BASIN




## (A) TOP OF MSE WALL TYPICAL SECTION

NO SCALE




NOTE: HOLES DRILLED FOR CABLE RAILING POSTS SHALL NOT EXCEED A DEPTH OF 2'-3".

## (B) TOP OF SOIL NAIL WALL TYPICAL SECTION

NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

WALL DETAILS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 35 OF 66 | | | SCR-C-035 | |
| CAD NO.: | GP35 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP35 XREFS

# NOTES

A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTING A VERDURA SEGMENTAL RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CONFORMITY WITH THE LINES, GRADES, TOLERANCES, DESIGN, AND DIMENSIONS SHOWN ON THESE PLANS.
B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD (IF REQUIRED), PLANTABLE SOIL UNIT FILL, AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
C. WORK INCLUDES FURNISHING AND INSTALLING GEOSYNTHETIC SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, STRENGTH AND LENGTHS DESIGNATED ON THESE PLANS.
D. WORK INCLUDES FURNISHING AND INSTALLING FOUNDATION DRAIN, SUBDRAIN AND OTHER WALL-RELATED DRAINAGE SYSTEMS THAT MAY BE SHOWN ON THESE PLANS.

REFERENCE DOCUMENTS

A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
1) ASTM C-1372-SPECIFICATION FOR SEGMENTAL RETAINING WALL UNITS
2) ASTM D-3080-DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS
3) ASTM D-1557-LABORATORY COMPACTION CHARACTERISTICS OF SOIL MODIFIED PROCTOR
4) ASTM D-4318-LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
5) ASTM D-4595-TENSILE PRIORITIES OF GEOTEXTILES - WIDE WIDTH STRIP
6) ASTM D-5262-UNCONFINED TENSION CREEP BEHAVIOR OF GEOSYNTHETICS
7) ASTM D-3034-POLYVINYL CHLORIDE PIPE (PVC)
8) ASTM D-4829-EXPANSION INDEX OF SOILS
9) ASTM C-140-STD. SPEC. FOR SAMPLING AND TESTING CONCRETE MASONRY UNITS
10) ASTM C-145-STD. SPEC. FOR SOLID LOAD BEARING CONCRETE MASONRY UNITS
B. GEOSYNTHETIC RESEARCH INSTITUTE (GRI)
1) GRI-GG4-DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEOGRIDS
2) GRI-GT7-DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEOTEXTILES
3) GRI-GG5-DETERMINATION OF GEOGRID (SOIL) PULLOUT
C. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
1) NCMA SRWU-1-TEST METHOD FOR DETERMINING CONNECTION STRENGTH OF SEGMENTAL RETAINING WALL UNITS
2) NCMA SRWU-2-TEST METHOD FOR DETERMINING SHEAR STRENGTH OF SRW UNITS
3) "DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, 2ND EDITION," (1997)
D. ICC EVALUATION SERVICES, INC. (FORMERLY INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO))
1) ICC ES ER-5515-VERDURA AND CANDURA SEGMENTAL RETAINING WALL SYSTEMS (DATED APRIL 1, 2007)

MODULAR CONCRETE RETAINING WALL UNITS

A. MODULAR CONCRETE UNITS SHALL BE VERDURA, AS INDICATED IN TABLE.
B. MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
C. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH SECTION 1.03 AND OTHER APPROPRIATE REFERENCES:
* COMPRESSIBLE STRENGTH = 4000 PSI MINIMUM AT 28 DAYS;
* MOISTURE ABSORPTION = 8% MAXIMUM FOR STANDARD WEIGHT AGGREGATES;
* BATTER = AS INDICATED IN TABLE 2.
* DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL UNIT DIMENSIONS (NOT INCLUDING EXPOSED AGGREGATE FACE TEXTURE), ±1/8" UNIT HEIGHT - TOP AND BOTTOM PLANES.

GEOSYNTHETIC-CONCRETE BLOCK CONNECTORS

A. CONNECTORS SHALL BE 1 INCH DIAMETER OR GREATER SCHEDULE 80 PIPE OR EQUIVALENT AND MUST BE CAPABLE OF PROVIDING POSITIVE MECHANICAL INTERLOCK BETWEEN GEOSYNTHETIC SOIL REINFORCEMENT MATERIAL AND BLOCK.
B. CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOSYNTHETIC SOIL REINFORCEMENT IN THE PROPER DESIGN POSITION DURING GEOSYNTHETIC PRE-TENSIONING AND BACKFILLING PROCEDURES

UNIT FILL

A. UNIT FILL SHALL CONSIST OF SOILS USED FOR WALL BACKFILL OR AS SPECIFIED BY THE PROJECT LANDSCAPE ARCHITECT.

SURFACE CONDITIONS

A. PRIOR TO WORK, CAREFULLY INSPECT PREVIOUS GRADING WORK. VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE.
B. VERIFY THAT WORK OF THIS SECTION MAY BE INSTALLED IN STRICT ACCORDANCE WITH THE ORIGINAL DESIGN, ALL PERTINENT CODES AND REGULATIONS.
C. VERIFY WALL DRAINAGE SYSTEM IS COORDINATED WITH POINTS OF CONNECTION TO STORM DRAINAGE SYSTEM OR OTHER PROPER DRAINAGE DEVICE.
D. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE SDG&E REPRESENTATIVE. DO NOT PROCEED WITH INSTALLATION UNTIL ALL SUCH DISCREPANCIES HAVE BEEN RESOLVED.

LAYOUT

A. VERIFY ALL STAKING AND FIELD ENGINEERING REQUIRED TO IMPLEMENT THE WORK AS SHOWN ON THE DRAWINGS.
B. PROTECT ALL STAKES AND BENCHMARKS. REPLACE ALL STAKES AND BENCHMARKS DAMAGED DURING THE COURSE OF CONSTRUCTION AT NO COST TO OWNER.
C. SET GRADE STAKES AT MAXIMUM 25-FOOT GRID INTERVALS.
D. HAND TRIM EXCAVATIONS TO REQUIRED ELEVATIONS. CORRECT OVER-EXCAVATION WITH FILL MATERIALS APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD.
E. REMOVE LARGE STONES OR OTHER HARD MATTER WHICH WOULD DAMAGE PIPES OR IMPEDE CONSISTENT BACKFILLING OR COMPACTION.
F. PROVIDE ALL EQUIPMENT OF SUCH TYPE, FUNCTION, AND DESIGN AS REQUIRED TO ACHIEVE SPECIFIC VALUES. WHERE NECESSARY, PROVIDE RUBBER-TIRED AND VIBRATORY SHEEPSFOOT COMPACTION EQUIPMENT.

EXCAVATION

A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. SDG&E'S REPRESENTATIVE SHALL INSPECT THE EXCAVATION AND APPROVE PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS. PROOF ROLL FOUNDATION AREA AS DIRECTED BY THE GEOTECHNICAL ENGINEER OF RECORD TO DETERMINE IF REMEDIAL WORK IS REQUIRED.
B. OVER-EXCAVATION AND REPLACEMENT OF UNSUITABLE FOUNDATION SOILS AND REPLACEMENT WITH APPROVED COMPACTED FILL WILL BE COMPENSATED AS AGREED UPON WITH THE OWNER.

MODULAR UNIT INSTALLATION

A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE FOUNDATION SOILS OR LEVELING PAD APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD, AT THE APPROPRIATE LINES AND GRADES. MOLDED SURFACE OF MODULAR UNITS SHALL BE USED FOR ALIGNMENT. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND ENSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
B. UNITS SHALL BE PLACED ON THE FOUNDATION SOILS WITH A MAXIMUM DISTANCE OF 9 INCHES BETWEEN ADJACENT UNITS. THE SPACING BETWEEN UNITS INSTALLED IN CURVED REGIONS (CONCAVE OR CONVEX) MUST BE ADJUSTED ACCORDINGLY AND SUCH THAT THE RUNNING BOND LAYOUT IS MAINTAINED. VERTICALLY ADJACENT UNITS SHALL BE CENTERED ON UNITS ABOVE AND BELOW. ALL BLOCK LAYOUT AND PLACEMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH THE SPECIFICATIONS AND THESE PLANS.
C. PLACE AND COMPACT FILL BEHIND WALL UNITS. AFTER UNIT FILL IS COMPACTED EXCESS UNIT FILL MUST BE SCREEDED (ROD-BOARDED) OFF TO DEVELOP A FLAT BASE UPON WHICH SUBSEQUENT UNITS CAN BE POSITIONED. PLACE AND COMPACT BACKFILL SOIL BEHIND UNITS. FOLLOW WALL ERECTION AND UNIT FILL CLOSELY WITH STRUCTURE BACKFILL.
D. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS PRIOR TO UNIT FILL AND BACKFILL PLACEMENT AND COMPACTION SHALL NOT EXCEED ONE COURSE.
E. CONTRACTOR SHALL VERIFY BY SURVEY THAT WALL LINE AND GRADE TOLERANCES ARE MET AT REGULAR INTERVALS DURING CONSTRUCTION, AND AT LEAST EVERY FOURTH BLOCK COURSE.

GEOSYNTHETIC SOIL REINFORCEMENT INSTALLATION

A. GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.
B. GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THESE DRAWINGS. WHERE GEOSYNTHETIC PLACEMENT ELEVATIONS VARY FROM FACING UNIT INCREMENTS, GEOSYNTHETIC ELEVATIONS MAY BE ADJUSTED UP OR DOWN BY 4 INCHES MAXIMUM.
C. THE GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNITS IN ACCORDANCE WITH THE DETAILS OF THESE PLANS AND SPECIFICATIONS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOSYNTHETIC SOIL REINFORCEMENT. THE GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE LAID FLAT PRIOR TO BACKFILL PLACEMENT ON THE GEOSYNTHETIC SOIL REINFORCEMENT.
D. GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF EMBEDMENT. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOSYNTHETIC SOIL REINFORCEMENT WILL NOT BE PERMITTED.

REINFORCED BACKFILL PLACEMENT

A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOSYNTHETIC SOIL REINFORCEMENT AND INSTALLATION DAMAGE.
B. REINFORCED SOIL BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED THE "RAIL HEIGHT" OF THE UNITS BEING PLACED. LIFT THICKNESSES SHALL BE DECREASED TO ACHIEVE THE REQUIRED RELATIVE COMPACTION OF FILL IN REINFORCED ZONE.
C. REINFORCED BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION AS DETERMINED BY ASTM D-1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER.
D. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE BACK OF THE MODULAR CONCRETE UNIT.
E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOSYNTHETIC SOIL REINFORCEMENT. A MINIMUM FILL THICKNESS OF 12 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOSYNTHETIC SOIL REINFORCEMENT. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FORM DISPLACING THE FILL AND DAMAGING THE GEOSYNTHETIC SOIL REINFORCEMENT.
F. RUBBER TIRED EQUIPMENT SHALL PASS OVER GEOSYNTHETIC SOIL REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM THE WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUN-OFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.
H. CARE SHOULD BE TAKEN DURING EXCAVATION FOR AND CONSTRUCTION OF THE V-DITCH AND ALL OTHER TYPE OF WALL STRUCTURE NOT TO DAMAGE THE UPPER GEOGRID LAYER. IF THE GEOGRID LAYERS ARE DAMAGED, THEY NEED TO BE PROPERLY REPLACED.

AS-BUILT CONSTRUCTION TOLERANCES

A. VERTICAL ALIGNMENT: ±.125 FEET VARIATION FROM DESIGN ALIGNMENT OVER ANY 10 FT DISTANCE.
B. WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER, AS MEASURED AT ANY 10 FOOT VERTICAL SECTION.
C. OVERALL WALL BATTER: WITHIN 1 DEGREE OF DESIGN BATTER AS MEASURED FROM FINISH GRADE AT BOTTOM OF WALL TO FINISH GRADE AT TOP OF WALL (AT FACE OF WALL).
D. HORIZONTAL ALIGNMENT: ±.125 FEET VARIATION FROM DESIGN ALIGNMENT OVER ANY 10 FT DISTANCE.
E. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 9 INCHES.

SPECIAL INSPECTIONS

A. PER ICC-ES REPORT ER-5515, SPECIAL INSPECTIONS DURING INSTALLATION MUST BE PERFORMED IN ACCORDANCE WITH SECTION 1704 OF THE 2007 CBC. THE SPECIAL INSPECTOR MUST BE QUALIFIED BY THE BUILDING OFFICIAL IN ACCORDANCE WITH SECTION 1704 OF THE CBC. THE INSPECTOR'S RESPONSIBILITIES INCLUDE VERIFYING THE FOLLOWING AS DESCRIBED PREVIOUSLY:
1. FOUNDATION PREPARATION.
2. UNIT PLACEMENT, INCLUDING ALIGNMENT AND INCLINATION.
3. GEOSYNTHETIC REINFORCEMENT LENGTH, STRENGTH, AND PLACEMENT WITH RESPECT TO ELEVATION AND ORIENTATION.
4. FILL PLACED AND COMPACTED IN REINFORCED ZONE SOIL ENGINEERING PROPERTIES
5. FILL PLACED AND COMPACTED IN REINFORCED ZONE PLACEMENT AND COMPACTION
6. WALL BACK-CUT DRAINS AND OUTLETS

VERDURA BLOCK PROPERTIES

| UNIT TYPE, VERDURA | V40 | V60 |
|---|---|---|
| UNIT SIZE, RAIL HEIGHT, IN. | 8 | 8 |
| UNIT SIZE, CROWN HEIGHT, IN. | 11 | 11 |
| UNIT SIZE, WIDTH, IN. | 18 | 18 |
| UNIT SIZE, DEPTH, IN. | 12 | 12 |
| WEIGHT, (TYPE), LBS. | 82 | 132 |
| BATTER = (DEGREES FROM VERTICAL) | 14 | 14 |

GEOSYNTHETIC REINFORCEMENT PROPERTIES

| TEST METHOD | UNIT | | MIRAGRID 8XT | MIRAGRID 10XT | MIRAGRID 20XT |
|---|---|---|---|---|---|
| TENSILE STRENGTH (AT ULTIMATE) | ASTM D6637 | LBS/FT | 7000 | 8300 | 12420 |
| TENSILE STRENGTH (AT 5% STRAIN) | ASTM D6637 | LBS/FT | 2520 | 3120 | 5340 |
| CREEP REDUCED STRENGTH | ASTM D5262 | LBS/FT | 4200 | 4980 | 7221 |
| LONG TERM ALLOWABLE DESIGN LOAD | GRI GC-4 | LBS/FT | 3636 | 4312 | 5968 |

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

MSE WALL NOTES

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 10/21/09 | SCALE: AS SHOWN | W.O.: - | REV.: 0 |
| CHECKED BY: | RWM | DATE: - | | | |
| APPROVED BY: | CR | DATE: - | SHEET 36 OF 66 | | SCR-C-036 |
| CAD NO.: | GP36 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CAD\USFS\CIVIL\GP\GP36
XREFS:

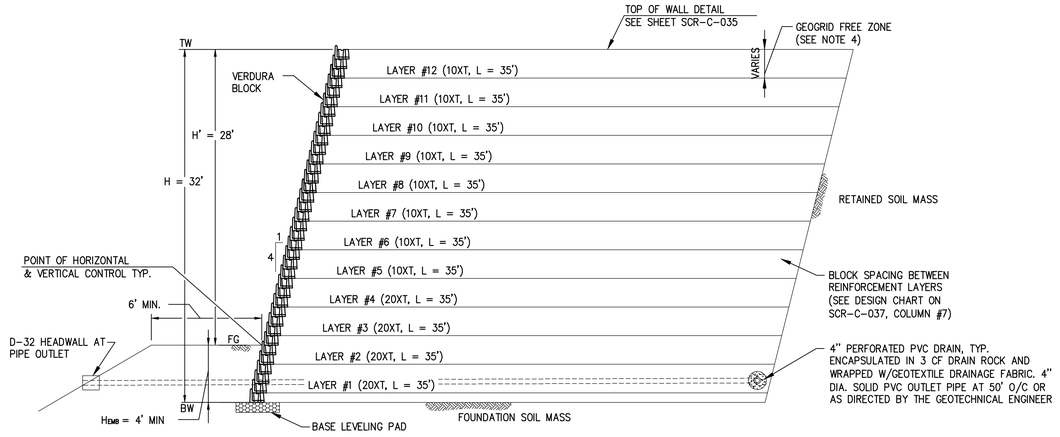
| DESIGN CHART – VERDURA 40 RETAINING WALL | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| COLUMN #1 | COLUMN #2 | COLUMN #3 | COLUMN #4 | COLUMN #5 | COLUMN #6 | | | COLUMN #7 BLOCK SPACING BETWEEN REINFORCEMENT LAYER NUMBER | | | |
| TOTAL HEIGHT H TOT (FT) | EXPOSED HEIGHT H' (FT) | EMBEDDED HEIGHT H EMB (FT) | REINFORCEMENT LENGTH L (FT) | NUMBER OF REINFORCEMENT LAYERS | MIRAGRID 8XT GEOGRID PER LAYER (#) | MIRAGRID 10XT GEOGRID PER LAYER (#) | MIRAGRID 20XT GEOGRID PER LAYER (#) | 1 BLOCK SPACING | 2 BLOCK SPACING | 3 BLOCK SPACING | FROM THE CREST |
| < 6 | 4 OR LESS | 2 | 6 | 3 | ALL LAYERS | N/A | N/A | LAYER #1 | LAYER #3 | LAYER #2 | 3 TO 5 COURSES |
| 10 | 8 | 2 | 10 | 5 | ALL LAYERS | N/A | N/A | LAYER #1 | LAYER #5 | LAYERS #2 THROUGH #4 | 3 TO 5 COURSES |
| 14 | 12 | 2 | 15 | 7 | ALL LAYERS | N/A | N/A | LAYER #1 | LAYER #7 | LAYERS #2 THROUGH #6 | 3 TO 5 COURSES |
| 18 | 16 | 2 | 20 | 9 | ALL LAYERS | N/A | N/A | LAYER #1 | LAYER #9 | LAYERS #2 THROUGH #8 | 3 TO 5 COURSES |
| 22 | 20 | 2 | 25 | 11 | N/A | LAYERS #3 THROUGH #11 | LAYERS #1 AND #2 | LAYER #1 | LAYER #11 | LAYERS #2 THROUGH #10 | 3 TO 5 COURSES |
| 28 | 24 | 4 | 30 | 14 | N/A | LAYERS #3 THROUGH #14 | LAYERS #1 AND #2 | LAYER #1 | LAYER #14 | LAYERS #2 THROUGH #13 | 3 TO 5 COURSES |
| 32 | 28 | 4 | 35 | 16 | N/A | LAYERS #5 THROUGH #16 | LAYERS #1 THROUGH #4 | LAYER #1 | LAYER #16 | LAYERS #2 THROUGH #15 | 3 TO 5 COURSES |
| 36 | 32 | 4 | 40 | 18 | N/A | LAYERS #5 THROUGH #18 | LAYERS #1 THROUGH #4 | LAYER #1 | LAYER #18 | LAYERS #2 THROUGH #17 | 3 TO 5 COURSES |
| 40 | 36 | 4 | 45 | 20 | N/A | LAYERS #10 THROUGH #20 | LAYERS #1 THROUGH #9 | LAYER #1 | LAYER #20 | LAYERS #2 THROUGH #19 | 3 TO 5 COURSES |
| 44 | 40 | 4 | 50 | 22 | N/A | LAYERS #10 THROUGH #22 | LAYERS #1 THROUGH #9 | LAYER #1 | LAYER #22 | LAYERS #2 THROUGH #21 | 3 TO 5 COURSES |
| 48 | 44 | 4 | 50 | 24 | N/A | LAYERS #13 THROUGH #24 | LAYERS #1 THROUGH #12 | LAYER #1 | LAYER #24 | LAYERS #2 THROUGH #23 | 3 TO 5 COURSES |

## NOTES

1. GEOGRID LENGTHS ARE MEASURED FROM THE BACK OF BLOCK.
2. ALL IRRIGATION LINES ARE TO BE INSTALLED ALONG THE FACE OF THE WALL. REFER TO LANDSCAPE PLANS FOR IRRIGATION DETAILS.
3. SEE CIVIL PLANS FOR ALL DRAINAGE DETAILS TYP.
4. GEOGRID WILL NOT BE PLACED CLOSER THAN THREE COURSES FROM THE TOP OF WALL AND NO FURTHER THAN FIVE COURSES.
5. GEOGRID LOCATIONS AND LENGTHS SHOWN ON THE PROFILE TAKE PRECEDENT OVER THE VALUES SHOWN IN THE DESIGN CHART ON SCR-C-037.

## LEGEND

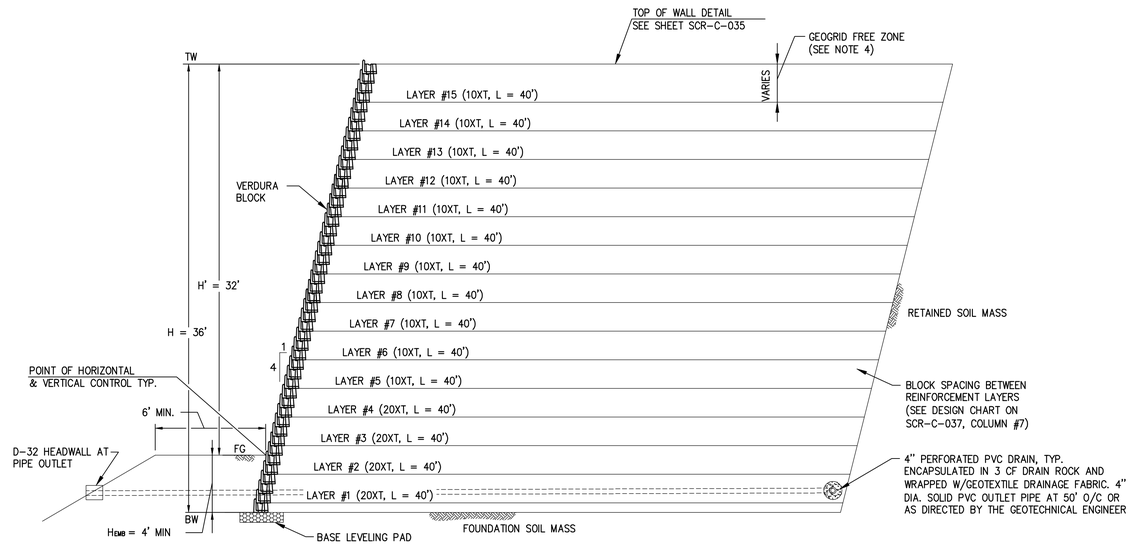
| | |
|---|---|
| TW | TOP OF MSE STRUCTURE |
| BW | BOTTOM OF MSE STRUCTURE |
| FG | FINISH GRADE |
| MG | MIRAGRID GEOSYNTHETIC REINFORCING |
| L | GEOGRID LENGTH |
| H | OVERALL WALL DESIGN HEIGHT |
| H' | EXPOSED WALL DESIGN HEIGHT |
| $H_{EMB}$ | WALL DESIGN EMBEDMENT HEIGHT |
| #XT | DENOTES TYPE OF MIRAGRID REINFORCING REQUIRED |




NOTE: ACTUAL MAX WALL HEIGHT, H = 25'-4"±
MAX DESIGN WALL HEIGHT, H = 32'

## WALL 2 MAX DESIGN SECTION

**NOT TO SCALE**




NOTE: ACTUAL MAX WALL HEIGHT, H = 31'-4"±
MAX DESIGN WALL HEIGHT, H = 36'

## WALL 5 MAX DESIGN SECTION

**NOT TO SCALE**

N:\SDBG3960O\CADD\USFS\CIVIL\GP\GP37
XREFS:

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

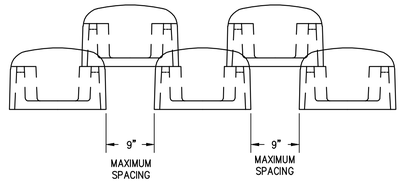
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

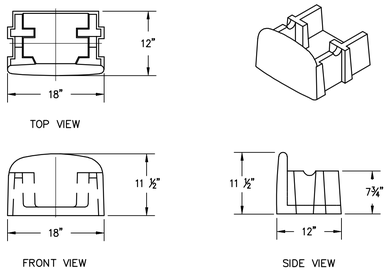
TYPICAL SECTION AND DESIGN CHART

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: NS | DATE: 11/30/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 37 OF 66 | | | SCR-C-037 |
| CAD NO.: GP37 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 12/8/09



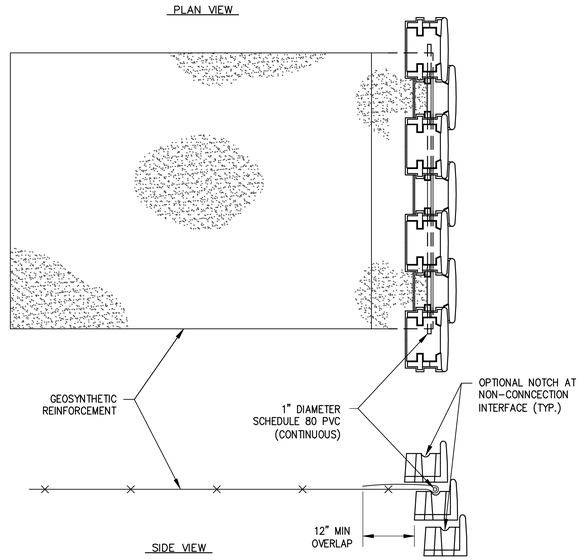

BLOCK SPACING DETAIL




VERDURA 40 BLOCK DETAIL

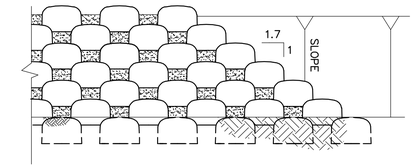
## A VERDURA 40 BLOCK AND SPACING DETAIL

NO SCALE

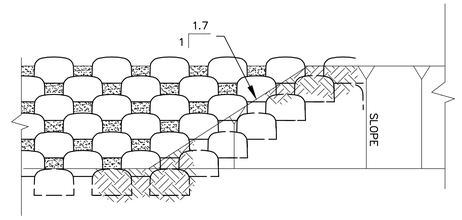



## B GEOGRID CONNECTION DETAIL

NO SCALE



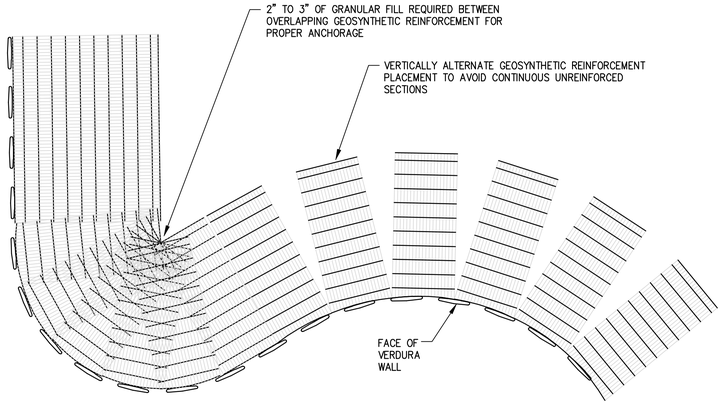

CASE B




CASE C

## C END OF WALL TRANSITION DETAIL

NO SCALE




NOTES:

CHECK WITH MANUFACTURER'S SPECIFICATIONS FOR THE CORRECT ORIENTATION OF THE GEOSYNTHETIC REINFORCEMENT TO OBTAIN PROPER STRENGTH.

NOLTE BEYOND ENGINEERING

## D GEOGRID PLACEMENT ON CURVES DETAIL

NO SCALE

NO SCALE

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

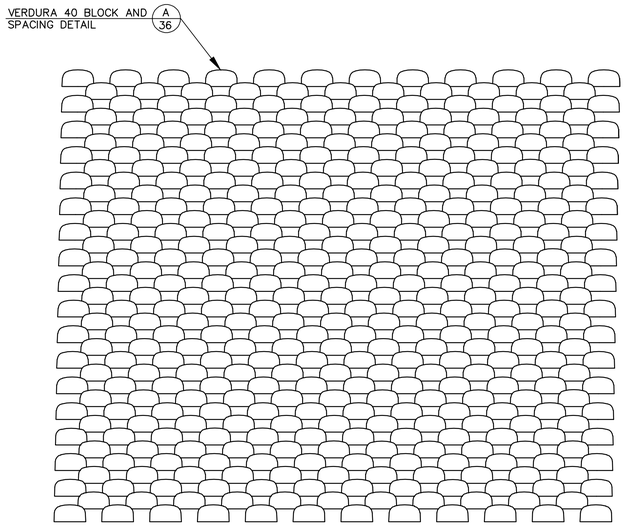
MSE WALL DETAILS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | ---- | DATE: 8/12/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 38 OF 66 | | | | |
| CAD NO.: | GP38 | PLOT SCALE: 1=1 | | | | | |

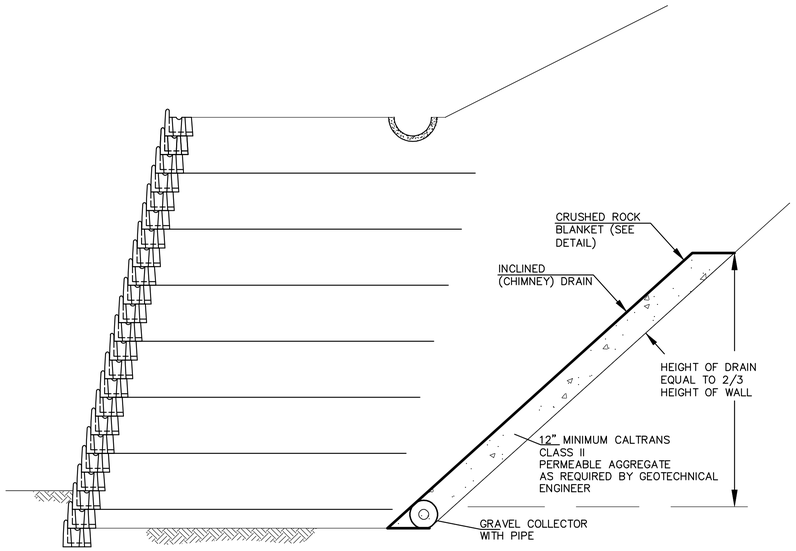
SCR-C-038

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CAD\USPS\CIVIL\GP\GP38 XREFS



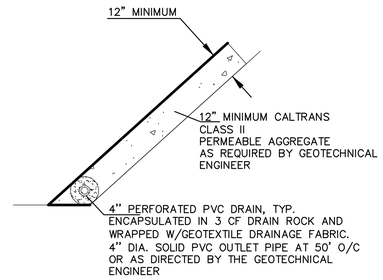

A FRONT WALL PROFILE NO SCALE



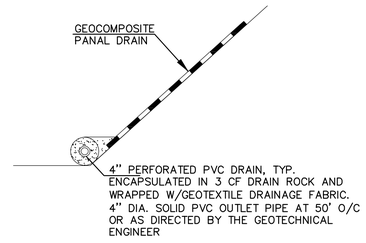

B CHIMNEY DRAIN NO SCALE

## NOTES:

1. CHIMNEY DRAIN TO BE INSTALLED AT AREAS OF CUT INTO EXISTING SOILS BEHIND MSE WALLS, AND AS DIRECTED BY THE GEOTECHNICAL ENGINEER IN THE FIELD.
2. PERFORATED PIPE SHOULD OUTLET THROUGH A SOLID PERFORATED PIPE TO A FREE GRAVITY OUTFALL. PERFORATED PIPE AND OUTLET PIPE SHOULD HAVE AT LEAST A FALL OF 1%.
3. FILTER FABRIC SHOULD CONSIST OF MIRAFI 140N, OR SIMILAR APPROVED PRODUCT FILTER FABRIC SHOULD BE OVERLAPPED PER MANUFACTURER INSTRUCTIONS.
4. DRAIN INSTALLATION SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING.

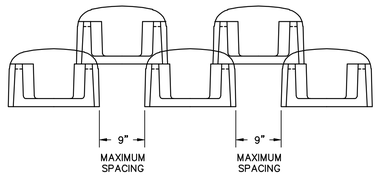


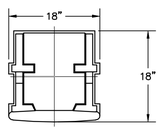

ROCK BLANKET ALTERNATIVE



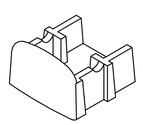

GEOCOMPOSITE PANEL ALTERNATIVE

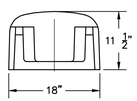
CHIMNEY DRAIN ALTERNATIVES AND NOTES NO SCALE



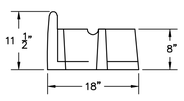




TOP VIEW






FRONT VIEW




SIDE VIEW

VERDURA 40 BLOCK DETAIL

D WALL DETAILS NO SCALE

E NO SCALE

F WALL DETAILS NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

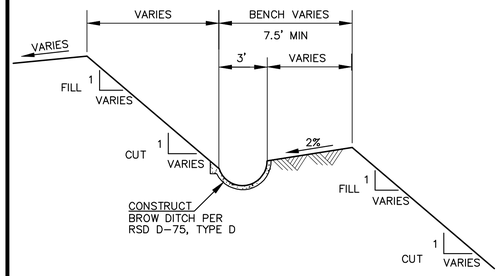
MSE WALL DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | NS | DATE: 11/24/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 39 OF 66 | | |
| CAD NO.: | GP39 | PLOT SCALE: | 1=1 | | |

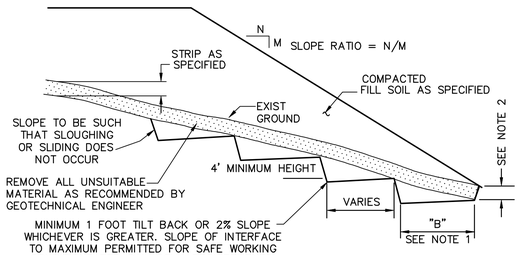
SCR-C-039

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB0396\00\CAD\USFS\CIVIL\GP\GP39
XREFS:




A TERRACE DETAIL NO SCALE

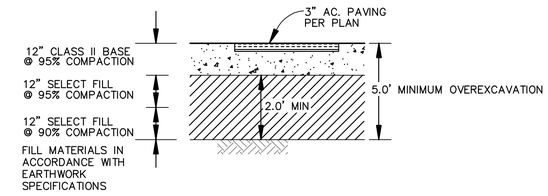



NOTES:

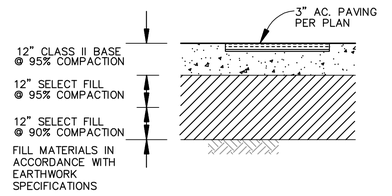
1. THE MINIMUM WIDTH "B" OR KEY SHALL BE 2 FEET WIDER THAN THE COMPACTION EQUIPMENT, AND NOT LESS THAN 10 FEET.
2. THE OUTSIDE EDGE OF BOTTOM KEY SHALL BE BELOW TOPSOIL OR LOOSE SURFACE MATERIAL AND AT LEAST 3 FEET INTO DENSE FORMATIONAL MATERIAL.

KEYS ARE REQUIRED WHERE THE NATURAL SLOPES ARE STEEPER THAN 6 HORIZONTAL TO 1 VERTICAL, OR WHERE SPECIFIED BY GEOTECHNICAL ENGINEER.

B BENCHING DETAIL NO SCALE



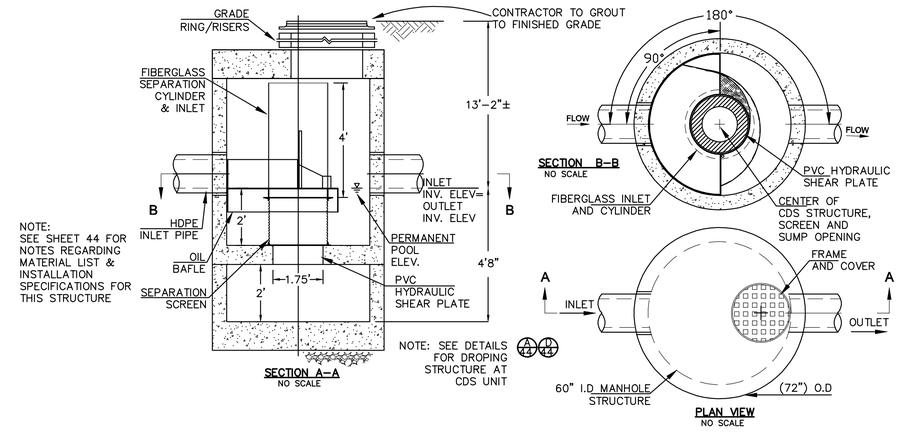

C TYPICAL SUBSTATION SECTION – CUT NO SCALE



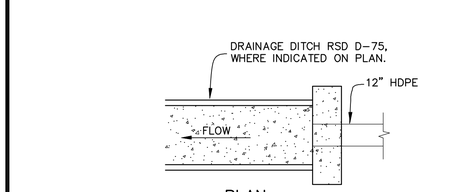

NOTE

1. ALL OVERSIZE MATERIAL SHALL BE BURIED AT A DEPTH BELOW FINISH GRADE IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS

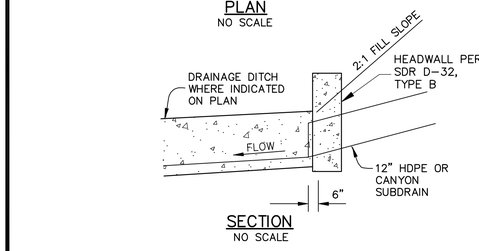
D TYPICAL SUBSTATION SECTION – FILL NO SCALE




E WATER QUALITY UNIT – CONTECH CDS2015-5-43257-01 NO SCALE

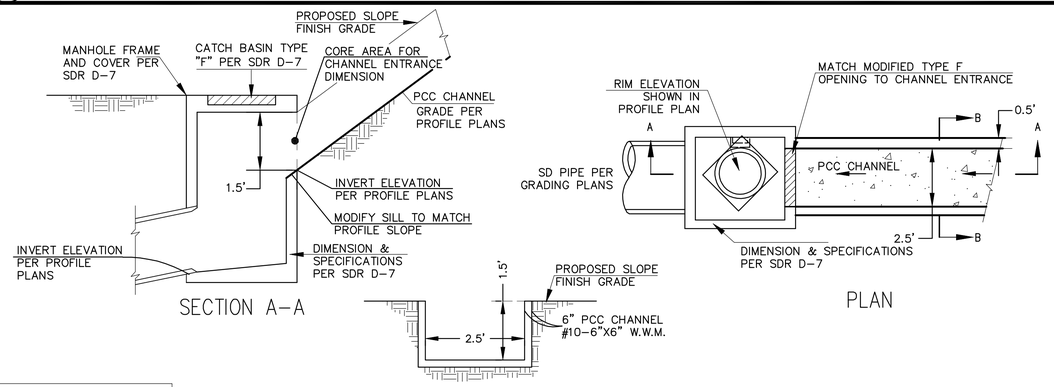



PLAN
NO SCALE




SECTION
NO SCALE

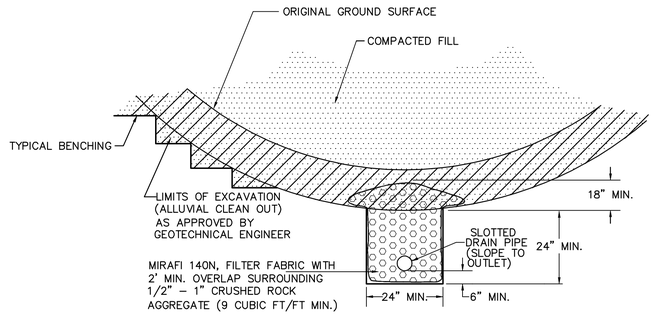
G PIPE OUTLET AT CANYON SUBDRAIN NO SCALE



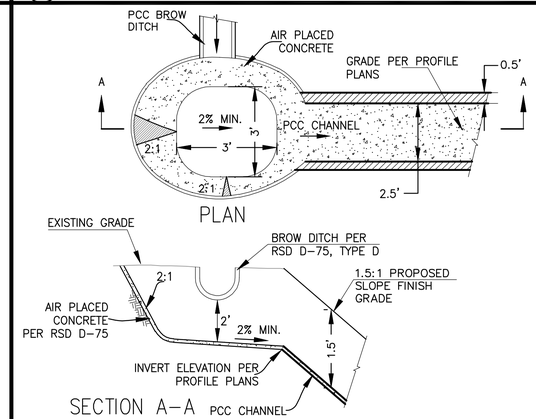

H CHANNEL TO DRAINAGE STRUCTURE NO SCALE

NOTE:

1. PIPE SHALL BE A MINIMUM OF 4-INCH DIAMETER. FOR RUNS OF 500 FEET OR MORE USE 6-INCH DIAMETER PIPE.
2. DOWNSTREAM 20 FEET OF PIPE TO OUTLET SHALL BE NON-PERFORATED AND BACKFILLED WITH FINE-GRAINED MATERIAL.
3. OUTLET SHOULD BE PERMANENT AND PROTECTED.




J TYPICAL SECTION CANYON SUBDRAIN NO SCALE




K AREA DRAIN FOR SPILLWAY

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

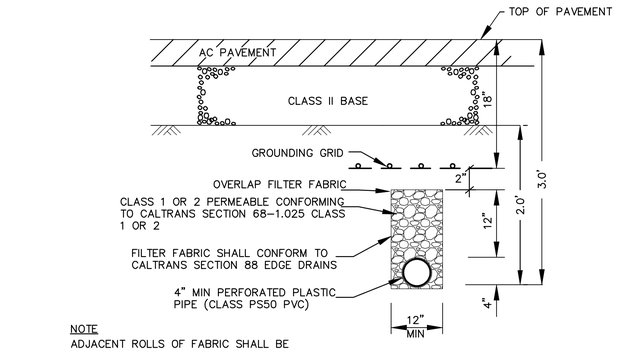
SUNCREST SUBSTATION

GRADING AND DRAINAGE DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | SCR-C-040 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 40 OF 66 | | | |
| CAD NO.: GP40 | PLOT SCALE: 1=1 | | | | |

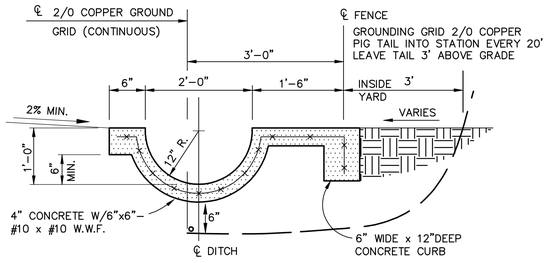
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB03960\CAD\USFS\CIVIL\GP\GP40 XREFS:

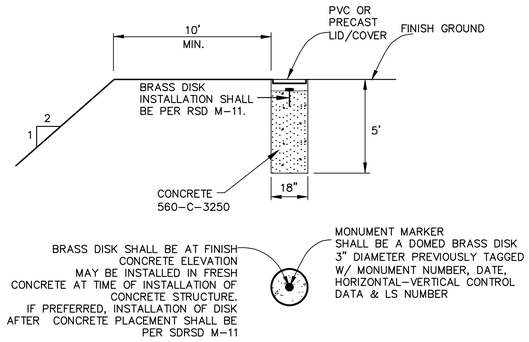


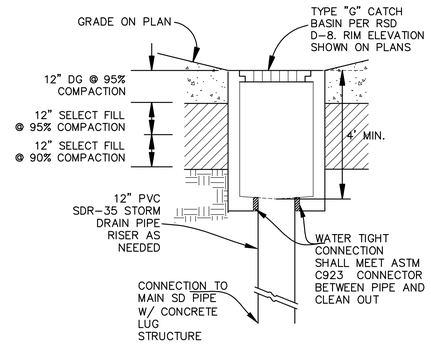

NOTE

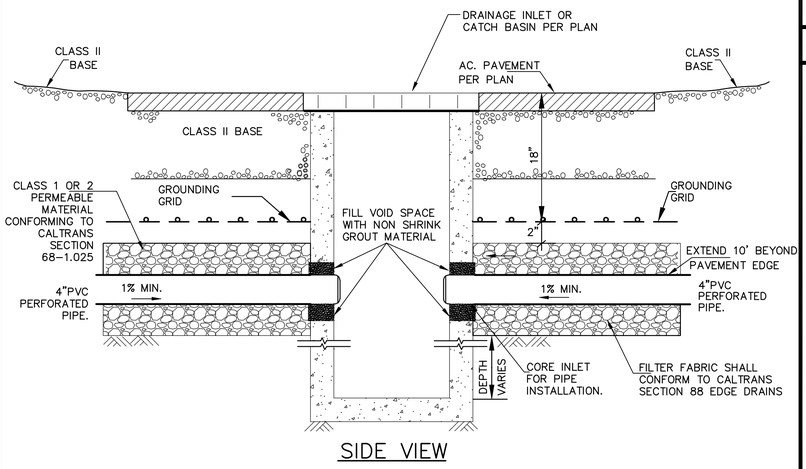
ADJACENT ROLLS OF FABRIC SHALL BE OVERLAPPED A MIN OF 18 INCHES THE PRECEDING ROLL SHALL OVERLAP THE FOLLOWING ROLL IN THE DIRECTION OF DRAINAGE



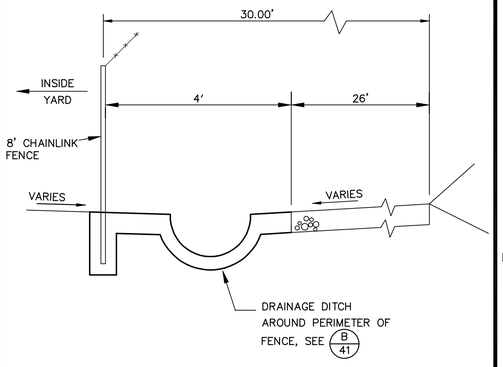

NOTE: CONCRETE PER RSD D-75

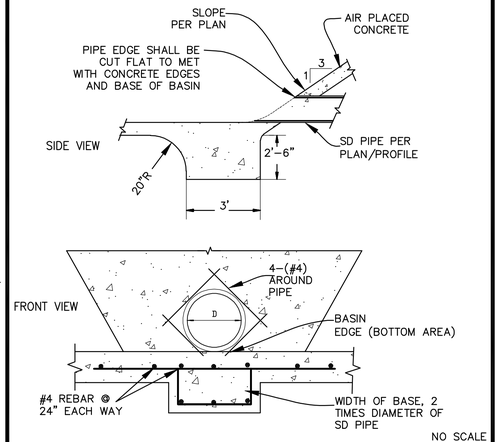


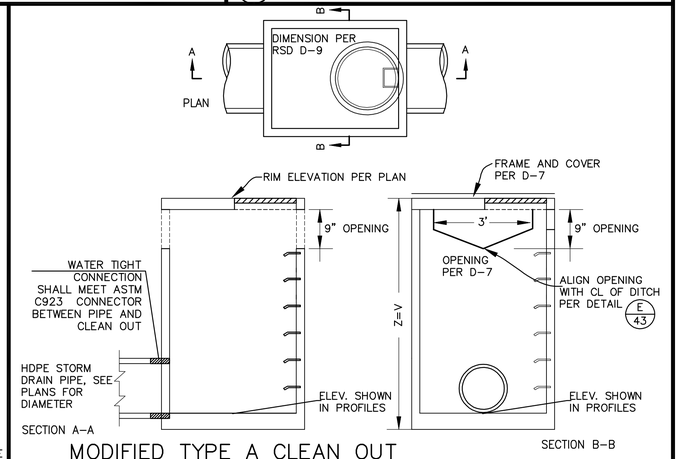



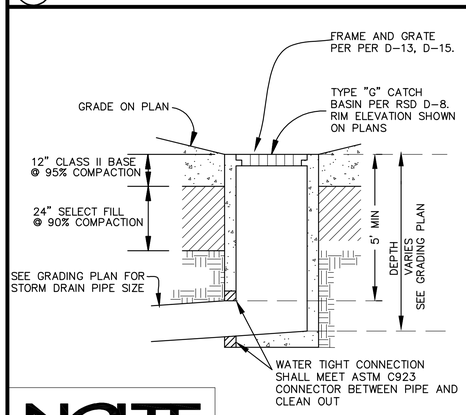

SIDE VIEW

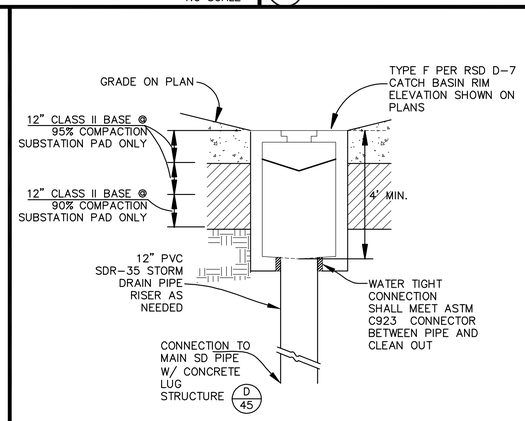


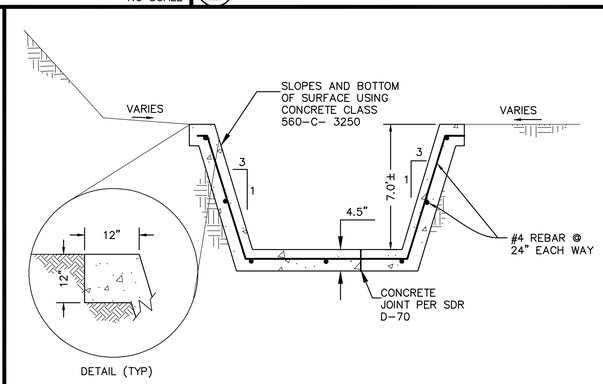



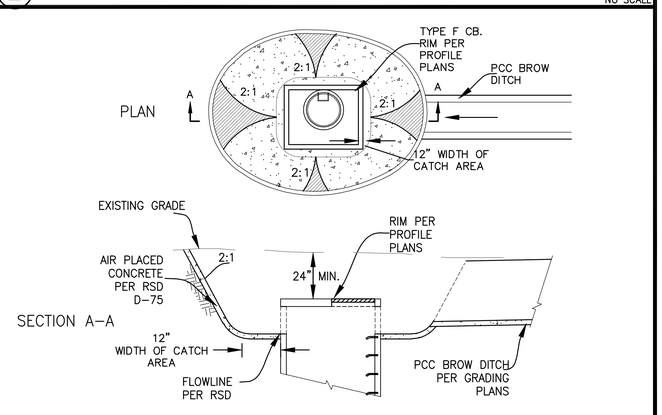

MODIFIED TYPE A CLEAN OUT




DETAIL (TYP)




A PAVEMENT SUBDRAIN NO SCALE

B TYPICAL GROUNDING AT PERIMETER DITCH NO SCALE

C SETTLEMENT MONUMENT NO SCALE

D TYPE G CB WITH PIPE RISER NO SCALE

E TYPICAL DITCH AT FENCE LINE NO SCALE

F TYPICAL PIPE DISCHARGE AT BASIN NO SCALE

J WITH DRAINAGE ENTRANCE NO SCALE

G TYPE G INLET NO SCALE

H TYPE F CATCH BASIN NO SCALE

I TYPICAL BASIN SURFACE NO SCALE

K CONCRETE DRAINAGE STRUCTURE NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

STORMWATER DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 41 OF 66 | | SCR-C-041 |
| CAD NO.: | GP41 | PLOT SCALE: | 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG396001\CADD\USFS\CIVIL\GP\GP41
XREFS:

FOR FENCE PLAN SEE DRAWING SCR-S-666
FOR FENCE AND GATE DETAILS SEE DRAWINGS
SCR-S-668, SCR-S-668.1 AND SCR-S-668.2

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

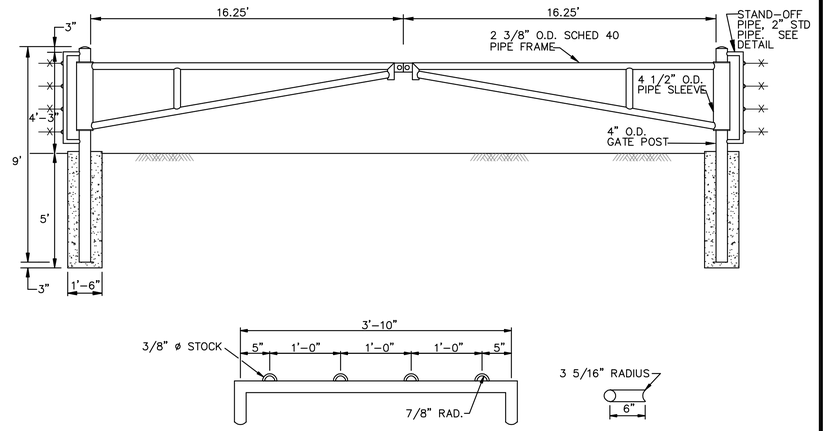
SUNCREST SUBSTATION

FENCE DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/18/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 42 OF 66 | | SCR-C-042 |
| CAD NO.: | GP42 | PLOT SCALE: 1=1 | | | |

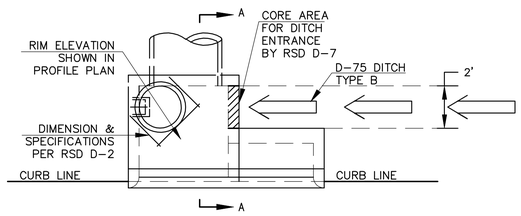
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CAD\USFS\CIVIL\GP\GP42
XREFS:

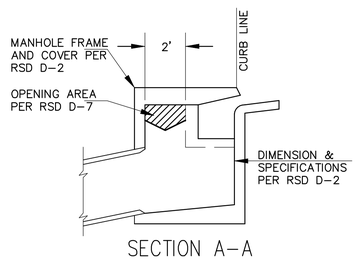



NOTES
1. LEFT AND RIGHT SIDE OF GATE ARE IDENTICAL.
2. FOOTINGS SHALL BE MINIMUM 3000 PSI CONCRETE

B — PIPE SWING GATE — NO SCALE

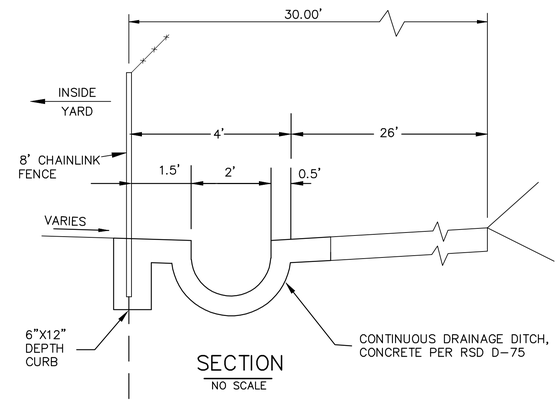



PLAN

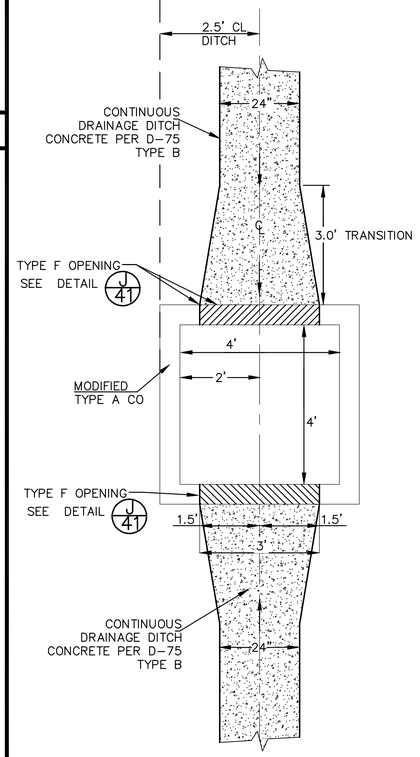



SECTION A-A

D — MODIFIED TYPE B-1 CI — NO SCALE




SECTION
NO SCALE




PLAN
NO SCALE

E — MOD. "A" C.O. WITH TYPE F OPENING — NO SCALE

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

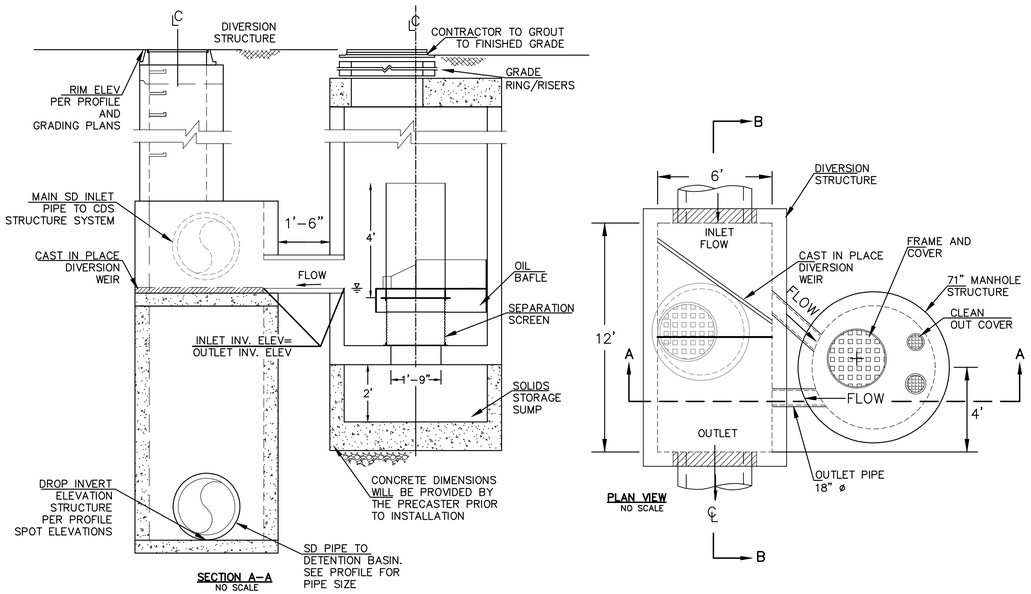
SUNCREST SUBSTATION

GRADING AND DRAINAGE DETAILS

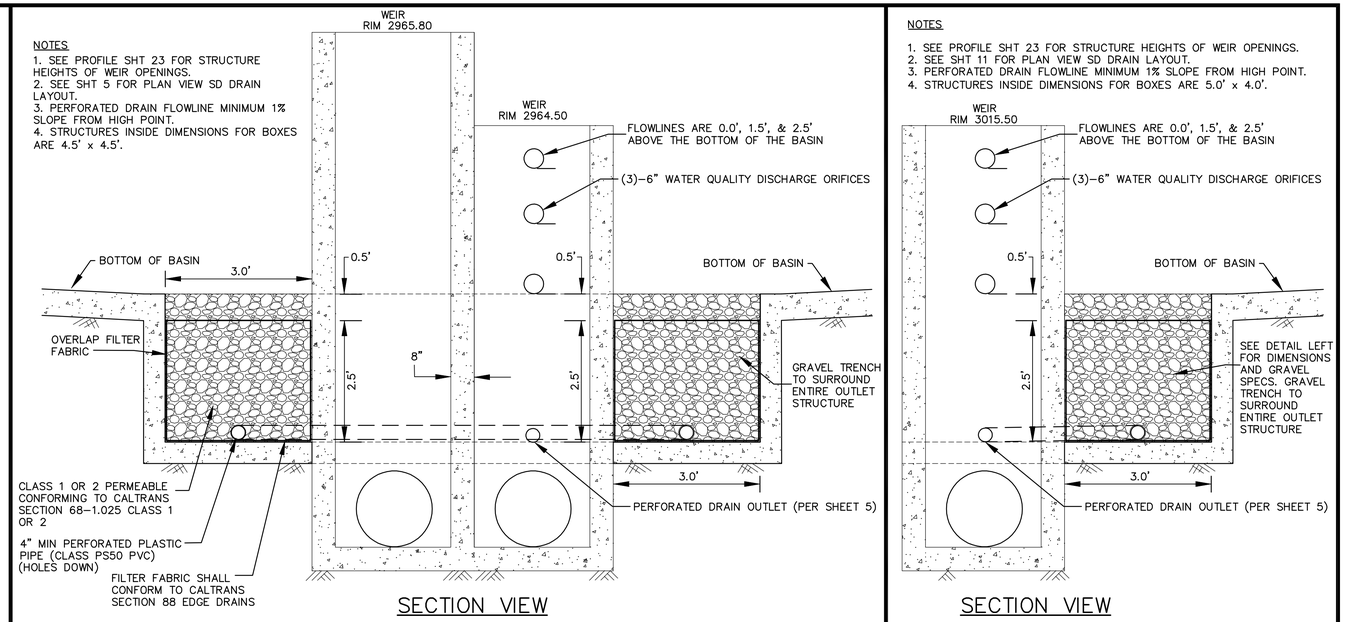
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 43 OF 66 | | SCR-C-043 |
| CAD NO.: | GP43 | PLOT SCALE: | 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP43
XREFS:

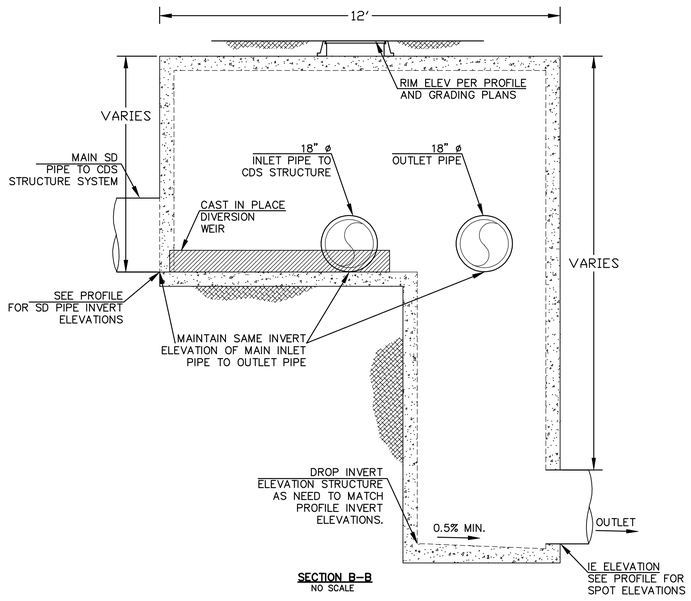



A MOD. DROP STRUCTURE FOR CONTECH CDS3030-43257-02 NO SCALE




B MULTIPLE ORIFICE OUTLET RISER STRUCTURE (DETENTION BASIN #2)

C (DETENTION BASIN #1) NO SCALE




MATERIALS LIST -PROVIDED BY CONTECH

| COUNT | DESCRIPTION | INSTALLED BY |
|---|---|---|
| 1 | FIBERGLASS INLET & CYLINDER | CONTECH |
| 1 | HYDRAULIC SHEER PLATE | CONTECH |
| 1 | 4700 MICRON SEP. CREEN | CONTECH |
| 1 | SEALANT FOR JOINTS | CONTRACTOR |
| – | GRADE RINGS/RISERS | CONTRACTOR |
| 1 | ø30" X 4" FRAME AND COVER | CONTRACTOR |

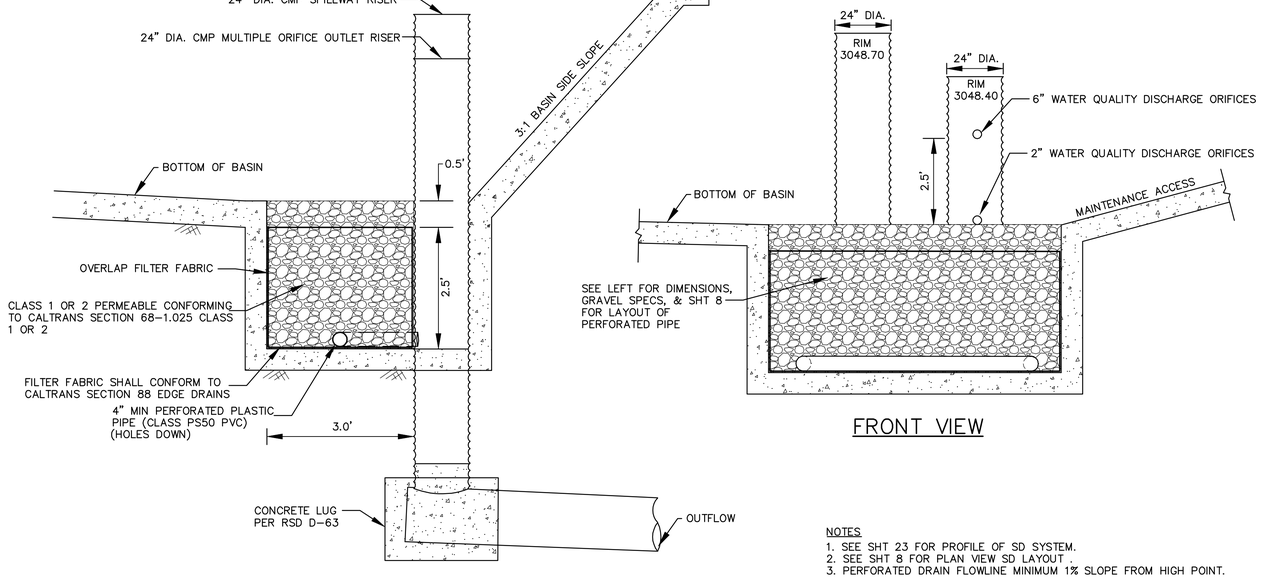
GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE
2. DIMENSIONS MARKED WITH() ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY
3. FOR FABRICATIONS DRAWINGS WITH DETAILED STRUCTURES DIMENSIONS AND WEIGHTS,PLEASE CONTACT YOUR CONTECH STORMWATER SOLUTIONS REPRESENTATIVE.
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE AND CASTINGS SHALL MEET AASHTO LOAD RATING.
6. PVC HYDRAULICS SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANY-FLOTATION PROVISIONS AREA SITE SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED)
3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURES SECTIONS, AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOW LINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

D WATER QUALITY UNIT - CONTECH CDS3030-43257-02 & 03 NO SCALE




E MULTIPLE ORIFICE CMP OUTLET RISER (DETENTION BASIN #3) NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

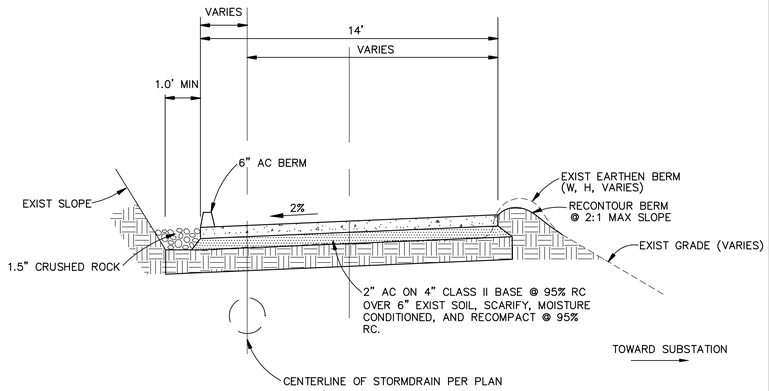
SUNCREST SUBSTATION

GRADING AND DRAINAGE DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 44 OF 66 | SCR-C-044 | |
| CAD NO.: | GP44 | PLOT SCALE: | 1=1 | | |

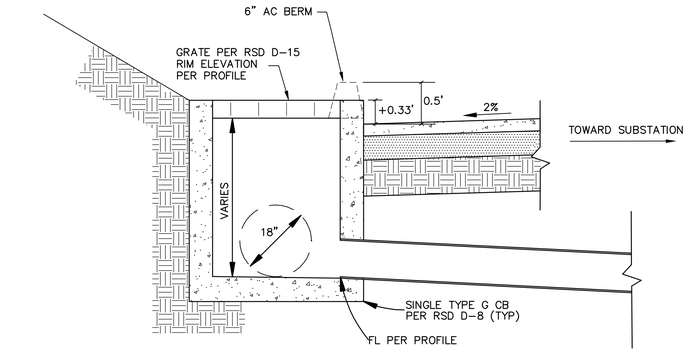
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD803960\CADD\USFS\CIVIL\GP\GP44

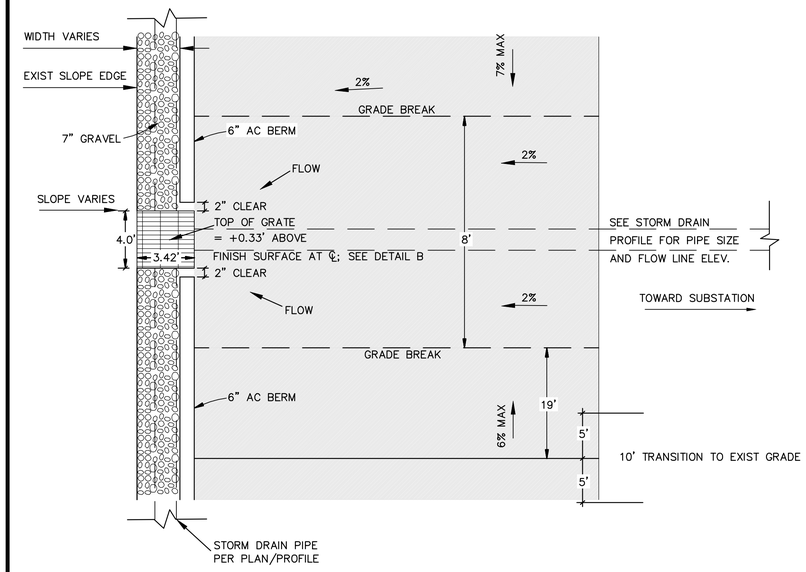



NOTE: HORIZONTAL AND VERTICAL ALIGNMENT OF 14' ROADWAY SHALL MEET CATCH BASINS AS SHOWN IN THESE PLANS; INTERVENING ALIGNMENTS SHALL GENERALLY FOLLOW EXISTING GROUND PROFILE AND A HORIZONTAL ALIGNMENT SUBSTANTIALLY CONFORMING TO THAT SHOWN ON SHEETS 14 AND 15.

(A) BELL BLUFF TRUCK TRAIL TYPICAL SECTION — NO SCALE




(B) DRAINAGE SECTION AT BELL BLUFF TRUCK TRAIL (TYP) — NO SCALE



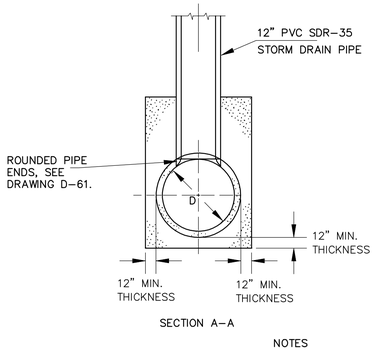

PLAN

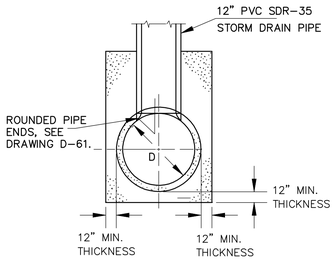
(C) AREA DRAIN PLAN AT BELL BLUFF TRUCK TRAIL (TYP) — NO SCALE










NOTES

1. THE END OF CONNECTING PIPE SHALL NOT PROJECT INTO THE WATERWAY OF THE LARGER PIPE.
2. THE LARGER PIPE SHALL NOT BE LESS THAN 24" ID.
3. THE SMALLER PIPE SHALL NOT BE MORE THAN 2/3 THE SIZE OF THE LARGER PIPE.
4. CONCRETE SHALL BE 470-C-2000.

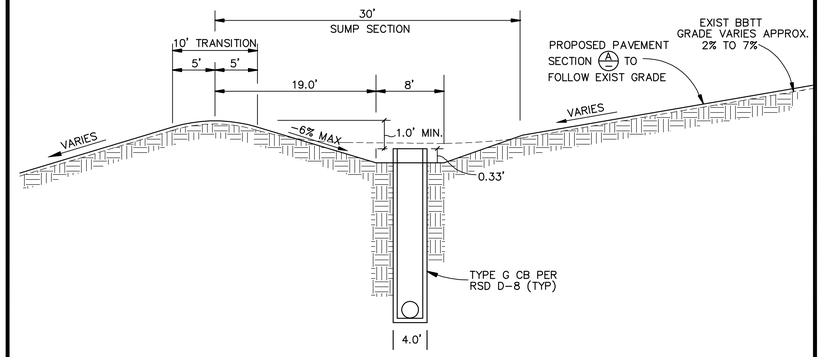
(D) MODIFIED CONCRETE LUG — NO SCALE







(E) DITCH TO CATCH BASIN FLOW — NO SCALE




(C) LONG. SECTION AT BELL BLUFF TRUCK TRAIL (TYP) — NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

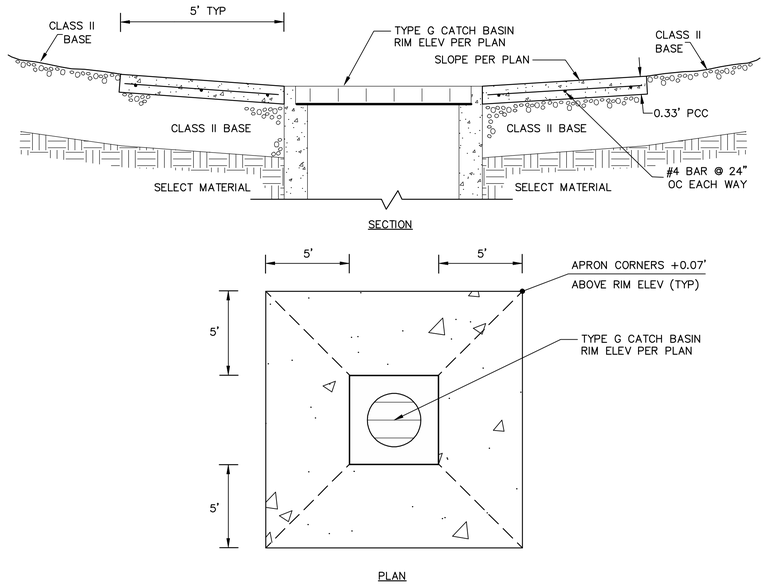
SUNCREST SUBSTATION

GRADING AND DRAINGE DETAILS

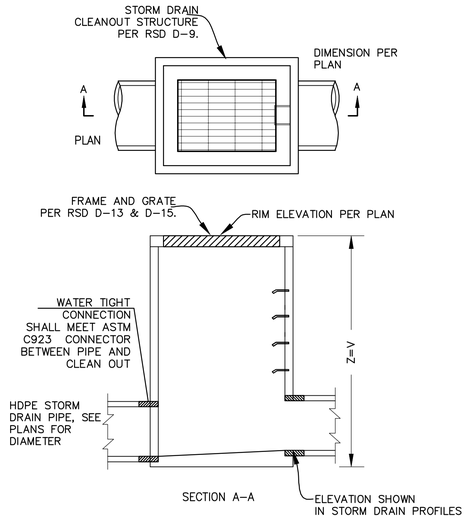
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 45 OF 66 | | | SCR-C-045 |
| CAD NO.: GP45 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

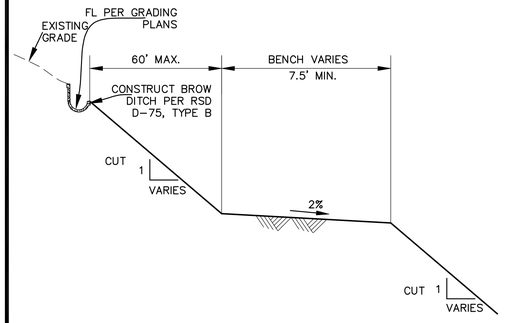
N:\SDB039600\CADD\USFS\CIVIL\GP\GP45
XREFS:



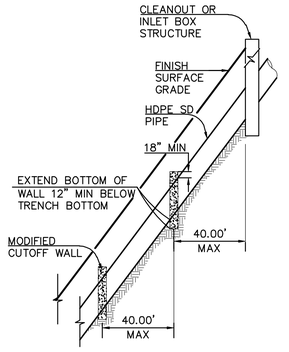

(A) CONCRETE APRON — NO SCALE



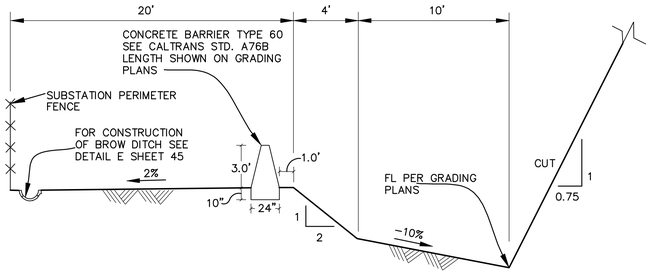

(B) MODIFIED TYPE A CLEANOUT W/ GRATE — NO SCALE



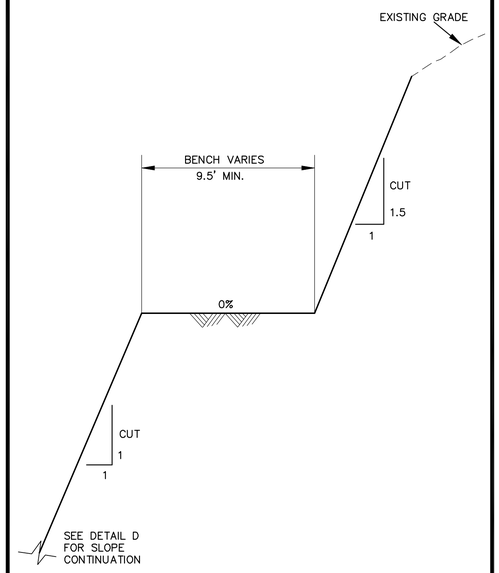

(C) CUT SLOPE DETAIL — NO SCALE



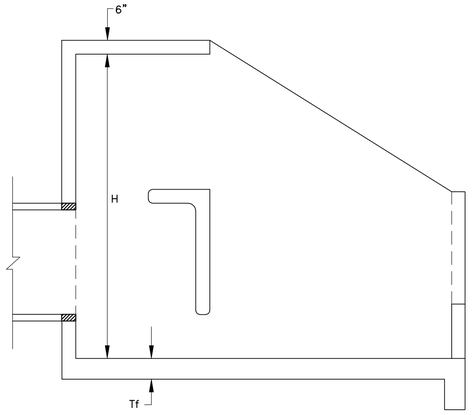

(H) MODIFIED CUTOFF WALL — NO SCALE




(D) ROCK CATCHMENT BASIN — NO SCALE




(E) ROCK AREA CUT SLOPE DETAIL — NO SCALE




NORTHWEST CONCRETE ENERGY DISSIPATOR MODIFIED DIMENSION

| | H |
|---|---|
| DIMENSIONS | 10'-9" |

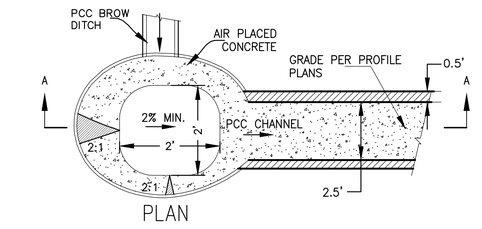
NOTE: SEE DETAILS D-41A & D-41B FOR STRUCTURAL DETAILS.

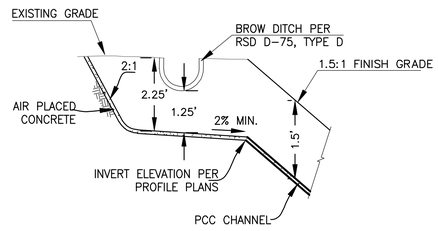
SOUTHWEST CONCRETE ENERGY DISSIPATOR MODIFIED DIMENSION

| | H |
|---|---|
| DIMENSIONS | 12'-3" |

NOTE: SEE DETAILS D-41A & D-41B FOR STRUCTURAL DETAILS.

(F) MODIFIED CONCRETE ENERGY DISSIPATOR — NO SCALE




(G) AREA DRAIN FOR SPILLWAY — NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

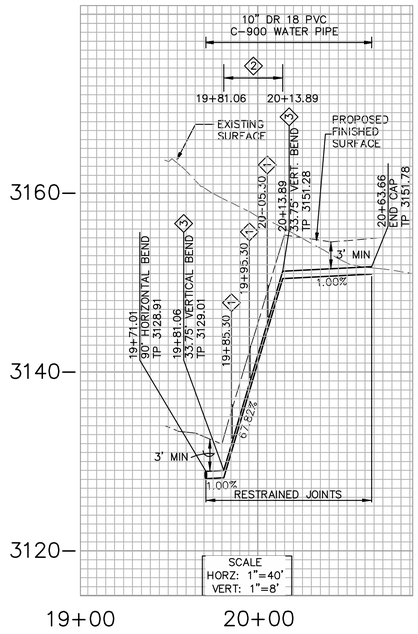
SUNCREST SUBSTATION

GRADING AND DRAINAGE DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: MJ | DATE: 11/25/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | SCR-C-046 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 46 OF 66 | | | |
| CAD NO.: GP46 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USFS\CIVIL\GP\GP46
XREFS:




## CONSTRUCTION NOTES

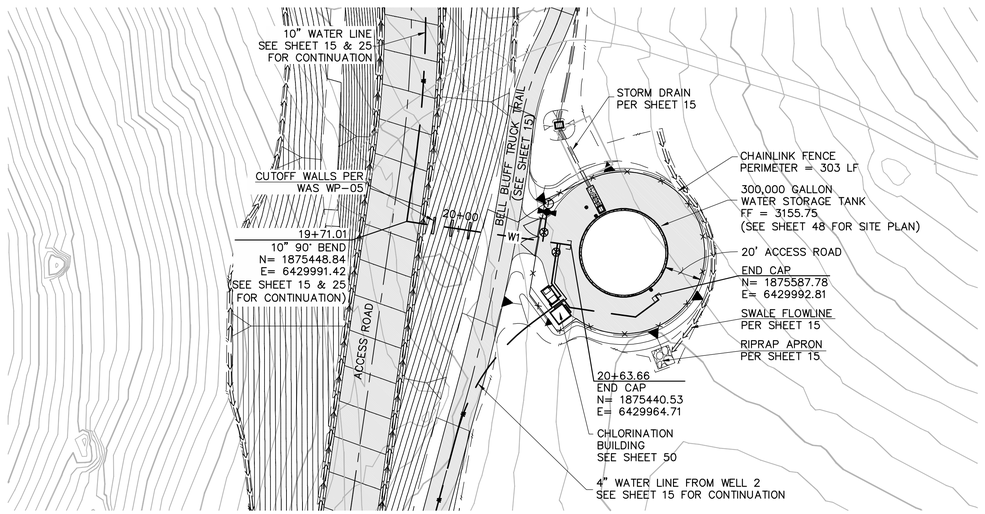
1. INSTALL CUTOFF WALL PER WAS DWG WP-05.
2. INSTALL 4" GUNITE BLANKET PER WAS DWG. WP-05.
3. INSTALL 22.5° AND 11.25° FLG. VERTICAL BENDS TOGETHER.

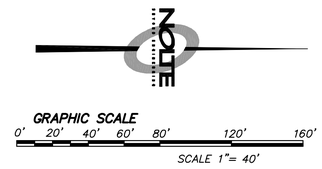
## WATER DATA TABLE

| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W1 | N08°14'35"E | ... | 92.65' | 10" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 1300)




# 10-INCH WATER LINE PLAN AND PROFILE

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

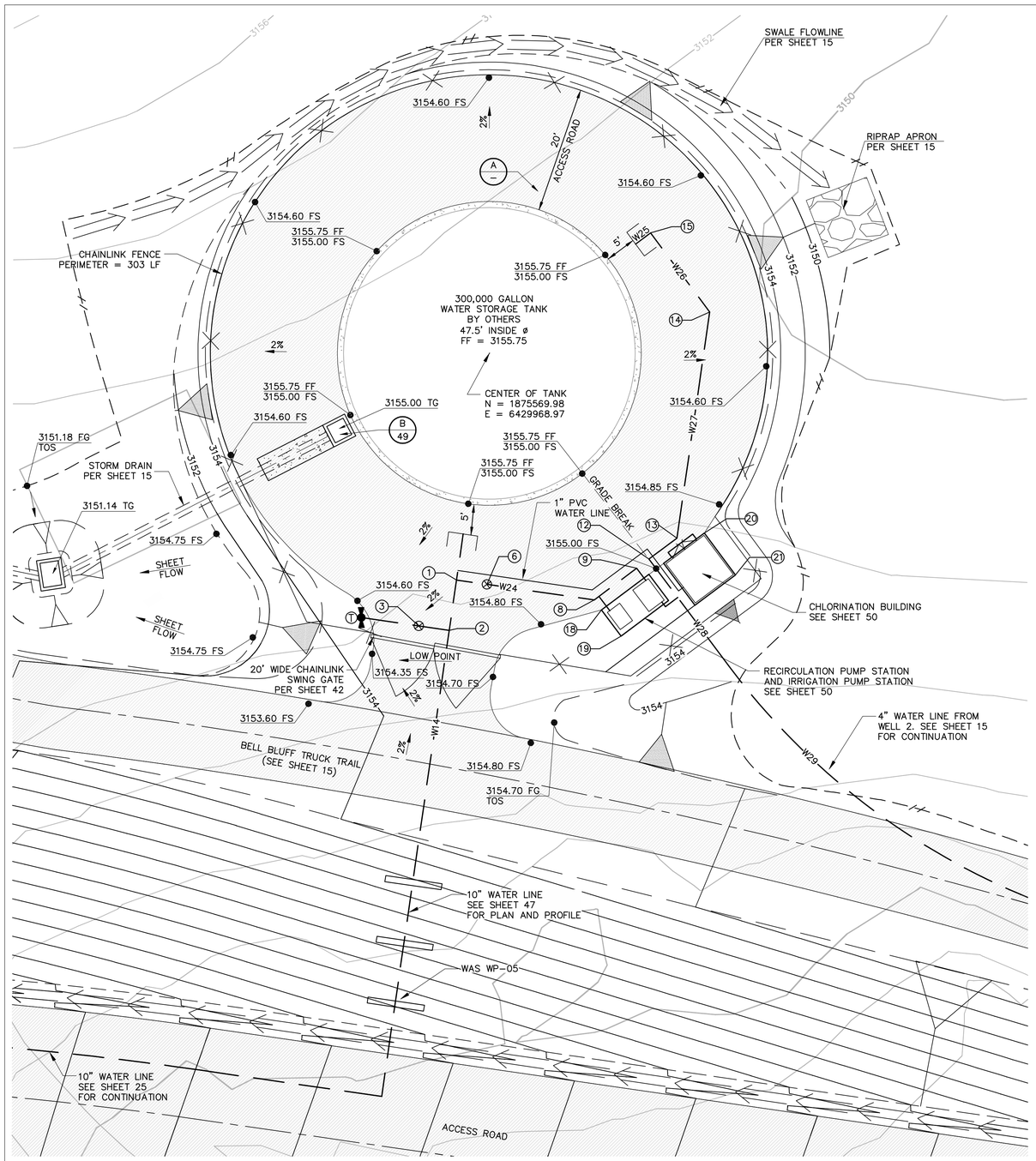
SUNCREST SUBSTATION

WATER AND WELL SYSTEM DETAILS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | APS | DATE: 11/11/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 47 OF 66 | | | SCR-C-047 | |
| CAD NO.: | GP47 | PLOT SCALE: 1=1 | | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG3960\CADD\USFS\CIVIL\GP\GP47
XREFS:




TANK SITE PLAN

GRAPHIC SCALE
0' 5' 10' 15' 20' 40' 10'
SCALE 1"= 10'

## COORDINATE TABLE

| POINT | N | E | DESCRIPTION |
|---|---|---|---|
| 1 | 1875533.03 | 6429963.62 | 10"x10"x4" D.I. FLG. TEE |
| 2 | 1875524.83 | 6429962.43 | TEE FOR FIRE HYDRANT PER WAS WF-01 |
| 3 | 1875525.54 | 6429957.48 | 4" GATE VALVE |
| 4 | ..... | ..... | NOT USED |
| 5 | ..... | ..... | NOT USED |
| 6 | 1875549.19 | 6429943.56 | 4" GATE VALVE |
| 7 | ..... | ..... | NOT USED |
| 8 | 1875529.77 | 6429986.06 | 4" D.I. 45° HORIZONTAL BEND |
| 9 | 1875534.95 | 6429992.99 | 4" D.I. 90° HORIZONTAL BEND |
| 10 | ..... | ..... | NOT USED |
| 11 | ..... | ..... | NOT USED |
| 12 | 1875536.44 | 6429994.99 | 4" D.I. 90° HORIZONTAL BEND |
| 13 | 1875539.84 | 6429999.54 | 4" D.I. 45° HORIZONTAL BEND |
| 14 | 1875576.70 | 6430004.89 | 4" D.I. 45° HORIZONTAL BEND |
| 15 | 1875589.60 | 6429995.26 | 4" D.I. 90° HORIZONTAL BEND |
| 16 | ..... | ..... | NOT USED |
| 17 | ..... | ..... | NOT USED |
| 18 | 1875528.16 | 6429987.24 | CONCRETE PAD CORNER |
| 19 | 1875540.67 | 6430004.00 | CONCRETE PAD CORNER |
| 20 | 1875524.83 | 6429962.43 | CONCRETE PAD CORNER |
| 21 | 1875533.86 | 6430009.09 | CONCRETE PAD CORNER |

## WATER PIPELINE DATA TABLE

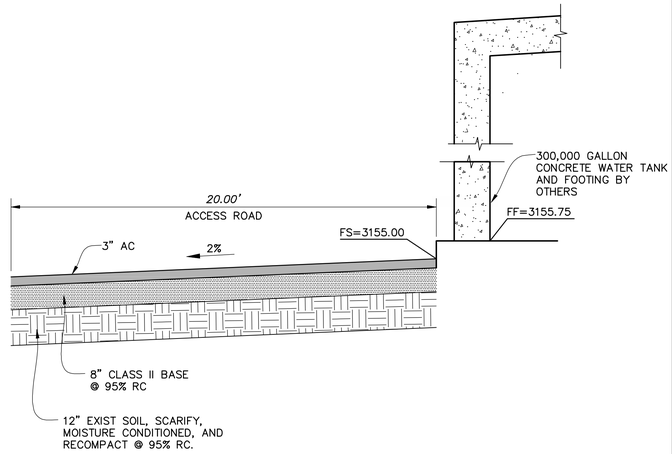
| SYMBOL | DELTA/BEARING | RADIUS | LENGTH | REMARKS |
|---|---|---|---|---|
| W14 | N08°14'35"E | ... | 92.65' | 10" PVC DR 18 C900 |
| W24 | N81°44'55"W | ... | 22.67' | 4" PVC DR 18 C900 |
| W25 | N53°15'05"E | ... | 3.05' | 4" PVC DR 18 C900 |
| W26 | N36°44'55"W | ... | 16.10' | 4" PVC DR 18 C900 |
| W27 | N08°15'05"E | ... | 37.24' | 4" PVC DR 18 C900 |
| W28 | N36°44'55"W | ... | 21.86' | 4" PVC DR 18 C900 |
| W29 | 38°13'32" | 115' | 76.72' | 4" PVC DR 18 C900 |

WATER NOTES:

1. ALL WATER PIPELINES SHALL HAVE 3' MINIMUM COVER.
2. INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT ALL VALVES, BENDS, TEES AND FITTINGS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 1300).
3. 4" PIPELINES TERMINATE 5' FROM FUTURE WATER STORAGE TANK. CONNECTIONS TO BE MADE BY CONCRETE TANK INSTALLER, CONTRACTOR TO COORDINATE WITH CONCRETE TANK INSTALLER.

FLOAT SWITCH LEVELS:

HIGH LEVEL ALARM – 3179.00
WELL #1 PUMP OFF – 3178.75
WELL #2 PUMP OFF – 3178.50
WELL #1 PUMP ON – 3176.25
WELL #2 PUMP ON – 3176.00
LOW LEVEL ALARM – 3165.25




A TANK ACCESS ROAD TYPICAL SECTION NO SCALE

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

FOR APPROVAL

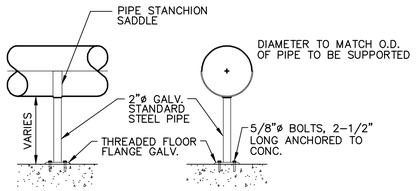
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
WATER AND WELL SYSTEM DETAILS

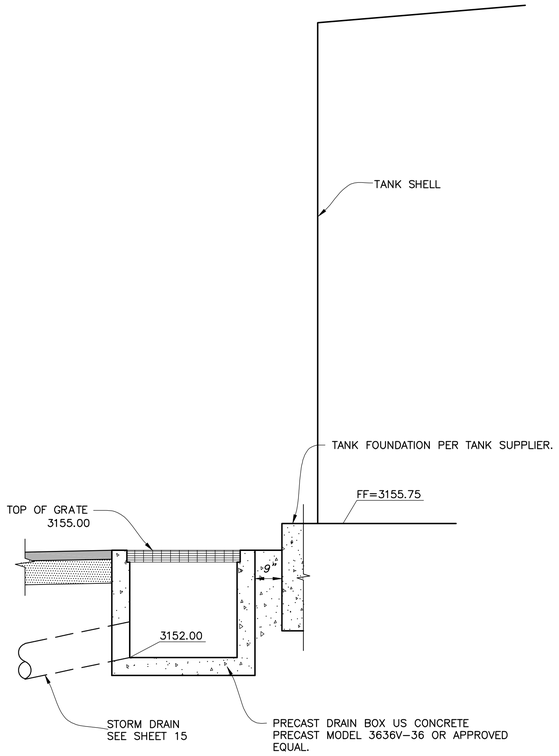
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | APS | DATE: 11/11/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 48 OF 66 | SCR-C-048 | |
| CAD NO.: | GP48 | PLOT SCALE: | 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD8039600\CADD\USFS\CIVIL\GP\GP48
XREFS:




A PIPE SUPPORT DETAIL NO SCALE




B PRECAST DRAIN BOX DETAIL 1" = 2'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

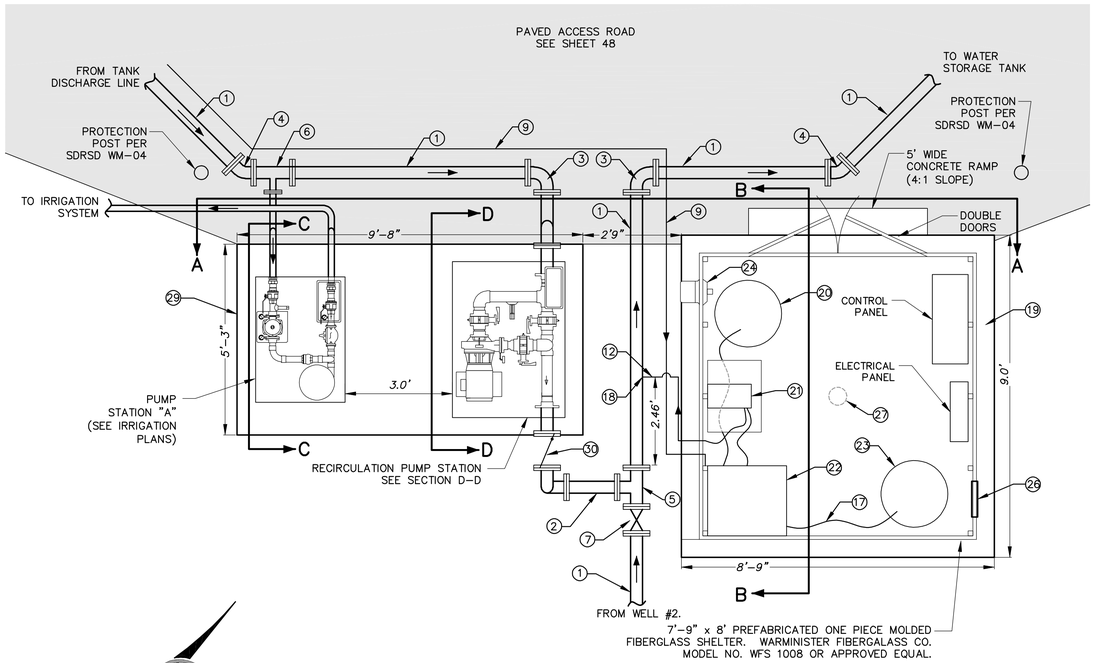
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
WATER AND WELL SYSTEM DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: APS | DATE: 11/11/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | SCR-C-049 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 49 OF 66 | | | |
| CAD NO.: GP49 | PLOT SCALE: 1=1 | | | | |

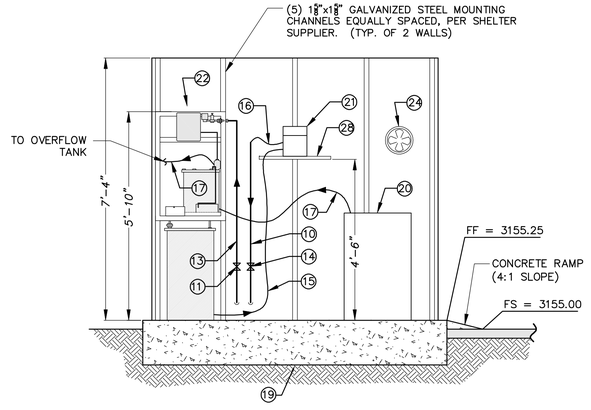
PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\CADD\USPS\CIVIL\GP\GP49
XREFS:



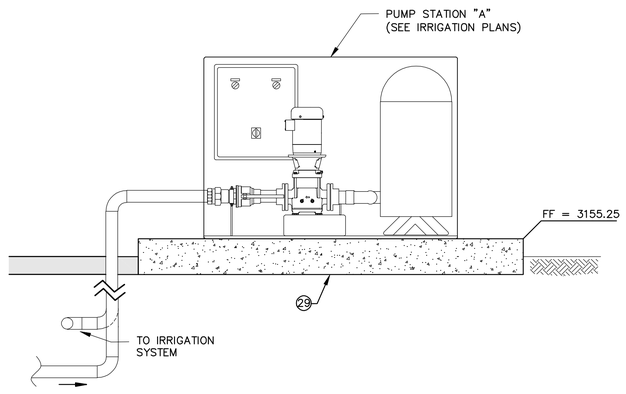

## CHLORINATION EQUIPMENT/RECIRCULATION SYSTEM SITE PLAN

SCALE 1"=2'



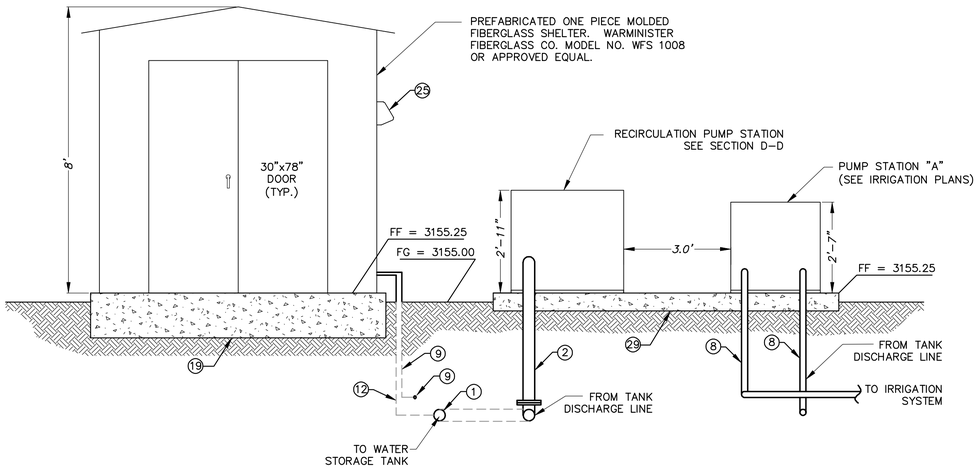

## SECTION B-B

SCALE 1"=2'




## SECTION C-C

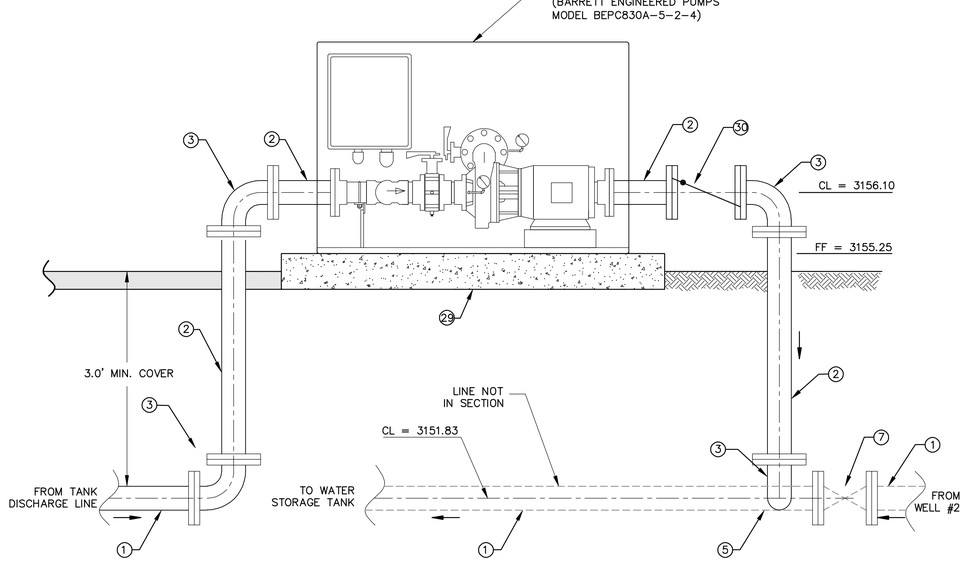
SCALE 1"=1'




NOTE:
1. UNLESS NOTED OTHERWISE BY THE PROJECT GEOTECHNICAL REPORT, ALL REQUIRED BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED BY THE ASTM DESIGNATION D-1557 (LATEST EDITION) METHOD OF COMPACTION.

## SECTION A-A

SCALE 1"=2'




## SECTION D-D

SCALE 1"=1'

## MATERIAL LIST:

1. 4" PVC WATER LINE
2. 4" D.I. WATER LINE
3. 4" D.I. 90° ELBOW, FLxFL
4. 4" D.I. 45° ELBOW, FLxFL
5. 4"x4"x4" D.I. TEE
6. 4"x4"x2" D.I. TEE
7. 4" GATE VALVE, FLxFL
8. 2" PVC WATER LINE
9. 1" PVC WATER LINE
10. ½" PVC WATER LINE (WALL MOUNTED)
11. ½" PVC BALL VALVE
12. ½" PVC CHLORINE FEED LINE
13. ½" PVC CHLORINE FEED LINE (WALL MOUNTED)
14. ½" VENTED PVC BALL VALVE
15. ⅜" O.D. CLEAR PVC TUBING (PER METERING PUMP SUPPLIER)
16. ⅜" O.D. NATURAL POLYETHELENE TUBING (PER METERING PUMP SUPPLIER)
17. ⅜" O.D. CLEAR PVC TUBING WITH 36" DRUM WAND (PER PACKAGE DILUTION SYSTEM SUPPLIER)
18. CHLORINE INJECTOR (SERVICE SADDLE WITH ½" NPT CORPORATION STOP AND PVC INJECTION QUILL)
19. CONCRETE FOUNDATION, SEE DETAIL B, SHEET 54
20. 55 GALLON DRUM (PER SODIUM HYPOCHLORITE SUPPLIER)
21. CHEMICAL METERING PUMP (BLUE WHITE INDUSTRIES PRO SERIES FLEX-PRO MODEL A3V)
22. PACKAGE DILUTION SYSTEM (FORCEFLOW MERLIN MD5-5D)
23. 55 GALLON OVERFLOW TANK (CHEM-TAINER OR APPROVED EQUAL)
24. EXHAUST FAN W/SHUTTER - 140 CFM (PER SHELTER SUPPLIER)
25. FIBERGLASS EXHAUST FAN CANOPY W/SCREEN (PER SHELTER SUPPLIER)
26. 12"X12" PVC VENT W/FRP GRAVITY SHUTTER AND INSECT SCREEN (PER SHELTER SUPPLIER)
27. VAPOR TIGHT LAMP WITH GLOBE AND GUARD (PER SHELTER SUPPLIER)
28. 24"x18" GALVANIZED STEEL SHELF (100 LB HOLDING CAPACITY)
29. CONCRETE EQUIPMENT PAD, SEE DETAIL E, SHEET 54
30. 4" CHECK VALVE WITH INTEGRAL LIMIT SWITCH

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
WATER AND WELL SYSTEM DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | APS | DATE: 11/11/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 50 OF 66 | SCR-C-050 | |
| CAD NO.: | GP50 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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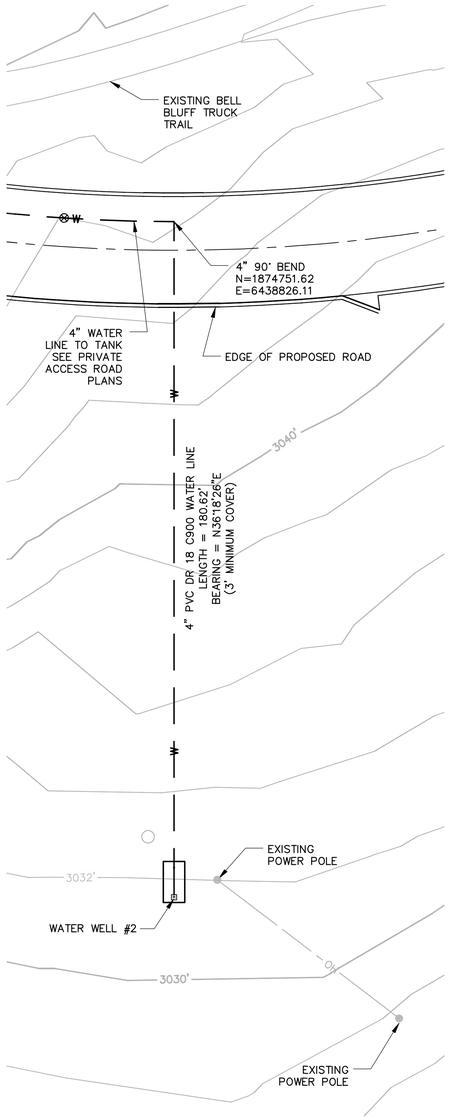
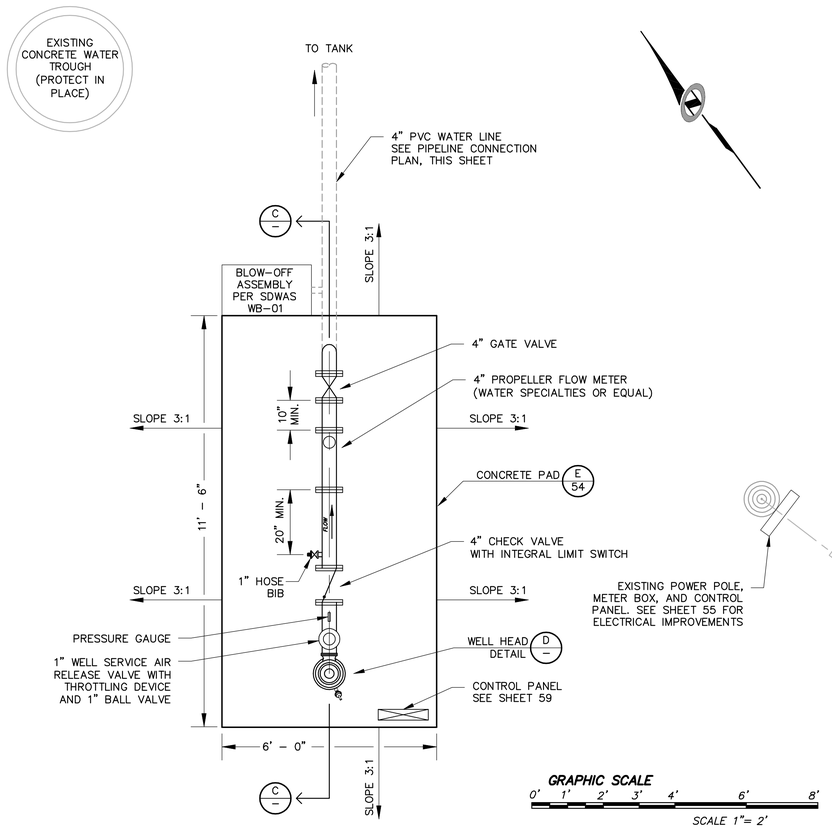
XREFS:

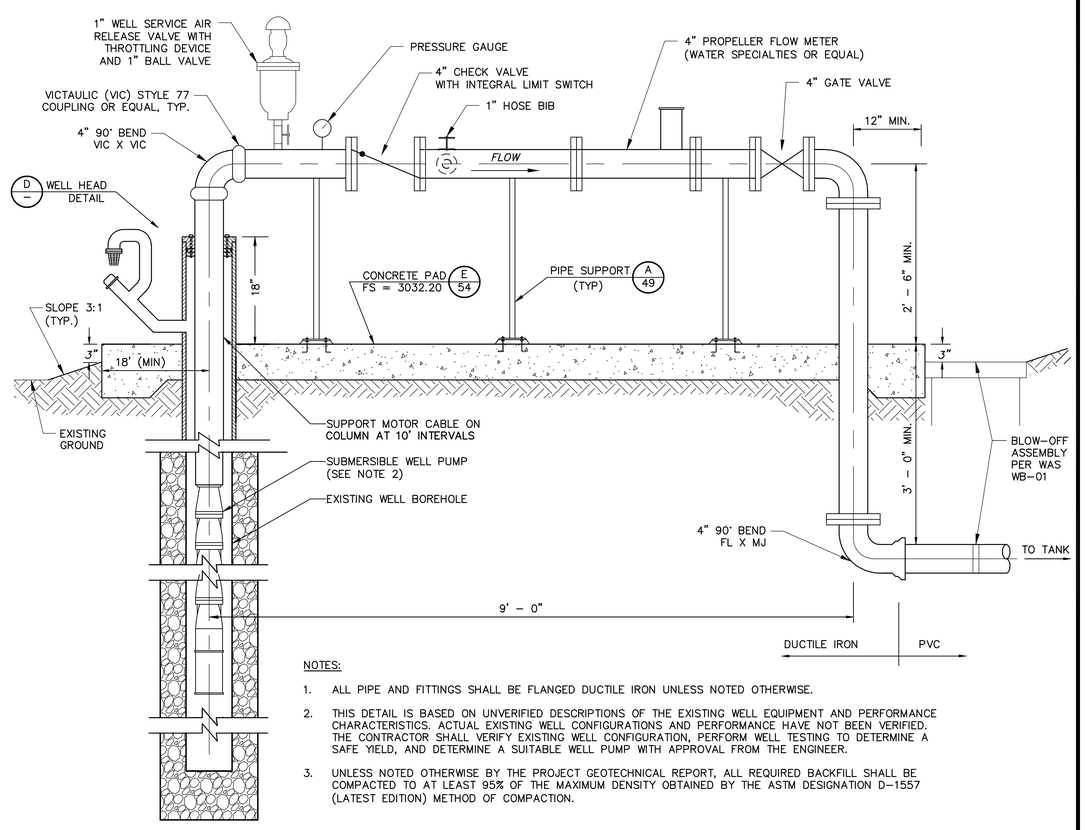



## A WELL #2 PIPELINE CONNECTION




## B WELL #2 SITE PLAN

1" = 2'




NOTES:

1. ALL PIPE AND FITTINGS SHALL BE FLANGED DUCTILE IRON UNLESS NOTED OTHERWISE.
2. THIS DETAIL IS BASED ON UNVERIFIED DESCRIPTIONS OF THE EXISTING WELL EQUIPMENT AND PERFORMANCE CHARACTERISTICS. ACTUAL EXISTING WELL CONFIGURATIONS AND PERFORMANCE HAVE NOT BEEN VERIFIED. THE CONTRACTOR SHALL VERIFY EXISTING WELL CONFIGURATION, PERFORM WELL TESTING TO DETERMINE A SAFE YIELD, AND DETERMINE A SUITABLE WELL PUMP WITH APPROVAL FROM THE ENGINEER.
3. UNLESS NOTED OTHERWISE BY THE PROJECT GEOTECHNICAL REPORT, ALL REQUIRED BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED BY THE ASTM DESIGNATION D-1557 (LATEST EDITION) METHOD OF COMPACTION.

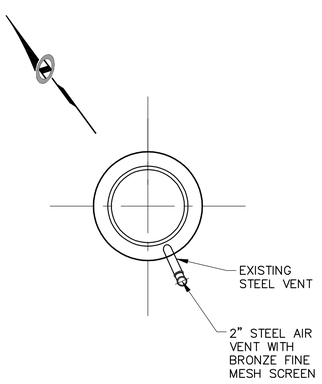
## C WELL #2 SECTION

1" = 1'

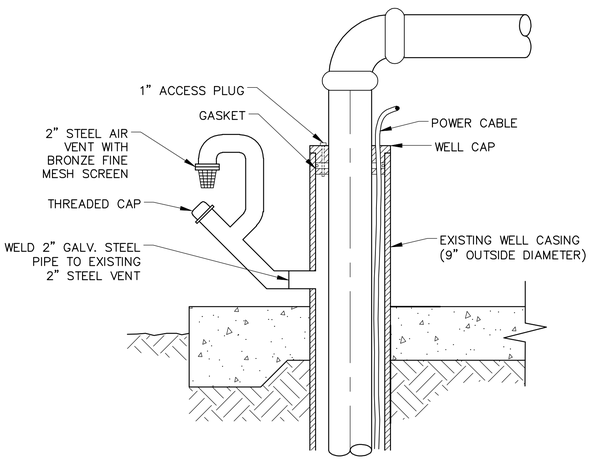
### EXISTING WELL #2 DEMOLITION NOTES

1. THE EXISTING STEEL WELL CASING AND VENT SHALL BE PROTECTED IN PLACE DURING DEMOLITION. ANY DAMAGE TO THE WELL CASING OR VENT SHALL BE REPAIRED AT NO ADDITIONAL COST AND IN A MANNER SATISFACTORY TO SDGE.
2. REMOVE THE EXISTING WELL PUMP, PUMP COLUMN AND PUMP MOTOR.
3. REMOVE THE EXISTING CONCRETE WELL PAD AND ALL ABOVE GROUND PIPING, VALVES AND APPURTENANCES.
4. CUT AND CAP EXISTING UNDERGROUND PIPING A MINIMUM OF 12" FROM THE PROPOSED CONCRETE WELL PAD.

## E EXISTING WELL #2 DEMOLITION NOTES AND PHOTO




PLAN VIEW




PROFILE

## D WELL #2 HEAD DETAIL

1" = 8"

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
WATER AND WELL SYSTEM DETAILS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DRAWN BY: | MJ | DATE: 11/11/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | SCR-C-051 | |
| CHECKED BY: | RWM | DATE: – | | | | | |
| APPROVED BY: | CR | DATE: – | SHEET 51 OF 66 | | | | |
| CAD NO.: | GP51 | PLOT SCALE: | 1=1 | | | | |

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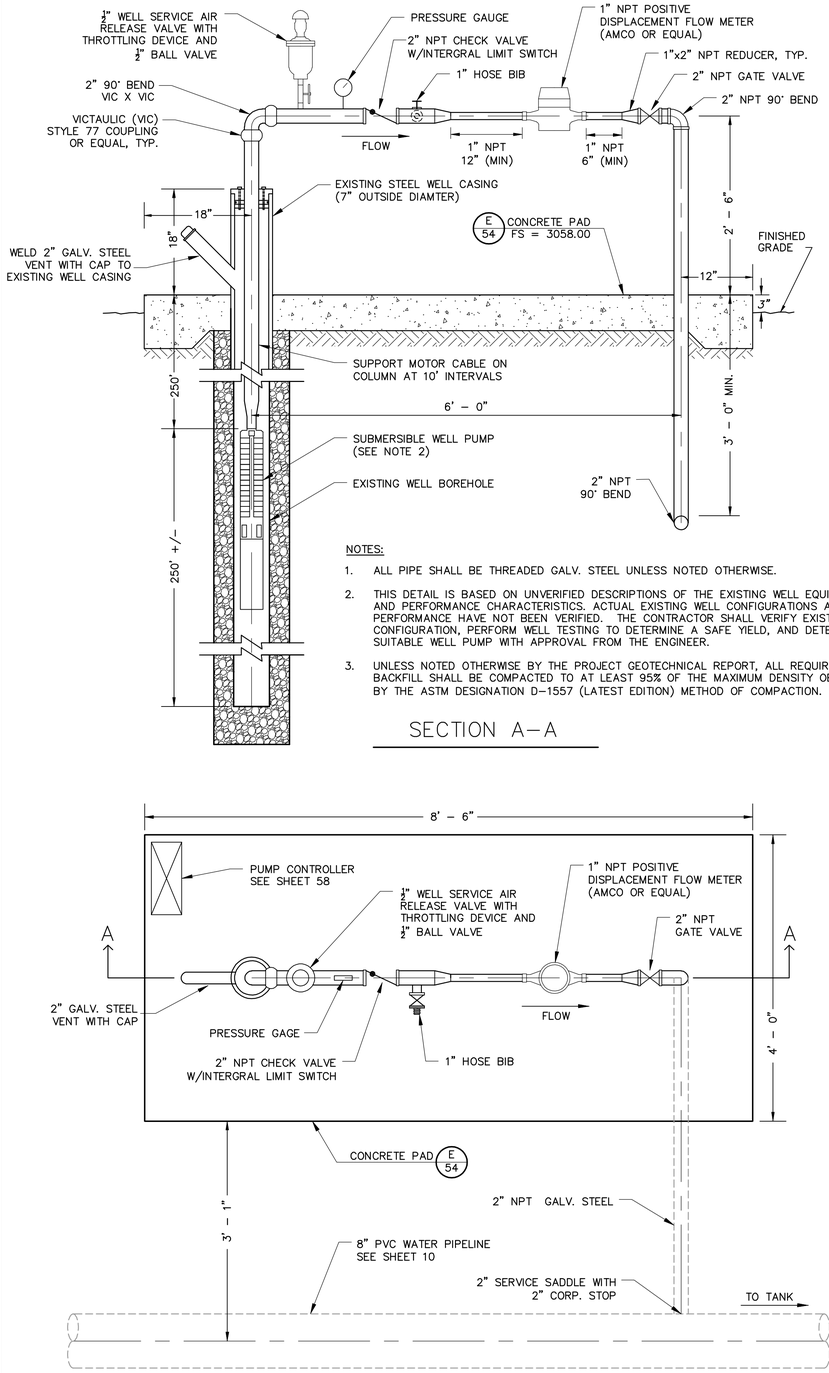
XREFS:

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09




NOTES:

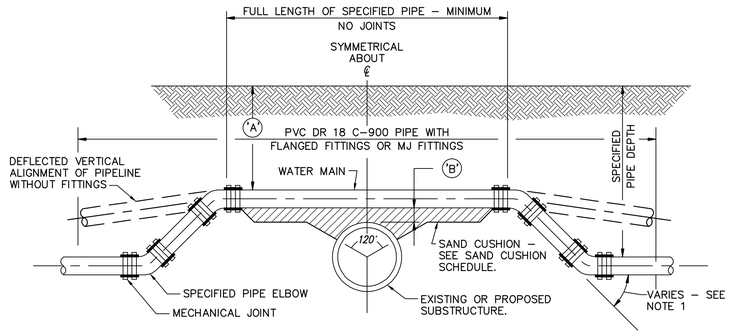
1. ALL PIPE SHALL BE THREADED GALV. STEEL UNLESS NOTED OTHERWISE.
2. THIS DETAIL IS BASED ON UNVERIFIED DESCRIPTIONS OF THE EXISTING WELL EQUIPMENT AND PERFORMANCE CHARACTERISTICS. ACTUAL EXISTING WELL CONFIGURATIONS AND PERFORMANCE HAVE NOT BEEN VERIFIED. THE CONTRACTOR SHALL VERIFY EXISTING WELL CONFIGURATION, PERFORM WELL TESTING TO DETERMINE A SAFE YIELD, AND DETERMINE A SUITABLE WELL PUMP WITH APPROVAL FROM THE ENGINEER.
3. UNLESS NOTED OTHERWISE BY THE PROJECT GEOTECHNICAL REPORT, ALL REQUIRED BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DENSITY OBTAINED BY THE ASTM DESIGNATION D-1557 (LATEST EDITION) METHOD OF COMPACTION.

SECTION A–A

PLAN VIEW

## (A) WELL #1 EQUIPPING PLAN

1" = 1'



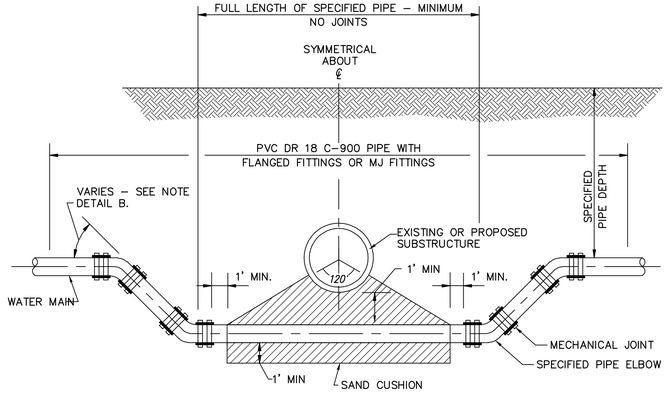

| SAND CUSHION SCHEDULE – DIMENSION 'B' | | |
|---|---|---|
| PIPE DEPTH | LESS THAN 3' | 'B' DIMENSION SHALL BE A MINIMUM OF 12 INCHES IF 'A' IS 3 FEET OR LESS. |
| | MORE THAN 3' | 'B' DIMENSION SHALL BE A MINIMUM OF 6 INCHES IF 'A' IS IN EXCESS OF 3 FEET. |

NOTE: IF DIMENSION 'A' IS LESS THAN 30 INCHES, CROSSING SHALL BE INSTALLED PER DETAIL C THIS SHEET.

NOTES:

1. MAXIMUM ALLOWABLE ANGLE OF FITTINGS = 45°.
2. MAXIMUM ALLOWABLE PIPE JOINT DEFLECTION SHALL BE MANUFACTURER'S RECOMMENDATION.
3. IF RETURN TO DESIGNED PIPE DEPTH BY DEFLECTION CANNOT BE ACCOMPLISHED WITHIN 2 STANDARD PIPE LENGTHS (40 FEET), PIPE FITTINGS AND APPURTENANCES SHALL BE REQUIRED, UNLESS OTHERWISE NOTED OR DIRECTED IN THE FIELD.
4. INSTALL INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT BENDS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 1300)
5. AIR VACUUM RELEASE ASSEMBLY INSTALLATION PER WAS WA-02 AND WA-06 MAY BE REQUIRED AS DETERMINED IN THE FIELD OR INDICATED BY ENGINEERING DESIGN.

## (B) UTILITY CROSSING (OVER) DETAIL




NOTES:

1. INSTALL INSTALL JOINT RESTRAINT SYSTEM AS REQUIRED AT BENDS TO MEET PRESSURE TEST REQUIREMENTS (SEE SPECIFICATION SECTION 1300)
2. BLOWOFF ASSEMBLIES PER WAS WB-01 MAY BE REQUIRED AS DETERMINED IN THE FIELD OR INDICATED BY ENGINEERING DESIGN.

## (C) UTILITY CROSSING (UNDER) DETAIL

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

WATER AND WELL SYSTEM DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: APS | DATE: 11/11/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | SCR-C-052 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 52 OF 66 | | | |
| CAD NO.: GP52 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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XREFS:

## CONCRETE:

1. CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CBC, REFERENCED EDITION.
2. REFER TO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ALL MOLDS, GROOVES, ETC., TO BE CAST IN CONCRETE.
3. REFER TO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE LOCATION OF SLEEVES, INSERTS, ETC., IN CONCRETE.
4. FOR SIZE, NUMBER AND EXACT LOCATION OF ALL SLAB OPENINGS, SEE STRUCT., MECH., ELECT & PLUMBING DRAWINGS.
5. ALL REINFORCING BARS, ANCHOR BOLTS AND INSERTS SHALL BE WELL SECURED PRIOR TO POURING CONCRETE.
6. STRUCTURAL CONCRETE COMPRESSIVE DESIGN STRENGTH AT 28 DAYS, UNLESS NOTED OTHERWISE IN THE CONTRACT PLANS AND/OR SPECIFICATIONS SHALL BE 3000 psi
7. SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL CONCRETE CONSTRUCTION AS SPECIFIED BY SECTION 1701 OF THE CBC, REFERENCED EDITION.
8. ALL EXPOSED CONCRETE EDGES SHALL HAVE 3/4" CHAMFER.

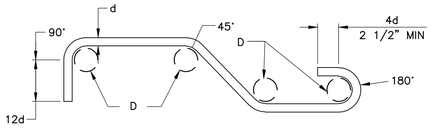
## REINFORCING STEEL:

1. DETAILING, FABRICATION AND PLACEMENT OF REINFORCING BARS (UNLESS OTHERWISE NOTED) MUST FOLLOW THE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, A.C.I. 315 LATEST EDITION.
2. ALL REINFORCING BARS SHALL CONFORM TO THE STANDARD SPECIFICATION FOR DEFORMED BILLET–STEEL BARS FOR CONCRETE REINFORCEMENT, ASTM DESIGNATION A615–85: GRADE 60 EXCEPT #3 RE–BARS SHALL BE GRADE 40.
3. LAP ALL SPLICES IN CONCRETE AS "CLASS B" SPLICES MINIMUM, UNLESS OTHERWISE SHOWN.
4. REINFORCING STEEL SHALL HAVE A MINIMUM CONCRETE COVER AS TABULATED BELOW UNLESS OTHERWISE NOTED.
   A. FOOTINGS AND SLABS CAST AGAINST EARTH ..... 3–IN.
   B. WALLS AND SLABS EXPOSED TO WEATHER ..... 2–IN.
5. WHERE CONTINUOUS BARS ARE CALLED OUT, PROVIDE CONTACT SPLICES (AS REQUIRED) IN ACCORDANCE WITH REINFORCING STEEL NOTE NO. 3. STAGGER SPLICES OF ALL CONTINUOUS BARS.
6. DOWELS INSTALLED INTO EXISTING CONCRETE SHALL BE DRILLED AND BONDED IN PLACE WITH EPOXY. EPOXY SHALL BE SIMPSON SET–XP OR HILTI HIT–RE 500–SD.
7. BOTTOM STEEL OF SLABS, FOOTINGS AND GRADE BEAMS SHALL BE SUPPORTED OFF OF THE EARTH OR FORMS BY PRECAST CONCRETE BLOCKS WIRE TIED TO THE REINFORCEMENT.
8. WHERE LAP LENGTHS ARE NOT SHOWN ON THE DRAWING LAPS SHALL BE AS SHOWN IN THE TABLE BELOW:

### REINFORCEMENT LAP SPLICES:

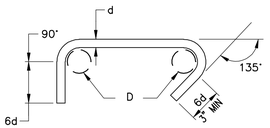
| REINFORCED CONCRETE | | | | | | | | | f'c = 3000 PSI AT 28 DAYS |
|---|---|---|---|---|---|---|---|---|---|
| REINF LOCATION | REINFORCEMENT SIZE | | | | | | | | |
| | #3 GR40 | #4 | #5 | #6 | #7 | #8 | #9 | #10 | #11 |
| ALL | 20 | 38 | 47 | 56 | 82 | 94 | 106 | 119 | 132 |

(LENGTH IN INCHES)



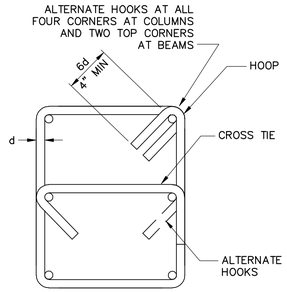

TYPICAL HOOKS AND BENDS (PRINCIPAL REINFORCING)

| |
|---|
| D = 6d FOR #3 TO #8 |
| D = 8d FOR #9 TO #11 |
| D = 10d FOR #14 TO #18 |



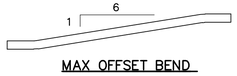

CROSS TIES AND STIRRUPS

| |
|---|
| MINIMUM D = 1½" FOR #3 |
| MINIMUM D = 2" FOR #4 |
| MINIMUM D = 2½" FOR #5 |



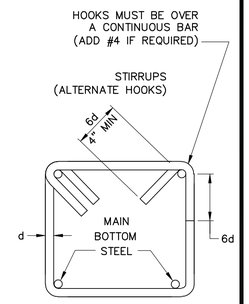

MAX SPACING = 12" AT SEISMIC TIES UNO

COLUMN & BEAM TIE




MAX OFFSET BEND

NOTE:
ALL BENDS SHALL BE MADE COLD.




MAX SPACING = 12" AT SEISMIC TIES UNO

BEAM STIRRUP

## DESIGN CRITERIA:

1. SEISMIC
   OCCUPANCY CATEGORY IV
   Ie = 1.50
   Ss = 1.10g
   S1 = 0.37g
   S = 0.78g
   S = 0.41g
   SEISMIC DESIGN CATEGORY D
   Ri = 3.0
   Rc = 1.5
   Site Class D
2. WIND
   OCCUPANCY CATEGORY IV
   I = 1.15
   BASIC WIND SPEED = 85 MPH (3–SECOND GUST)
   EXPOSURE C

## SPECIAL INSPECTION:

1. SPECIAL INSPECTION AS SPECIFIED BY SECTION 1701 OF THE CBC, REFERENCED EDITION IS REQUIRED FOR:
   A. ALL CONCRETE WORK.
   B. ALL ANCHOR BOLT INSTALLATIONS.
   C. ALL WELDING.
   D. ALL EXPOXIED ANCHORS & REINFORCING.

## GENERAL:

1. NOTIFY SDG&E OF ANY DISCREPANCIES FOUND BEFORE PROCEEDING WITH THE WORK.
2. THE CONTRACTOR SHALL NOTIFY SDG&E OF ANY SITE CONDITIONS NOT REFLECTED ON THE DRAWINGS; OF DISCREPANCIES IN MIN. DIMENSIONS INDICATED, SUCH AS GREATER RETAINED EARTH HEIGHTS, CONFLICT IN GRADES, EXTENTS OF BAD SOIL, DEPTH OF GROUND WATER, DEPTHS OF FOUNDATIONS, ETC., AND ESPECIALLY OF UNCOVERED AND UNEXPECTED UTILITY LINES.
3. ALL WORK NOT DETAILED OR NOTED SHALL BE CONSTRUCTED IN ACCORDANCE WITH OTHER SIMILAR WORK SHOWN ON THE DRAWINGS AND ON TYPICAL DETAILS.
4. NO PIPES OR DUCTS SHALL BE PLACED IN FOUNDATIONS UNLESS SPECIFICALLY DETAILED OR APPROVED BY SDG&E.
5. DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION INCLUDING SHORING, FORMING, AND TEMPORARY BRACING. HE SHALL UNDERTAKE ALL NECESSARY MEASURES TO INSURE SAFETY OF ALL PERSONS AND STRUCTURES AT THE SITE. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE REVIEW OF THESE MEASURES.

## SOIL & FOUNDATION:

1. REFERENCES:
   GEOTECHNICAL INVESTIGATION: "SUNCREST SUBSTATION – SDG&E 500kV SUNRISE POWERLINK PROJECT" BY URS CORPORATION, DATED JUNE 8, 2009.
2. ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF (DEAD PLUS LIVE) (1/3 INCREASE ALLOWED FOR TRANSIENT WIND / SEISMIC LOADS ).
3. NO CONCRETE OR REBAR SHALL BE PLACED IN ANY FOUNDATION UNTIL THE EXCAVATION HAS BEEN INSPECTED BY SDG&E.

REGISTERED PROFESSIONAL ENGINEER
DAN GAGNE
No. 63095
Exp. 06–30–10
CIVIL
STATE OF CALIFORNIA

NOLTE
BEYOND ENGINEERING

A REINFORCING HOOK & BEND DETAILS

NO SCALE

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

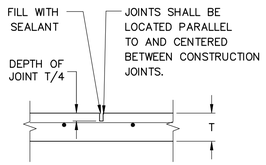
SUNCREST SUBSTATION

STRUCTURAL NOTES FOR WATER SYSTEM

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: APS | DATE: 11/11/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 | SCR–C–053 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 53 OF 66 | | | |
| CAD NO.: GP53 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

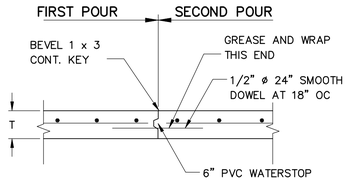
N:\SDB039600\CAD\USFS\CIVIL\GP\GP53




NOTES:

1. REINFORCING CONTINUOUS THRU JOINT.
2. SPACE JOINTS NO THAN 25T EACH WAY. CONSTRUCTION MANGER TO LOCATE.
3. JOINTS MAY BE SAWCUT WITHIN 4 HOURS, FORMED OR USE "QUICK JOINT" OR APPROVED EQUAL.

CONTROL/SAW-CUT JOINT

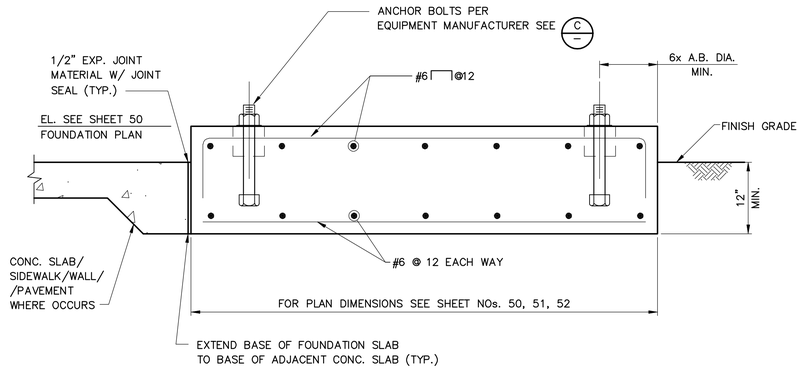



NOTES:

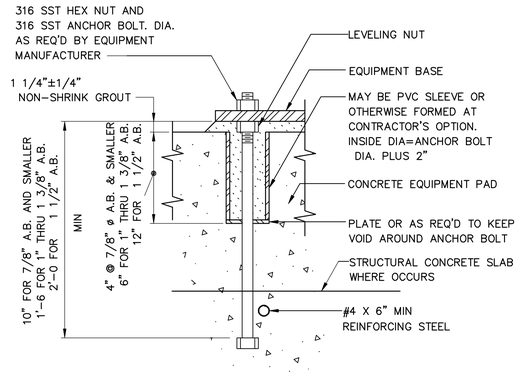
1. REINFORCING NOT CONTINUOUS THRU JOINT
2. PLACE SLAB-ON-GRADE AND LOCATE CONSTRUCTION JOINTS.
3. AVOID REENTRANT CORNERS.
4. CONTRACTORS OPTION TO POUR IN CHECKER BOARD METHOD.
5. CONTRACTOR TO SUBMIT PROPOSED JOINT LAYOUT FOR REVIEW.
6. POUR ADJACENT SLABS AT LEAST EIGHT HOURS APART.

CONSTRUCTION JOINT

## A SLAB JOINT DETAIL — NO SCALE

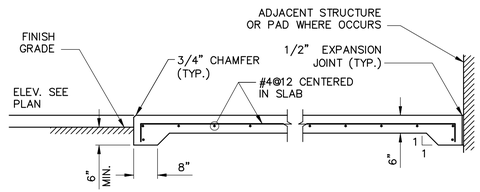



## B CHLORINATION SHELTER FOUNDATION SLAB — NO SCALE

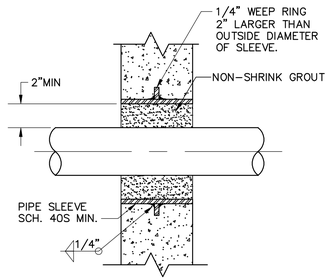



NOTE: PROVIDE LONGER AB EMBEDMENT IF REQUIRED BY EQUIPMENT MANUFACTURER. PROVIDE MIN 3" CONC COVER @ AB.

## C EQUIPMENT ANCHOR BOLT — NO SCALE




## E CONCRETE PAD DETAIL — NO SCALE




## G PIPE PENETRATION DETAIL — NO SCALE

REGISTERED PROFESSIONAL ENGINEER — DAN GAGATE — No. 63095 Exp. 06-30-10 — CIVIL — STATE OF CALIFORNIA

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

STRUCTURAL DETAILS FOR WATER SYSTEM

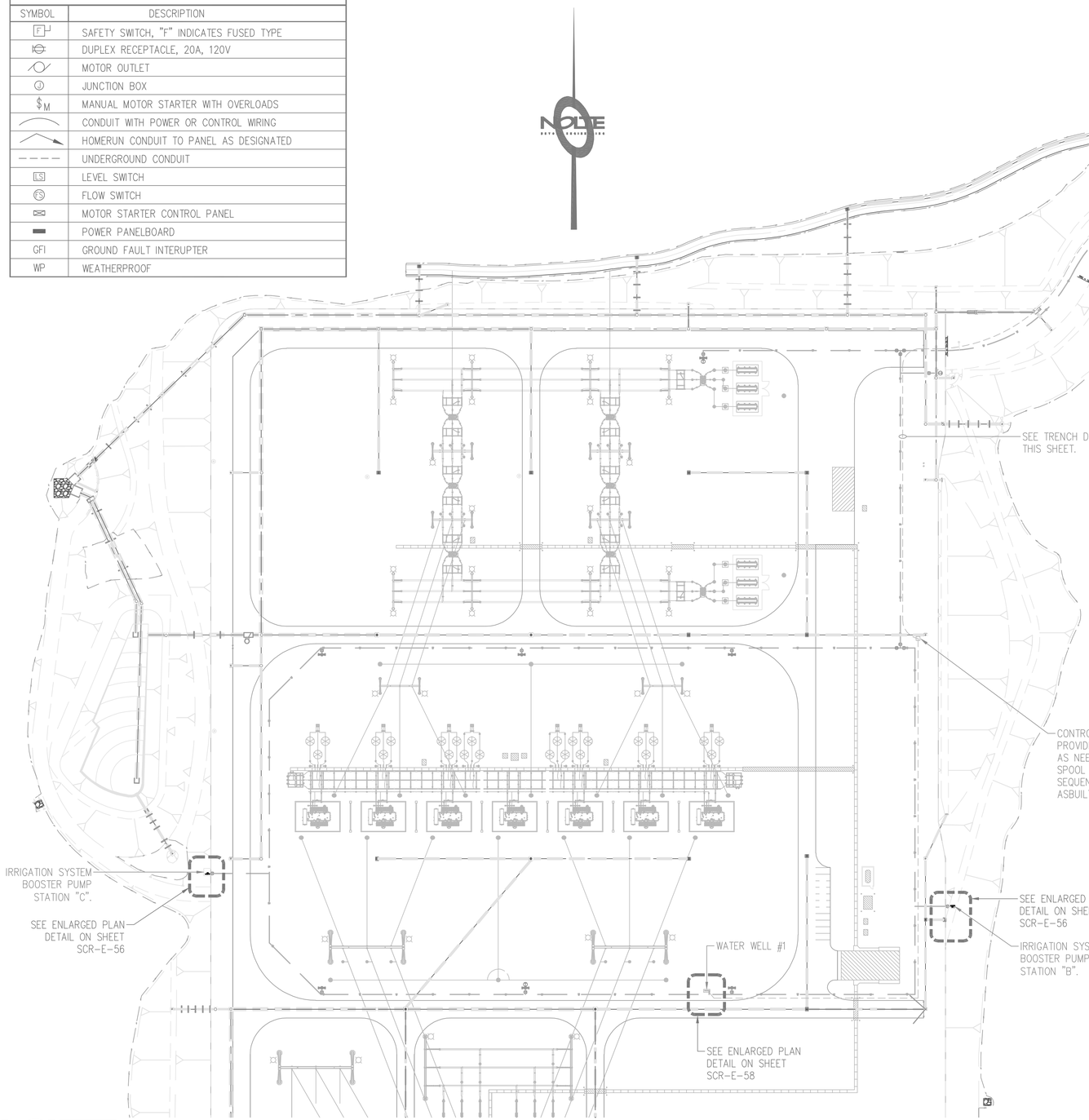
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | APS | DATE: 11/18/09 | SCALE: 1"=30' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 54 OF 66 | | |
| CAD NO.: | GP54 | PLOT SCALE: 1=1 | | | |

SCR-C-054

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

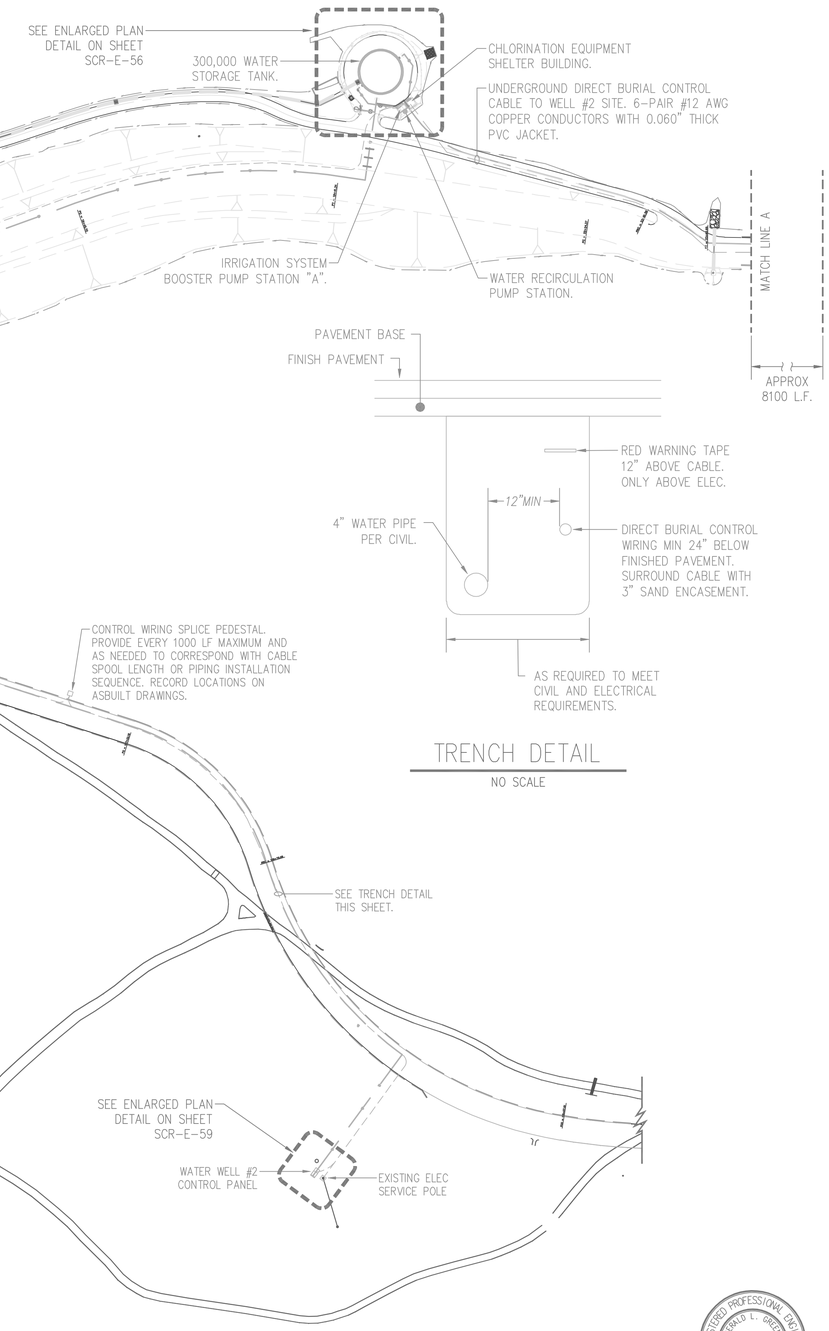
N:\SD8039600\CADD\USFS\CIVIL\GP\GP54

| ELECTRICAL SYMBOLS | |
|---|---|
| SYMBOL | DESCRIPTION |
| F | SAFETY SWITCH, "F" INDICATES FUSED TYPE |
| | DUPLEX RECEPTACLE, 20A, 120V |
| | MOTOR OUTLET |
| J | JUNCTION BOX |
| $M | MANUAL MOTOR STARTER WITH OVERLOADS |
| | CONDUIT WITH POWER OR CONTROL WIRING |
| | HOMERUN CONDUIT TO PANEL AS DESIGNATED |
| | UNDERGROUND CONDUIT |
| LS | LEVEL SWITCH |
| FS | FLOW SWITCH |
| | MOTOR STARTER CONTROL PANEL |
| | POWER PANELBOARD |
| GFI | GROUND FAULT INTERUPTER |
| WP | WEATHERPROOF |




## SUBSTATION AREA SITE ELECTRICAL PLAN

1"=80'-0"




## WATER WELL #2 SITE ELECTRICAL PLAN

1"=80'-0"




## TRENCH DETAIL

NO SCALE


NOLTE BEYOND ENGINEERING

REGISTERED PROFESSIONAL ENGINEER GERALD L. GREEN No. E015691 Exp. 06-30-10 ELECTRICAL STATE OF CALIFORNIA

G4 ENGINEERING, INC. electrical consultants
825 KUHN DRIVE, SUITE 103
CHULA VISTA, CA 91914
(619) 934-0825 PH (619) 934-0825 FAX


REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

90% CONSTRUCTION DOCUMENT

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

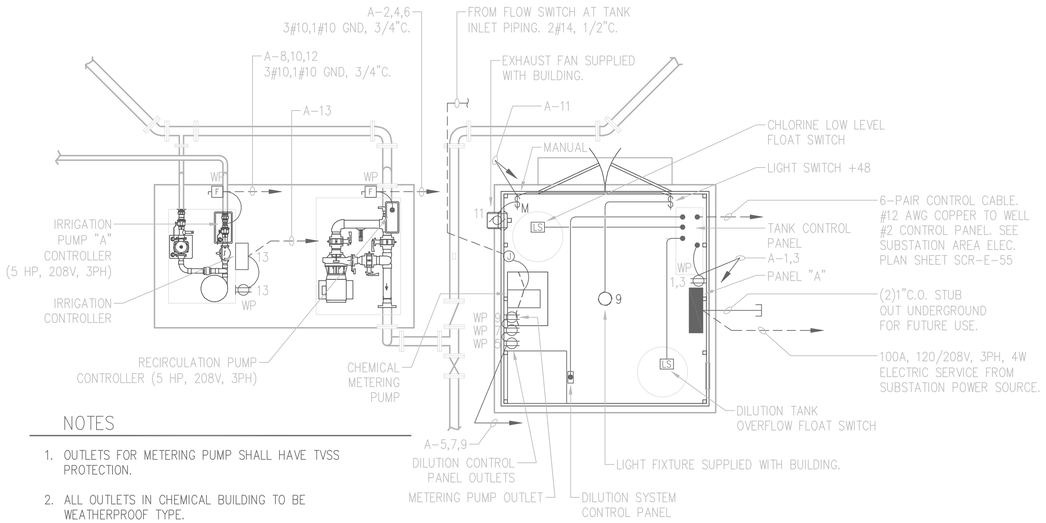
SUNCREST SUBSTATION

SUBSTATION AREA AND WATER WELL #2 SITE ELEC PLANS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DG | DATE: 11/23/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | GG | DATE: 11/07/09 | | | |
| APPROVED BY: | GG | DATE: AS NOTED | SHEET 55 OF 66 | SCR-C-055 | |
| CAD NO.: GP55,56,57,58,59 | | PLOT SCALE: 1:1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/07/09

N:\SDBG3600\CADD\USFS\CIVIL\GP\ELECTRICAL - G4\GP55,56,57,58,59
XREFS:

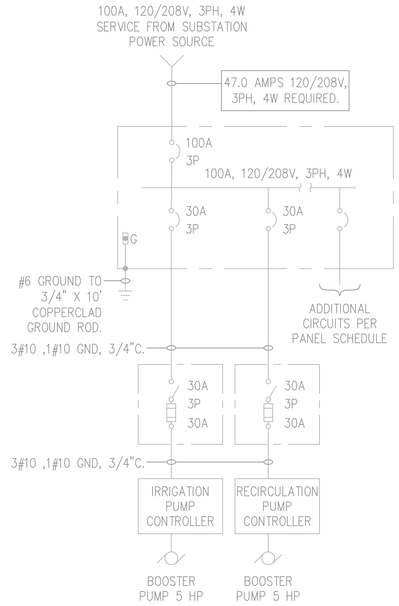



NOTES

1. OUTLETS FOR METERING PUMP SHALL HAVE TVSS PROTECTION.
2. ALL OUTLETS IN CHEMICAL BUILDING TO BE WEATHERPROOF TYPE.

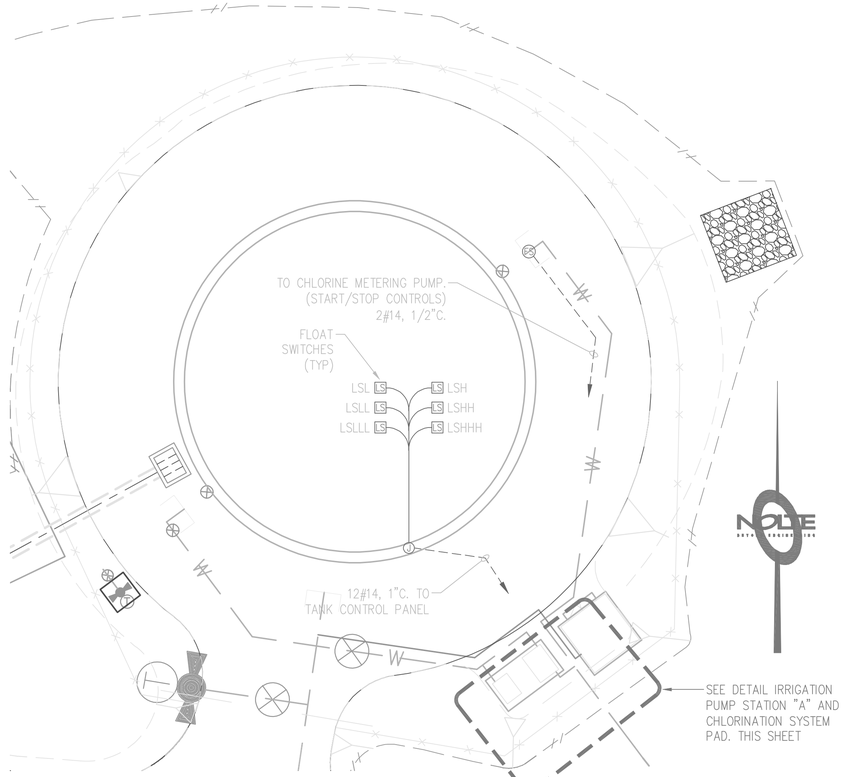
## IRRIGATION PUMP STATION "A" AND CHLORINATION ELECTRICAL PLAN

3/8"=1'-0"




## CHLORINATION BUILDING SINGLE LINE DIAGRAM

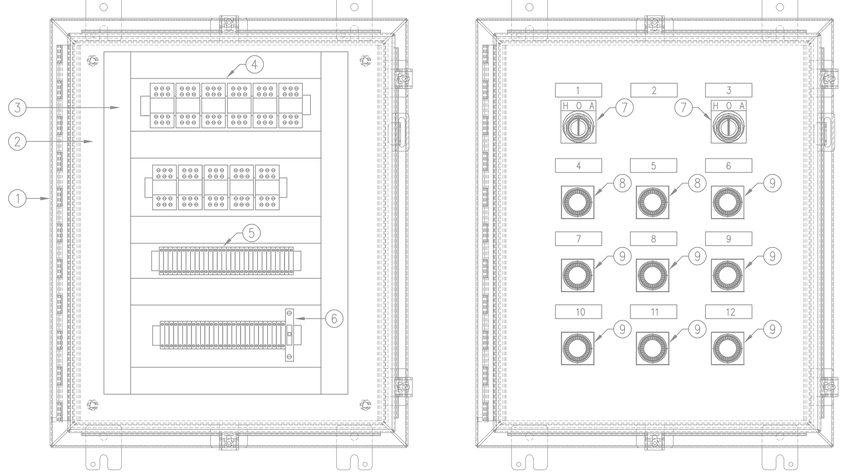
NO SCALE




## TANK ELECTRICAL PLAN

1"=10'-0"

PART NUMBERS LISTED ARE INTENDED TO REFLECT THE GENERAL INTENT OF THE PROJECT REQUIREMENTS. THE SUPPLIER SHALL VERIFY THAT THE COMPONENTS ARE PROPERLY RATED FOR THE INTENDED APPLICATION.




MATERIAL SCHEDULE

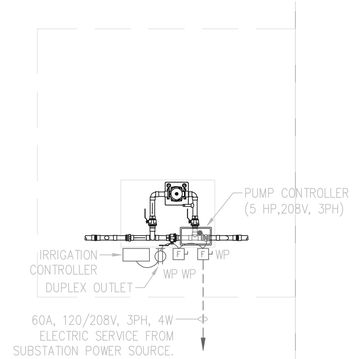
| ITEM | MANUFACTURER | DESCRIPTION |
|---|---|---|
| 1 | HOFFMAN | NEMA 4 ENCLOSURE A-24H120BLP |
| 2 | HOFFMAN | A-24P20 |
| 3 | PANDUIT | 1 1/2" x 3" WIREWAY |
| 4 | ALLEN BRADLEY | RELAYS 700-HA33A1, 700-HN26 |
| 5 | PHOENIX CONTACT | TERMINAL BLOCK UK5 |
| 6 | ALLEN BRADLEY | CIRCUIT BREAKER 1492-SP1C150 |
| 7 | ALLEN BRADLY | 3 POSITION SWITCH 800T-J2A |
| 8 | ALLEN BRADLEY | LIGHT 800T-PT16G |
| 9 | ALLEN BRADLEY | LIGHT 800T-PT16R |

NAMEPLATE SCHEDULE

| ITEM | |
|---|---|
| 1 | PUMP 1 |
| 2 | TANK FILL CONTROL PANEL |
| 3 | PUMP 2 |
| 4 | PUMP 1 RUNNING |
| 5 | PUMP 2 RUNNING |
| 6 | TANK HIGH LEVEL ALARM |
| 7 | TANK LOW LEVEL ALARM |
| 8 | PUMP 1 POWER LOSS |
| 9 | PUMP 2 POWER LOSS |
| 10 | CL2 LOW LEVEL ALARM |
| 11 | DILUTION TANK ALARM |
| 12 | DILUTION TANK OVERFLOW ALARM |

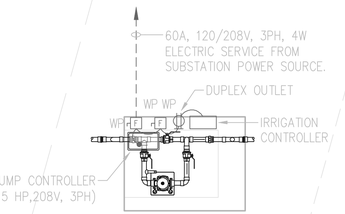
## TANK FILL CONTROL PANEL DETAIL

NO SCALE




## IRRIGATION PUMP STATION "C" ELECTRICAL PLAN

3/8"=1'-0"




## IRRIGATION PUMP STATION "B" ELECTRICAL PLAN

3/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
GERALD L. GREEN
E015691
Exp. 06-30-10
ELECTRICAL
STATE OF CALIFORNIA

G4 ENGINEERING, INC. electrical consultants
825 KUHN DRIVE, SUITE 103
CHULA VISTA, CA 91914
(619) 934-0825 PH (619) 934-0825 FAX

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

90% CONSTRUCTION DOCUMENT

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

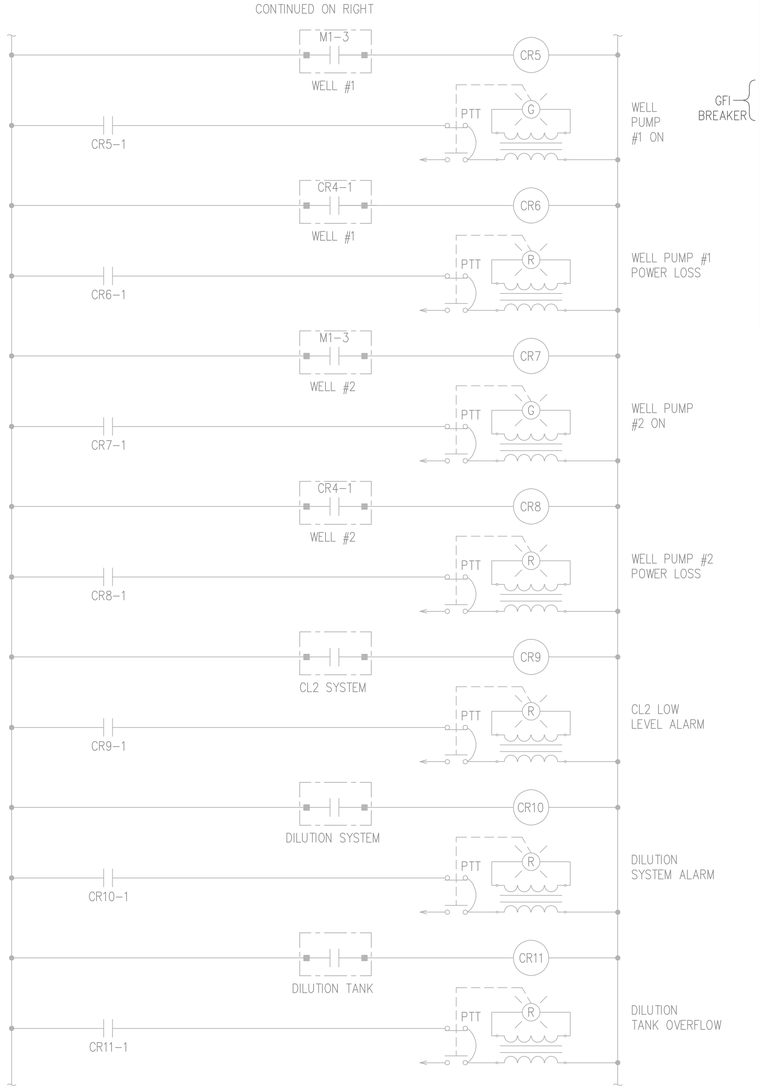
SUNCREST SUBSTATION

TANK CONTROLS, IRRIG A, B, C, AND TANK AREA ELEC PLANS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DG | DATE: 11/23/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | GG | DATE: 11/07/09 | | | |
| APPROVED BY: | GG | DATE: AS NOTED | SHEET 56 OF 66 | SCR-C-056 | |
| CAD NO.: GP55,56,57,58,59 | | PLOT SCALE: 1:1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/07/09

N:\SDGE0396\CADD\USFS\CIVIL\GP\ELECTRICAL - G4\GP55,56,57,58,59
XREFS:




GFI BREAKER

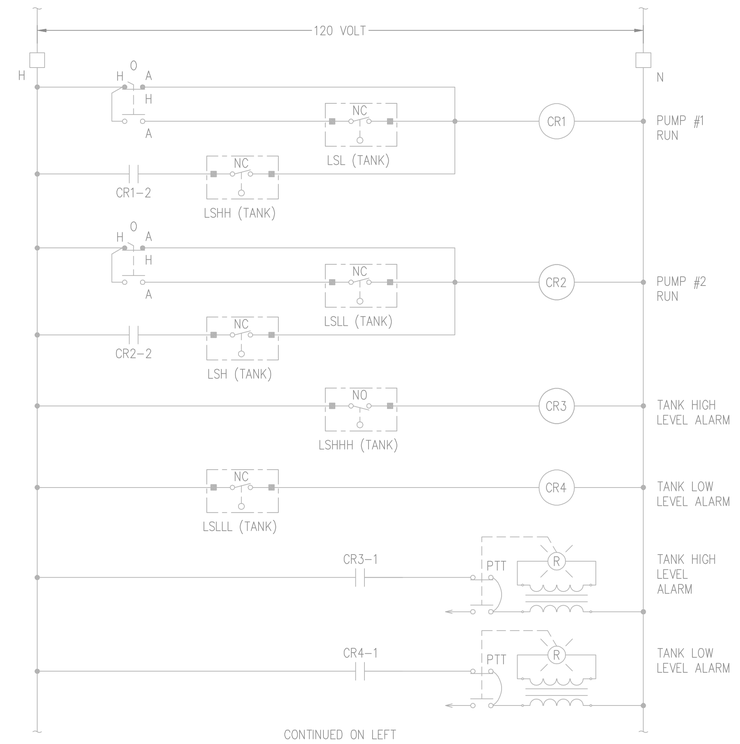
**PANEL: A**

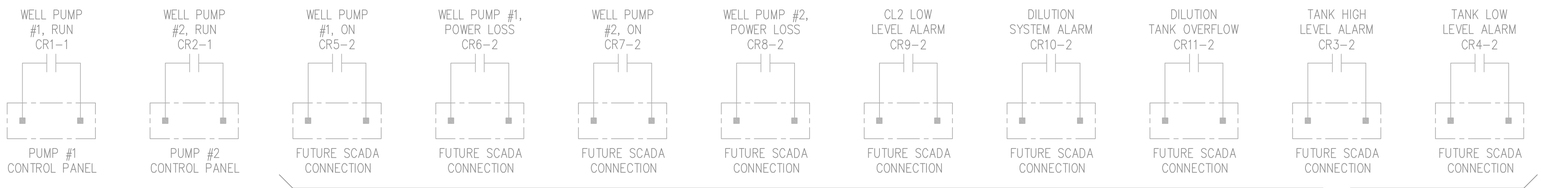
VOLTAGE: 208Y/120V 3 PHASE, 4 WIRE
BUS: 100 AMP
MAIN : 100A, 3P
FED FROM :

NEW
SURFACE MOUNTED
10 KAIC RATING
NEMA 1 ENCLOSURE
KEY: N - NON-COINCIDENT LOADS

| DESCRIPTION | CKT | LOAD | QTY | KEY | BREAKER AMP | P | VOLT AMPERES PER PHASE A Ø | B Ø | C Ø | P | BREAKER AMP | KEY | QTY | LOAD | CKT | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONVENIENCE OUTLET | 1 | 500 | | | 20 | 1 | 2504 | | | 3 | 30 | M | | 2004 | 2 | RECIRCULATION PUMP STATION |
| TANK CONTROL PANEL | 3 | 500 | | | 20 | 1 | | 2504 | | - | - | M | | 2004 | 4 | - |
| DILUTION SYSTEM | 5 | 500 | | | 20 | 1 | | | 2504 | - | - | M | | 2004 | 6 | - |
| DILUTION SYSTEM | 7 | 500 | | | 20 | 1 | 2504 | | | 3 | 30 | M | | 2004 | 8 | IRRIGATION SYS A PUMP STATION |
| METERING PUMP | 9 | 500 | M | | 20 | 1 | | 2504 | | - | - | M | | 2004 | 10 | - |
| LIGHT AND EXH FAN | 11 | 500 | | | 20 | 1 | | | 2504 | - | - | M | | 2004 | 12 | - |
| IRRIG CONTROL & CONV OUTLET | 13 | 500 | | | 20 | 1 | 500 | | | | | | | | 14 | SPACE |
| SPARE | 15 | | | | 20 | 1 | | 0 | | | | | | | 16 | SPACE |
| SPARE | 17 | | | | 20 | 1 | | | 0 | | | | | | 18 | SPACE |
| SPARE | 19 | | | | 20 | 1 | 0 | | | | | | | | 20 | SPACE |
| SPARE | 21 | | | | 20 | 1 | | 0 | | | | | | | 22 | SPACE |
| SPARE | 23 | | | | 20 | 1 | | | 0 | | | | | | 24 | SPACE |
| THROUGH FEED OR DOUBLE LUG TOTAL VA PER PHASE | | | | | | | 0 | 0 | 0 | PANEL: | | | | | | |
| TOTAL VOLT AMPERES PER PHASE | | | | | | | 5508 | 5008 | 5008 | | | | | | | TOTALS |

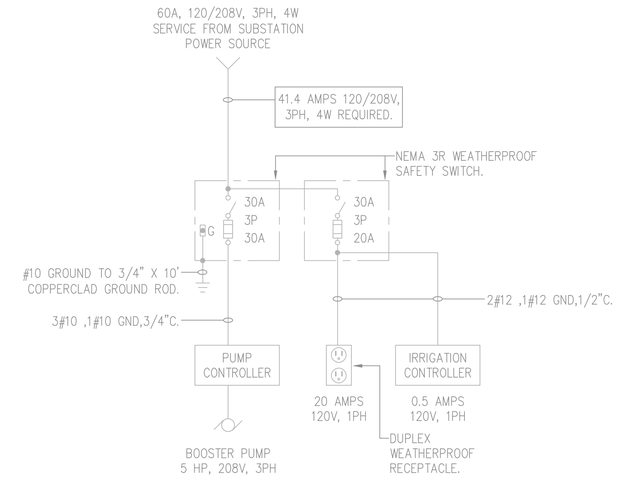
| KEY | DEMAND | | DESIGN | | CONNECTED | | | |
|---|---|---|---|---|---|---|---|---|
| L-GENERAL LIGHTING LOAD | 125% | | 0 | VA | 0 | VA | 16 | TOTAL CONNECTED kVA |
| R-RECEPTACLES (NEC ART. 220-13) | | | 0 | VA | 0 | VA | 16 | TOTAL DESIGN kVA |
| M-MOTOR LOADS | | | 12524 | VA | 12524 | VA | 43 | TOTAL CONNECTED AMPS |
| K-KITCHEN RECEPTACLES | 0 AT 100% | = | 0 | VA | 0 | VA | 4 | 25% OF LARGEST MOTOR ( AMPS ) |
| ALL OTHER LOADS | | | 3000 | VA | 3000 | VA | 47 | TOTAL DESIGN AMPS |



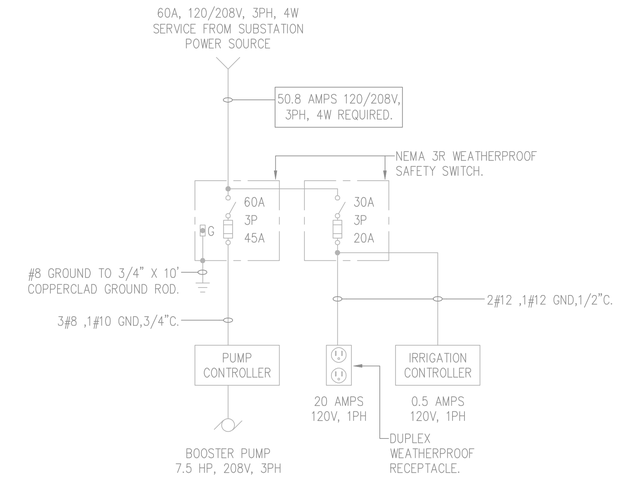

## TANK FILL CONTROL DIAGRAM

NO SCALE




## IRRIGATION PUMP STATION "C" SINGLE LINE DIAGRAM

NO SCALE




## IRRIGATION PUMP STATION "B" SINGLE LINE DIAGRAM

NO SCALE

REGISTERED PROFESSIONAL ENGINEER — GERALD L. GREEN — E015691 — Exp. 06-30-10 — ELECTRICAL — STATE OF CALIFORNIA

G4 ENGINEERING, INC. electrical consultants
825 KUHN DRIVE, SUITE 103
CHULA VISTA, CA 91914
(619) 934-0825 PH (619) 934-0825 FAX

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|

90% CONSTRUCTION DOCUMENT

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

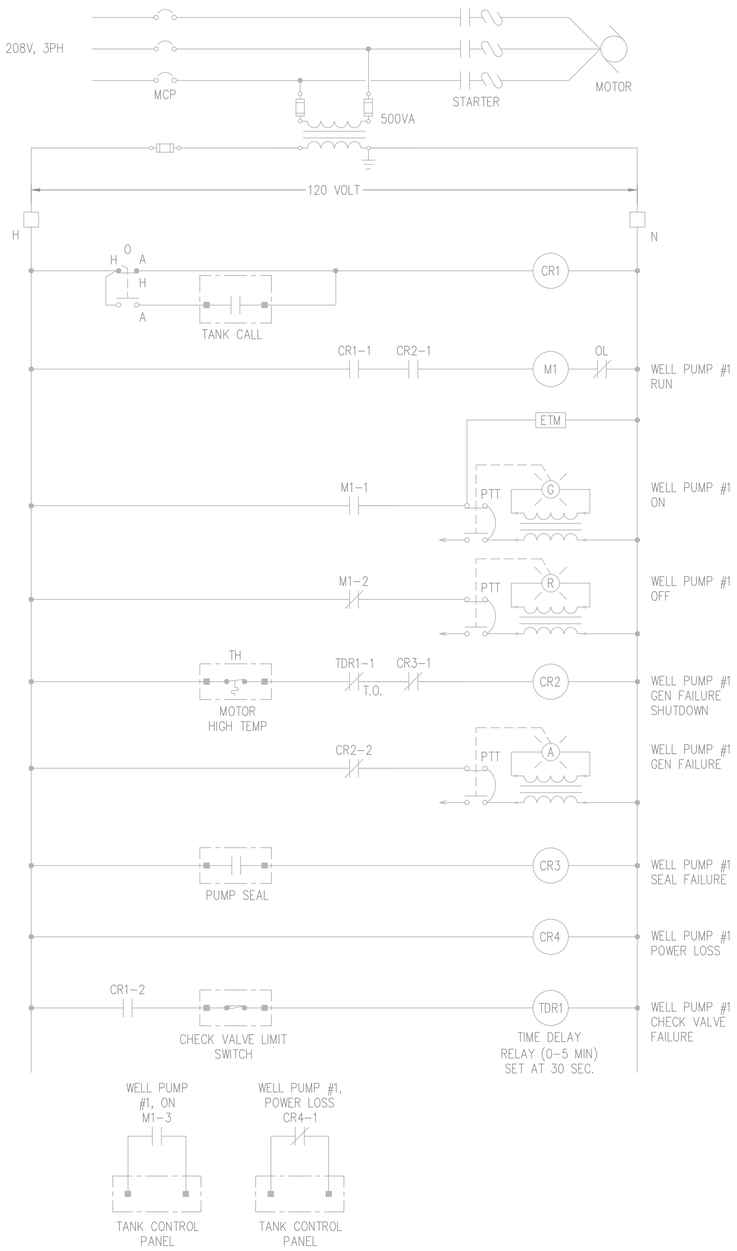
SUNCREST SUBSTATION 1

TANK CONTROL DIAG, IRRIG A & B SINGLE LINE DIAGRAMS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DG | DATE: 11/23/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | GG | DATE: 11/07/09 | | | |
| APPROVED BY: | GG | DATE: AS NOTED | SHEET 57 OF 66 | SCR-C-057 | |
| CAD NO.: GP55,56,57,58,59 | | PLOT SCALE: 1:1 | | | |

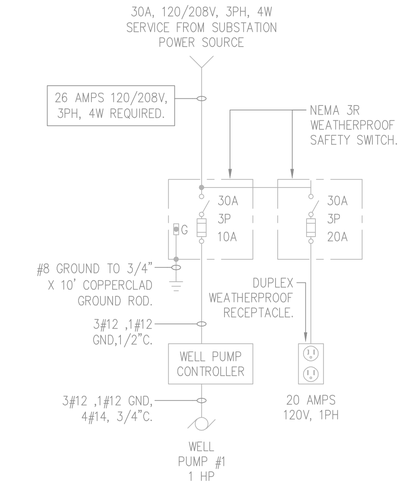
PRELIMINARY NOT FOR CONSTRUCTION 11/07/09

N:\SDGE03960\CADD\USF'S\CIVIL\GP\ELECTRICAL - G4\GP55,56,57,58,59
XREFS:



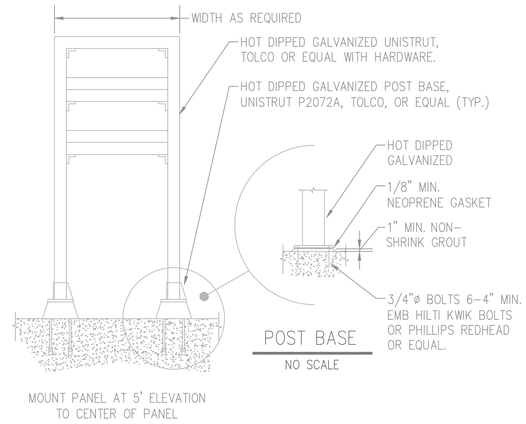

## WELL PUMP #1 CONTROL DIAGRAM

NO SCALE



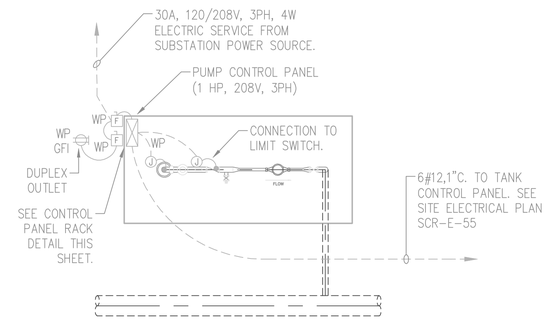

## WELL PUMP #1 SINGLE LINE DIAGRAM

NO SCALE




## CONTROL PANEL RACK DETAIL

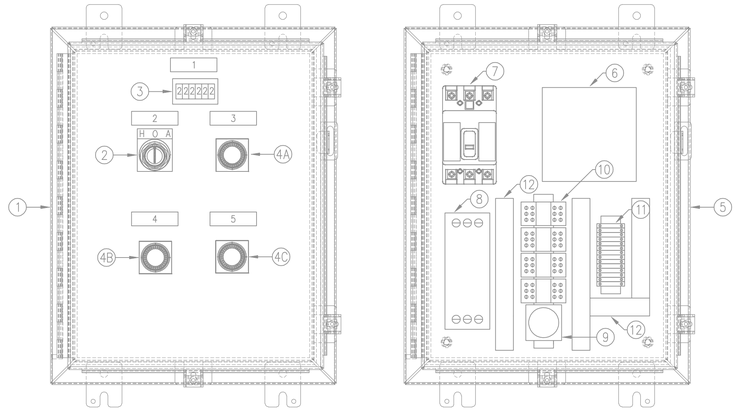
NO SCALE




## WELL PUMP #1 ELECTRICAL PLAN

3/8"=1'–0"

PART NUMBERS LISTED ARE INTENDED TO REFLECT THE GENERAL INTENT OF THE PROJECT REQUIREMENTS. THE SUPPLIER SHALL VERIFY THAT THE COMPONENTS ARE PROPERLY RATED FOR THE INTENDED APPLICATION.




| MATERIAL SCHEDULE | | |
|---|---|---|
| ITEM | MANUFACTURER | DESCRIPTION |
| 1 | HOFFMAN | NEMA 4 ENCLOSURE A–20H16BLP |
| 2 | ALLEN BRADLEY | 3 POSITION SWITCH 800T–J2A |
| 3 | GRAINGER | ELAPSED TIME METER 6X160 |
| 4A | ALLEN BRADLEY | LIGHT 800T–PT16G |
| 4B | ALLEN BRADLEY | LIGHT 800T–PT16R |
| 4C | ALLEN BRADLEY | LIGHT 800T–PT16A |
| 5 | HOFFMAN | BACKPLANE A–20P16 |
| 6 | ALLEN BRADLEY | TRANSFORMER 1497A–A9–M8–3–N |
| 7 | EATON | SERIES C MOTOR CIRCUIT PROTECTOR 7HMCP |
| 8 | EATON | FVNR STARTER W200MLCFC |
| 9 | ALLEN BRADLEY | TDR 700HR52TA17, 700–HN101 |
| 10 | ALLEN BRADLEY | RELAYS 700–HA33A1, 700HN–126 |
| 11 | PHOENIX CONTACT | TERMINAL BLOCKS UK5 |
| 12 | PANDUIT | 1" x 3" WIREWAY |

| NAMEPLATE SCHEDULE | |
|---|---|
| ITEM | |
| 1 | PUMP 1 CONTROL PANEL |
| 2 | PUMP 1 RUN |
| 3 | PUMP 1 ON |
| 4 | PUMP 1 OFF |
| 5 | PUMP 1 GEN FAILURE |

## WELL PUMP #1 CONTROL PANEL DETAIL

NO SCALE

NOLTE
BEYOND ENGINEERING

REGISTERED PROFESSIONAL ENGINEER — GERALD L. GREEN — E015691 Exp. 06–30–10 — ELECTRICAL — STATE OF CALIFORNIA

G4 ENGINEERING, INC. electrical consultants
825 KUHN DRIVE, SUITE 103
CHULA VISTA, CA 91914
(619) 934-0825 PH (619) 934-0825 FAX

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|
| | | | | |

90% CONSTRUCTION DOCUMENT

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

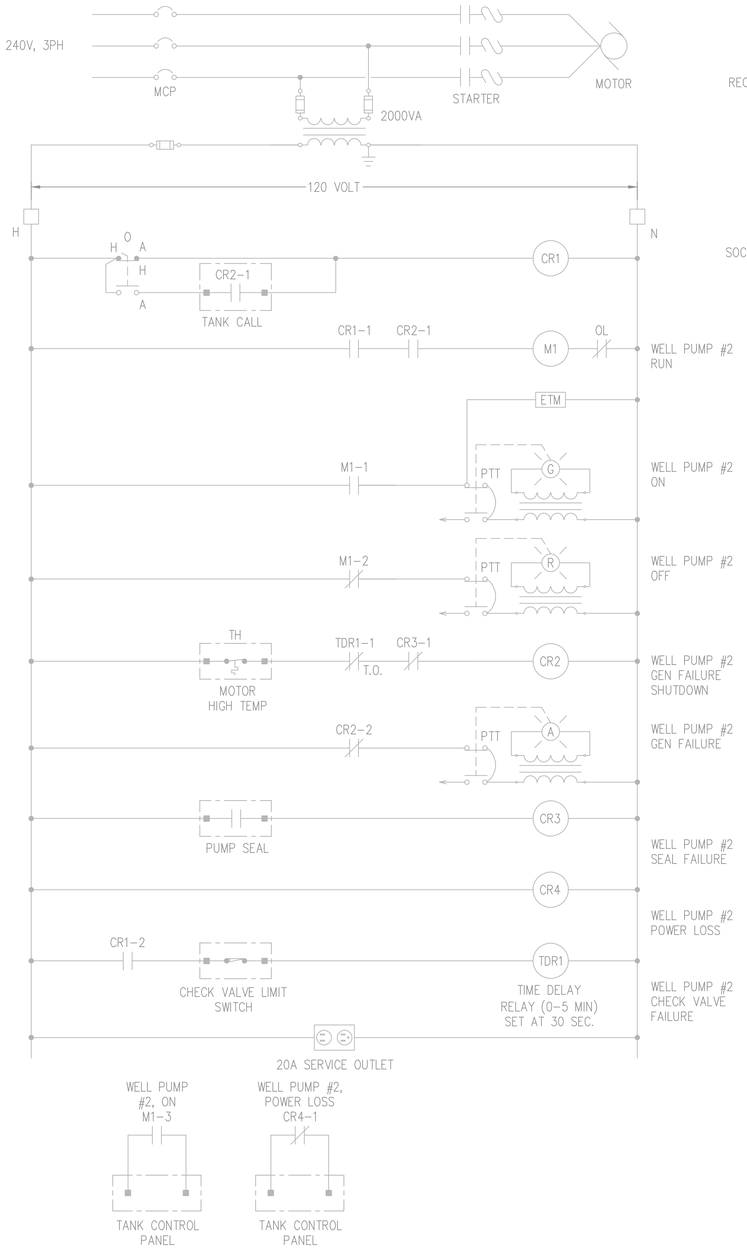
SUNCREST SUBSTATION 2

WATER WELL PUMP #1 DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DG | DATE: 11/23/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | GG | DATE: 11/07/09 | | | |
| APPROVED BY: | GG | DATE: AS NOTED | SHEET 58 OF 66 | SCR–C–058 | |
| CAD NO.: | GP55,56,57,58,59 | PLOT SCALE: | 1:1 | | |

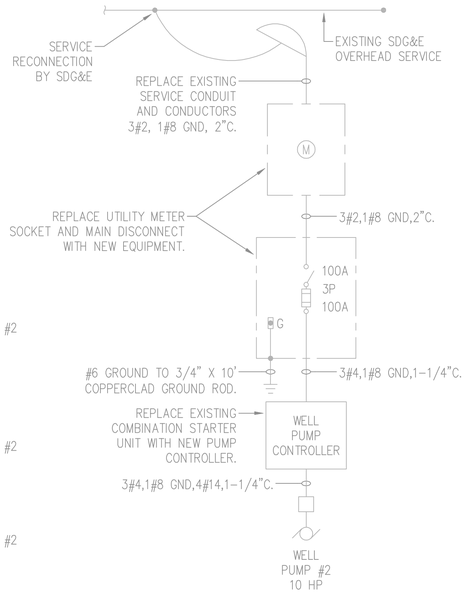
PRELIMINARY NOT FOR CONSTRUCTION 11/07/09

N:\SDGE0396\CADD\USER'S\CIVIL\GP\ELECTRICAL - G4\GP55,56,57,58,59
XREFS:



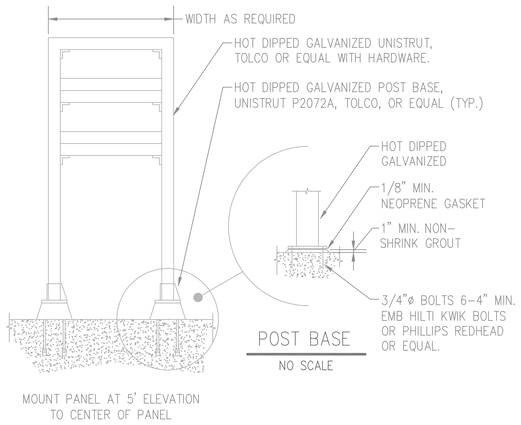

## WELL PUMP #2 CONTROL DIAGRAM

NO SCALE



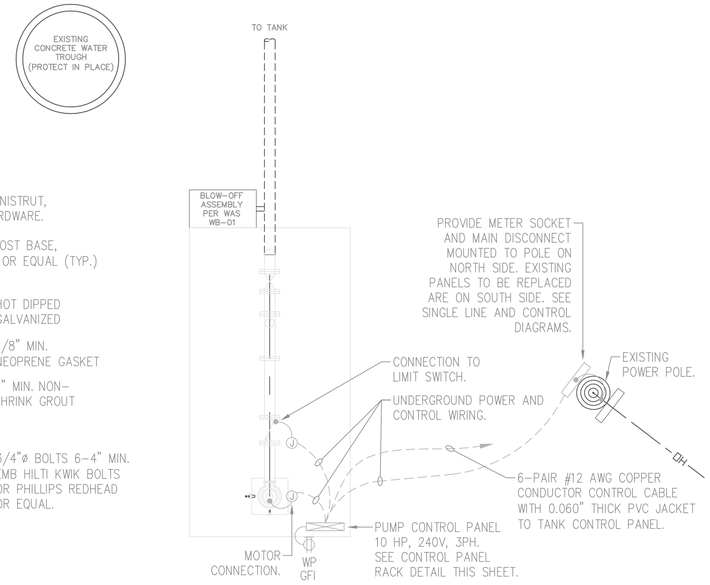

## WELL PUMP #2 SINGLE LINE DIAGRAM

NO SCALE




## CONTROL PANEL RACK DETAIL

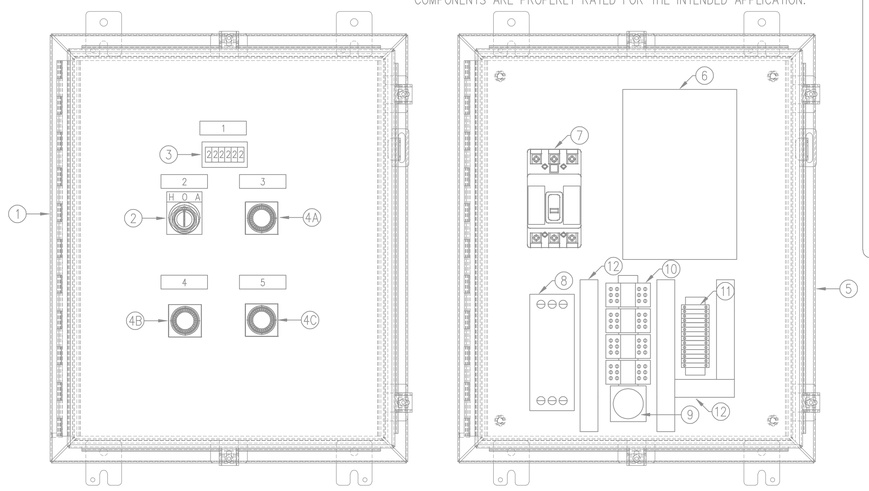
NO SCALE




## WELL PUMP #2 ELECTRICAL PLAN

3/8"=1'-0"

PART NUMBERS LISTED ARE INTENDED TO REFLECT THE GENERAL INTENT OF THE PROJECT REQUIREMENTS. THE SUPPLIER SHALL VERIFY THAT THE COMPONENTS ARE PROPERLY RATED FOR THE INTENDED APPLICATION.




| ITEM | MANUFACTURER | DESCRIPTION |
|---|---|---|
| 1 | HOFFMAN | NEMA 4 ENCLOSURE A-24H120BLP |
| 2 | ALLEN BRADLEY | 3 POSITION SWITCH 800T-J2A |
| 3 | GRAINGER | ELAPSED TIME METER 6X160 |
| 4A | ALLEN BRADLEY | LIGHT 800T-PT16G |
| 4B | ALLEN BRADLEY | LIGHT 800T-PT16R |
| 4C | ALLEN BRADLEY | LIGHT 800T-PT16A |
| 5 | HOFFMAN | BACKPLANE A-24P20 |
| 6 | ALLEN BRADLEY | TRANSFORMER 1497A-A9-M8-3-N |
| 7 | EATON | SERIES C MOTOR CIRCUIT PROTECTOR 50HMCP |
| 8 | EATON | FVNR STARTER W200M2CFC |
| 9 | ALLEN BRADLEY | TDR 700HR52TA17, 700-HN101 |
| 10 | ALLEN BRADLEY | RELAYS 700-HA33A1, 700HN-126 |
| 11 | PHOENIX CONTACT | TERMINAL BLOCKS UK5 |
| 12 | PANDUIT | 1" x 3" WIREWAY |

| NAMEPLATE SCHEDULE | |
|---|---|
| ITEM | |
| 1 | PUMP 2 CONTROL PANEL |
| 2 | PUMP 2 RUN |
| 3 | PUMP 2 ON |
| 4 | PUMP 2 OFF |
| 5 | PUMP 2 GEN FAILURE |

## WELL PUMP #2 CONTROL PANEL DETAIL

NO SCALE

NOLTE
BEYOND ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
GERALD L. GREEN
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90% CONSTRUCTION DOCUMENT

FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

WATER WELL PUMP #2 DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DG | DATE: 11/23/09 | SCALE: AS NOTED | W.O.: – | REV.: 0 |
| CHECKED BY: | GG | DATE: 11/07/09 | | | |
| APPROVED BY: | GG | DATE: AS NOTED | SHEET 59 OF 66 | SCR-C-059 | |
| CAD NO.: GP55,56,57,58,59 | | PLOT SCALE: 1:1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/07/09

N:\SDBD39600\CADD\USFS\CIVIL\GP\ELECTRICAL - G4\GP55,56,57,58,59 XREFS:

## EMERGENCY EROSION CONTROL MEASURE NOTES

1. ALL BUILDING PADS TO BE DIKED AND THE DIKES MAINTAINED TO PREVENT WATER FROM FLOWING FROM THE PAD UNTIL THE STREETS AND DRIVEWAYS ARE PAVED AND WATER CAN FLOW FROM THE PADS WITHOUT CAUSING EROSION, OR CONSTRUCT DRAINAGE FACILITIES TO THE SATISFACTION OF THE SDG&E REPRESENTATIVE THAT WILL ALLOW WATER TO DRAIN FROM THE PAD WITHOUT CAUSING EROSION.
2. TOPS OF ALL SLOPES TO BE DIKED OR TRENCHED TO PREVENT WATER FROM FLOWING OVER THE CREST OF SLOPES.
3. MANUFACTURED SLOPES AND PADS SHALL BE ROUNDED VERTICALLY AND HORIZONTALLY AS APPROPRIATE TO BLEND WITH THE SURROUNDING TOPOGRAPHY.
4. AS SOON AS CUTS OR EMBANKMENTS ARE COMPLETED, BUT NOT LATER THAN OCTOBER 1 ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITH A HYDROMULCH MIXTURE OR AN EQUAL TREATMENT APPROVED BY THE SDG&E REPRESENTATIVE BETWEEN OCTOBER 1 AND APRIL 15, APPROVED SLOPE PROTECTION MEASURES SHALL PROCEED IMMEDIATELY BEHIND THE EXPOSURE OF CUT SLOPES AND/OR THE CREATION OF EMBANKMENT SLOPES.
5. CATCH BASINS, DESILTING BASINS, AND STORM DRAINS SHALL BE INSTALLED TO THE SATISFACTION OF THE SDG&E REPRESENTATIVE.
6. GRAVEL BAG CHECK DAMS TO BE PLACED IN A MANNER APPROVED BY THE SDG&E REPRESENTATIVE IN UNPAVED STREETS WITH GRADIENTS IN EXCESS OF 2% AND ON OR IN OTHER GRADED OR EXCAVATED AREAS AS REQUIRED BY THE SDG&E REPRESENTATIVE.
7. THE CONTRACTOR TO MAINTAIN THE PLANTING AND EROSION CONTROL MEASURES DESCRIBED ABOVE UNTIL RELIEVED OF SAME BY THE SDG&E REPRESENTATIVE THE DEVELOPER TO REMOVE ALL SOIL INTERCEPTED BY THE SANDBAGS, CATCH BASINS, AND DESILTING BASINS, AND KEEP FACILITIES CLEAN AND FREE OF SILT AND SAND AS DIRECTED BY THE SDG&E REPRESENTATIVE THE DEVELOPER SHALL REPAIR ANY ERODED SLOPES AS DIRECTED BY THE SDG&E REPRESENTATIVE.

## EROSION CONTROL NOTES:

1. THESE EROSION CONTROL PLANS SHOW PROJECT IMPROVEMENTS FOR ILLUSTRATION ONLY. SEE PROJECT IMPROVEMENT PLANS FOR IMPROVEMENT DETAILS.
2. ALL HYDROSEED AND BONDED FIBER MATRIX MIXES TO BE APPROVED BY PROJECT LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

## STORMWATER ADVISORY NOTES

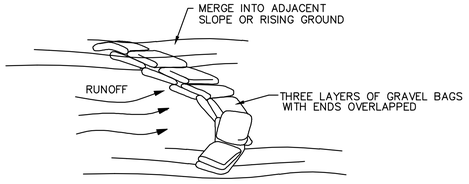
1. DURING THE RAINY SEASON THE AMOUNT OF EXPOSED SOIL ALLOWED AT ONE TIME SHALL NOT EXCEED THAT WHICH CAN BE ADEQUATELY PROTECTED BY THE PROPERTY OWNER IN THE EVENT OF A RAINSTORM. 125% OF ALL SUPPLIES NEEDED FOR BMP (BEST MANAGEMENT PRACTICES) MEASURES SHALL BE RETAINED ON THE JOB SITE IN A MANNER THAT ALLOWS FULL DEPLOYMENT AND COMPLETE INSTALLATION IN 48 HOURS OR LESS OF A FORECAST RAIN.
2. NO AREA BEING DISTURBED SHALL EXCEED 50 ACRES AT ANY GIVEN TIME WITHOUT DEMONSTRATING TO THE SDG&E REPRESENTATIVE'S SATISFACTION THAT ADEQUATE EROSION AND SEDIMENT CONTROL CAN BE MAINTAINED. ANY DISTURBED AREA THAT IS NOT ACTIVELY GRADED FOR 15 DAYS MUST BE FULLY PROTECTED FROM EROSION. UNTIL ADEQUATE LONG-TERM PROTECTIONS ARE INSTALLED, THE DISTURBED AREA SHALL BE INCLUDED WHEN CALCULATING THE ACTIVE DISTURBANCE AREA. ALL EROSION CONTROL MEASURES SHALL REMAIN INSTALLED AND MAINTAINED DURING ANY INACTIVE PERIOD.
3. THE CONTRACTOR IS OBLIGATED TO INSURE COMPLIANCE WITH ALL APPLICABLE STORMWATER REGULATIONS AT ALL TIMES. THE BMPs (BEST MANAGEMENT PRACTICES) THAT HAVE BEEN INCORPORATED INTO THIS PLAN SHALL BE IMPLEMENTED AND MAINTAINED TO EFFECTIVELY PREVENT THE POTENTIALLY NEGATIVE IMPACTS OF THIS PROJECT'S CONSTRUCTION ACTIVITIES ON STORMWATER QUALITY. THE MAINTENANCE OF THE BMPs IS THE PERMITTEES RESPONSIBILITY, AND FAILURE TO PROPERLY INSTALL OR MAINTAIN THE BMPs MAY RESULT IN ENFORCEMENT ACTION BY THE CITY OF ENCINITAS OR OTHERS. IF INSTALLED BMPs FAIL, THEY MUST BE REPAIRED OR REPLACED WITH AN ACCEPTABLE ALTERNATE WITHIN 24 HOURS, OR AS SOON AS SAFE TO DO SO.
4. A NOTICE OF INTENT (NOI) WILL BE FILED WITH THE STATE WATER RESOURCE CONTROL BOARD (SWRCB) AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) WILL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF CALIFORNIA GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (PERMIT No. CAS000002) FOR ALL OPERATIONS ASSOCIATED WITH THESE PLANS. THE WASTE DISCHARGE NUMBER ASSIGNED BY SWRCB FOR THE MASS GRADING OF THIS SITE IS _____. THE PERMITTEE SHALL KEEP A COPY OF THE SWPPP ON SITE AND AVAILABLE FOR REVIEW BY THE CITY.

## STANDARD SPECIFICATIONS

1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2000 EDITION)
2. CALIFORNIA DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES," (1990 EDITION).
3. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS (JULY 1992).

## STANDARD DRAWINGS

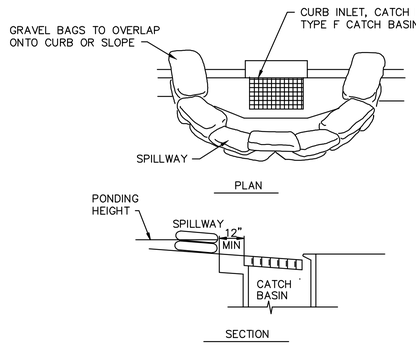
1. SAN DIEGO GAS AND ELECTRIC WATER QUALITY CONSTRUCTION BEST MANAGEMENT PRACTICES MANUAL (DECEMBER 2002 EDITION).
2. CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) STORMWATER BEST MANAGEMENT PRACTICES HANDBOOK.




| GRADE INTERVAL | |
|---|---|
| LESS THAN 2% | AS REQUIRED/200' MAX. |
| 2% TO 4% | 100 FEET |
| 4% TO 10% | 50 FEET |
| OVER 10% | 25 FEET |

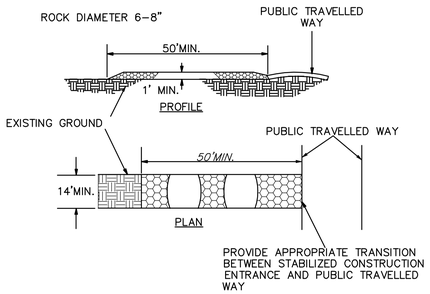
NOTE:
PLACE GRAVEL BAGS PER INTERVAL SHOWN ABOVE AND AS INDICATED ON PLAN

### GRAVEL BAG CHECK DAM
NOT TO SCALE

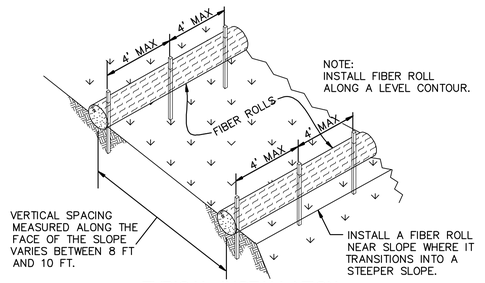



NOTES
1. LEAVE A GAP OF ONE BAG IN THE MIDDLE OF THE TOP ROW OF BAGS TO SERVE AS THE SPILLWAY. SPILLWAY HEIGHT SHALL BE LOWER THAN CURB HEIGHT AND SUFFICIENT IN SIZE TO PASS FLOWS FROM SEVERE STORM EVENT
2. PLACE 2 LAYERS OF OVERLAPPING SANDBAGS AND PACK TIGHTLY TOGETHER TO MINIMIZE THE SPACE BETWEEN BAGS
3. INSPECT AND REPAIR FILTERS AFTER EACH STORM EVENT. REMOVE SEDIMENT WHEN ONE HALF OF THE FILTER DEPTH HAS BEEN FILLED
4. USE A SILT SOCK OR SILT BAG WHEN INLET IS ADJACENT TO AN ACTIVE TRAVEL LANE.

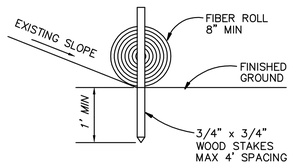
### GRAVEL BAG INLET PROTECTION
NOT TO SCALE



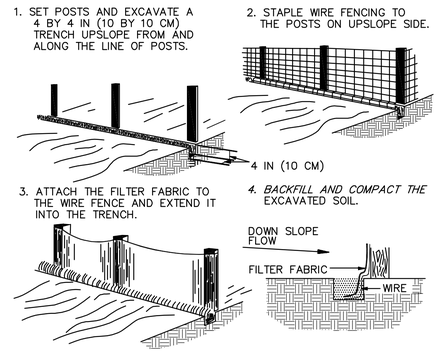

### STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE




### TYPICAL INSTALLATION
NOT TO SCALE




### FIBER ROLL
NOT TO SCALE




NOTES
1. SILT FENCE TO BE LOCATED WITHIN 5 FEET OF TOP OR TOE OF SLOPE WHERE APPLICABLE.
2. SILT FENCE WILL TERMINATE 1 FOOT ON EITHER SIDE OF RIP RAP ENERGY DISSIPATORS.

### SILT FENCE DETAIL
NOT TO SCALE

## SILTATION AND SEDIMENT CONTROL MEASURES NOTES

1. SEDIMENT BASINS SHALL BE PROVIDED AT THE LOWER END OF EVERY DRAINAGE AREA PRODUCING SEDIMENT RUNOFF. THE BASINS SHALL BE MAINTAINED AND CLEANED TO DESIGN CONTOURS AFTER EVERY RUNOFF PRODUCING STORM. THE BASINS SHOULD BE SEMI-PERMANENT STRUCTURES THAT WOULD REMAIN UNTIL SOIL STABILIZING VEGETATION HAS BECOME WELL ESTABLISHED ON ALL ERODIBLE SLOPES.
2. SEDIMENTATION BASINS MAY NOT BE REMOVED OR MADE INOPERATIVE WITHOUT PRIOR APPROVAL OF THE SDG&E REPRESENTATIVE.
3. SEWER OR STORM DRAIN TRENCHES THAT ARE CUT THROUGH BASIN DIKES OR BASIN INLET DIKES SHALL BE PLUGGED WITH GRAVEL BAGS FROM TOP OF PIPE TO TOP OF DIKE.
4. ALL UTILITY TRENCHES SHALL BE BLOCKED AT THE PRESCRIBED INTERVALS WITH A DOUBLE ROW OF GRAVEL BAGS WITH A TOP ELEVATION, LEVEL WITH, AND TWO GRAVEL BAGS BELOW THE GRADED SURFACE OF THE STREET. GRAVEL BAGS ARE TO BE LACED WITH LAPPED COURSES. THE INTERVALS PRESCRIBED BETWEEN GRAVEL BAG BLOCKING SHALL DEPEND ON THE SLOPE OF THE GROUND SURFACE, BUT NOT EXCEED THE FOLLOWING:

| GRADE OF THE STREET | INTERVAL |
|---|---|
| LESS THAN 2% | AS REQUIRED |
| 2% TO 4% | 100 FEET |
| 4% TO 10% | 50 FEET |
| OVER 10% | 25 FEET |

5. AFTER SEWER UTILITY TRENCHES ARE BACKFILLED AND COMPACTED, THE SURFACES OVER SUCH TRENCHES SHALL BE MOUNDED SLIGHTLY TO PREVENT CHANNELING OF WATER IN THE TRENCH AREA. CARE SHOULD BE EXERCISED TO PROVIDE FOR CROSS FLOW AT FREQUENT INTERVALS WHERE TRENCHES ARE NOT ON THE CENTERLINE OF A CROWNED STREET.
6. ALL BUILDING PADS SHOULD BE SLOPED TOWARDS THE DRIVEWAYS AND VELOCITY CHECK DAMS PROVIDED AT THE BASE OF ALL DRIVEWAYS DRAINING INTO THE STREET.
7. PROVIDE VELOCITY CHECK DAMS IN ALL UNPAVED GRADED CHANNELS AT THE INTERVALS INDICATED BELOW:

| GRADE OF CHANNEL | INTERVALS BETWEEN CHECK DAMS |
|---|---|
| LESS THAN 3% | 100 FEET |
| 3% TO 6% | 50 FEET |
| OVER 6% | 25 FEET |

8. PROVIDE VELOCITY CHECK DAMS IN ALL PAVED STREET AREAS ACCORDING TO RECOMMENDED CRITERIA ESTABLISHED BY THE COUNTY OF SAN DIEGO. VELOCITY CHECK DAMS MAY BE CONSTRUCTED OF GRAVEL BAGS, TIMBER, OR OTHER EROSION RESISTANT MATERIALS APPROVED BY THE SDG&E REPRESENTATIVE, AND SHALL EXTEND COMPLETELY ACROSS THE STREET OR CHANNEL AT RIGHT ANGLES TO THE CENTERLINE. VELOCITY CHECK DAMS MAY ALSO SERVE AS SEDIMENT TRAPS.
9. PROVIDE A GRAVEL BAG SILT BASIN OR TRAP BY EVERY STORM DRAIN INLET TO PREVENT SEDIMENT FROM ENTERING DRAIN SYSTEM.
10. GRAVEL BAGS AND FILL MATERIAL SHALL BE STOCKPILED AT INTERVALS, READY FOR USE WHEN REQUIRED. PROVIDE 125% OF TOTAL NUMBER OF BAGS REQUIRED IN INITIAL INSTALLATION FOR STOCKPILE QUANTITY.
11. ALL EROSION CONTROL DEVICES WITHIN THE DEVELOPMENT SHOULD BE MAINTAINED DURING AND AFTER EVERY RUNOFF PRODUCING STORM, IF POSSIBLE, MAINTENANCE CREWS WOULD BE REQUIRED TO HAVE ACCESS TO ALL AREAS.
12. PROVIDE ROCK RIP-RAP ON CURVES AND STEEP DROPS IN ALL EROSION PRONE DRAINAGE CHANNELS DOWNSTREAM FROM THE DEVELOPMENT. THIS PROTECTION WOULD REDUCE EROSION CAUSED BY THE INCREASED FLOWS THAT MAY BE ANTICIPATED FROM DENUDED SLOPES, OR FROM IMPERVIOUS SURFACES.
13. ANY PROPOSED ALTERNATE CONTROL MEASURES MUST BE APPROVED IN ADVANCE BY ALL RESPONSIBLE AGENCIES; IE, SDG&E REPRESENTATIVE, DEPARTMENT OF PUBLIC WORKS.

NOLTE
BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
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SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

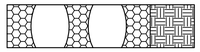
SUNCREST SUBSTATION

EROSION CONTROL NOTES-DETAILS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: DB | DATE: 10/29/09 | SCALE: AS SHOWN | W.O.: - | REV.: 0 | SCR-C-060 |
| CHECKED BY: RWM | DATE: - | | | | |
| APPROVED BY: CR | DATE: - | SHEET 60 OF 66 | | | |
| CAD NO.: GP60 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD8039600\CADD\USFS\CIVIL\GP\GP60
XREFS:

| LEGEND | SDG&E BMP NO. | DESCRIPTION |
|---|---|---|
|  | NO SDG&E BMP<br>CASQA EC-10 | VELOCITY DISSIPATION DEVICES<br>(RIP-RAP APRON) |
|  | BMP-1-02 | SILT FENCE |
|  | CASQA SE-2 | TEMPORARY SEDIMENT BASIN |
|  | CASQA SE-4 | GRAVEL BAG CHECK DAMS |
|  | BMP-1-03 | FIBER ROLLS |
|  | BMP-1-06 | STORM DRAIN INLET PROTECTION |
|  | CASQA TC-1 | STABILIZED CONSTRUCTION ENTRANCE |
|  | BMP-2-01 | MATERIAL DELIVERY AND STORAGE |
|  | CASQA WM-8 | CONCRETE WASTE MANAGEMENT |

BMP STANDARDS REFERENCED FROM SDG&E WATER QUALITY CONSTRUCTION BEST MANAGEMENT PRACTICES MANUAL (BMP-X-XX)
AND CASQA STORMWATER BEST MANAGEMENT PRACTICES MANUAL (ALL OTHERS)

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BEYOND ENGINEERING

REVISIONS

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SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

EROSION CONTROL LEGEND-NOTES-DETAILS

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| DRAWN BY: DB | DATE: 11/24/09 | SCALE: AS SHOWN | W.O.: – | REV.: 0 | SCR-C-061 |
| CHECKED BY: RWM | DATE: – | | | | |
| APPROVED BY: CR | DATE: – | SHEET 61 OF 66 | | | |
| CAD NO.: GP61 | PLOT SCALE: 1=1 | | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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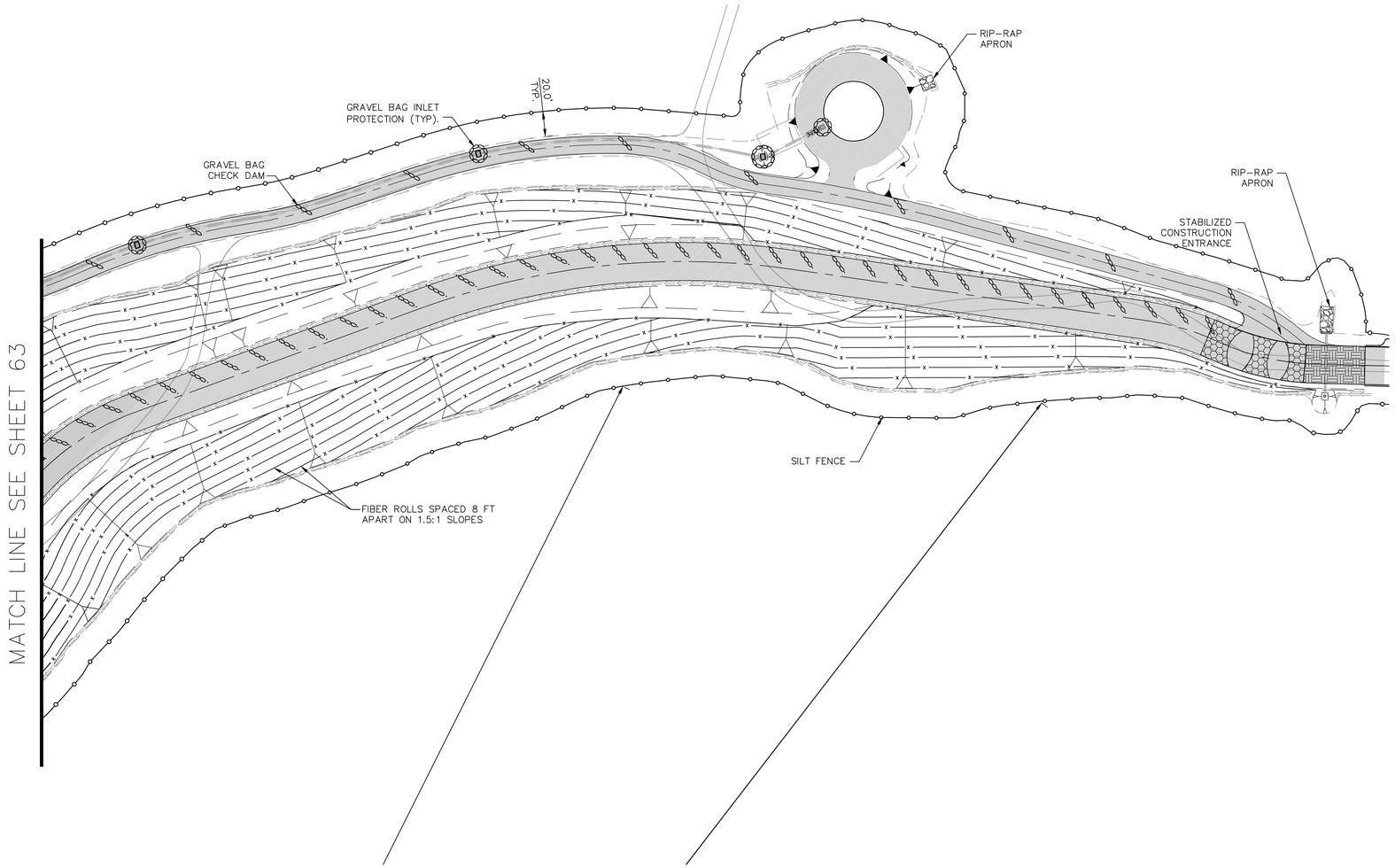


GRAPHIC SCALE

0' 50' 100' 150' 200'

SCALE: 1"= 50'

NOLTE BEYOND ENGINEERING

REVISIONS

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SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

EROSION CONTROL PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DB | DATE: 2/4/08 | SCALE: 1"=50' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 62 OF 66 | SCR-C-062 | |
| CAD NO.: | GP62 | PLOT SCALE: | 1=1 | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

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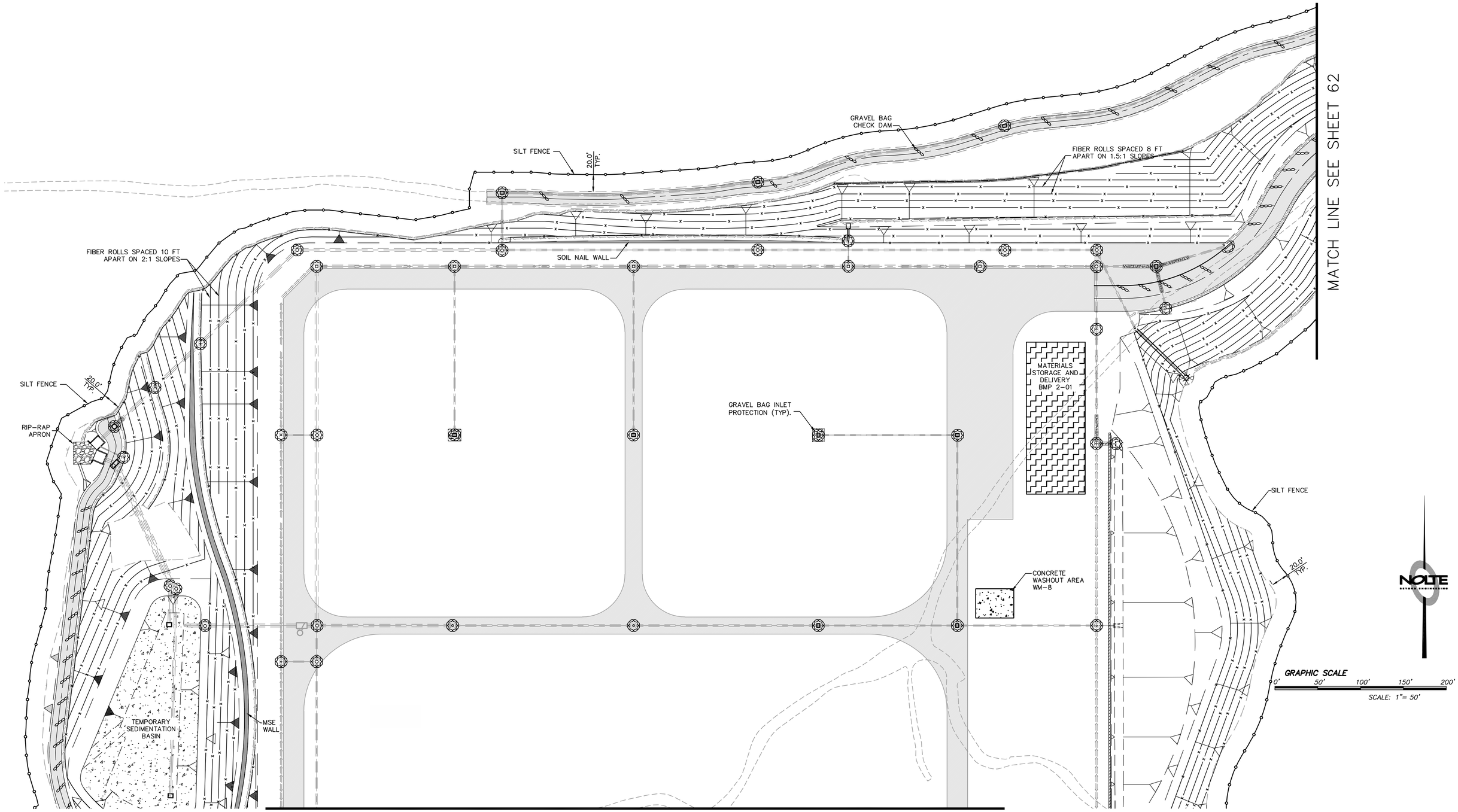
XREFS:

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REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: |
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FOR APPROVAL

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

EROSION CONTROL PLAN

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|---|---|---|---|---|---|
| DRAWN BY: | DB | DATE: 10/29/09 | SCALE: 1"=50' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 63 OF 66 | | SCR-C-063 |
| CAD NO.: | GP63 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDBG396001\CADD\USFS\CIVIL\GP\GP63
XREFS:

MATCH LINE SHEET 63

RIP-RAP APRON

MSE WALL

FIBER ROLLS SPACED 10 FT APART ON 2:1 SLOPES

GRAVEL BAG CHECK DAM

FIBER ROLLS SPACED 8 FT APART ON 1.5:1 SLOPES

SILT FENCE

20.0' TYP.

GRAVEL BAG INLET PROTECTION (TYP.)

FIBER ROLLS SPACED 8 FT APART

SILT FENCE

SILT FENCE

20.0' TYP.

GRAPHIC SCALE

0' 50' 100' 150' 200'

SCALE: 1"= 50'

MATCH LINE SHEET 65

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

EROSION CONTROL PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DB | DATE: 10/29/09 | SCALE: 1"=50' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 64 OF 66 | | |
| CAD NO.: | GP64 | PLOT SCALE: | 1=1 | | |

SCR-C-064

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SD803600\CADD\USF'S\CIVIL\GP\GP64
XREFS:

MATCH LINE SHEET 64


GRAPHIC SCALE

0' 50' 100' 150' 200'

SCALE: 1"= 50'

NOLTE BEYOND ENGINEERING

REVISIONS

| NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: | NO. | WORK DONE | DATE: | BY: | APP'D: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FOR APPROVAL | | | |

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION

EROSION CONTROL PLAN

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | DB | DATE: 11/23/09 | SCALE: 1"=50' | W.O.: – | REV.: 0 |
| CHECKED BY: | RWM | DATE: – | | | |
| APPROVED BY: | CR | DATE: – | SHEET 65 OF 66 | SCR-C-065 | |
| CAD NO.: | GP65 | PLOT SCALE: 1=1 | | | |

PRELIMINARY NOT FOR CONSTRUCTION 11/30/09

N:\SDB039600\C400\USFS\CIVIL\GP\GP65
XREFS: