

| Date (mm dd yyyy) | Issued For | Rev. |
|-------------------|--------------------------------------|------|
| 12-07-2007 | TITLE II DESIGN 30% REVIEW SUBMITTAL | C |
| 03-28-2008 | TITLE II DESIGN 60% REVIEW SUBMITTAL | D |
| 07-31-2008 | TITLE II DESIGN 90% REVIEW SUBMITTAL | E |
| 08-25-2008 | TITLE II DESIGN 100% OWNER REVIEW | F |
| 2-19-2009 | TITLE II CONSTRUCTION BID ISSUE | G |

CIVIL SYMBOLS

| REF | NEW | EXISTING |
|-------|-----|----------|
| CE-04 | | |
| CE-04 | | AS NOTED |
| CE-04 | | AS NOTED |
| CE-04 | | AS NOTED |
| CE-05 | | |
| CE-05 | | SB-1 |
| CE-05 | | |

CIVIL GENERAL NOTES

- MINIMUM COVER OF UNDERGROUND UTILITIES:
 WATER 5.0 FT
 COMPRESSED AIR 2.5 FT
 NATURAL GAS 2.5 FT
 SANITARY SEWERS 3.0 FT
 CHILLED WATER 5.0 FT
 ALL OTHERS 2.5 FT
 PRESSURE UTILITIES MAY BE LAID APPROXIMATELY PARALLEL TO FINISH GRADE, EXCEPT AS INDICATED, WITH LOCAL DEEPENING TO AVOID OTHER UTILITIES OR OBSTRUCTIONS. MAINTAIN COVER BELOW DITCHES AND SURFACE DEPRESSIONS. PROVIDE TEMPORARY PROTECTION AS REQUIRED UNTIL COVER IS COMPLETED. INFORM OWNER'S REPRESENTATIVE IF AVAILABLE COVER, AT INDICATED ELEVATIONS, IS LESS THAN MINIMUM.
- TOPOGRAPHIC INFORMATION: EXISTING INFORMATION IS BASED ON A TOPOGRAPHIC SURVEY FURNISHED BY BROOKHAVEN NATIONAL LABORATORY AND SUPPLEMENTED BY RECORD DRAWINGS CONFIRM INFORMATION INDICATED PRIOR TO CONSTRUCTION.
- HORIZONTAL CONTROL: USE EXISTING BUILDINGS 600 AND 600A TO LOCATE THE EXTENSION OF THESE BUILDINGS.
- VERTICAL CONTROL: USE FINISH FLOOR ELEVATION OF CENTRAL CHILLED WATER FACILITY FOR SITE BENCH MARK.
- EXISTING UTILITIES: INFORMATION HAS BEEN OBTAINED FROM EXISTING AVAILABLE DRAWINGS AND SURFACE FEATURES SHOWN ON THE TOPOGRAPHIC SURVEY. VERIFY THE INFORMATION BEFORE CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE OF DISCREPANCIES OR INTERFERENCES.
- CONSTRUCTION DRAINAGE: USE PUMPS, TEMPORARY DITCHES, SLOPES TO MAINTAIN A WELL DRAINED SITE, FREE OF STANDING WATER AND WATER SOFTENED SOILS.
- LAYOUT: LOCATE BUILDING ADDITIONS BY MEASUREMENTS FROM CONNECTING AREAS OF EXISTING BUILDINGS. CONFIRM HORIZONTAL AND VERTICAL CONTROL POINTS PRIOR TO CONSTRUCTION. COORDINATES ARE FOR UTILITY LOCATIONS AND OVERALL COORDINATION ONLY.
- SURFACE RESTORATION: RESTORE PAVEMENTS AND OTHER SURFACES DISTURBED BY CONTRACT OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER.
- PROVIDE 3" TOPSOIL, SEED AND MULCH IN NON-PAVED AREAS DISTURBED BY CONSTRUCTION.
- THE CONSTRUCTION METHODS SHOWN OR SPECIFIED ARE NOT INTENDED TO BE COMPLETELY DETAILED. PERFORM WORK AND PROVIDE PROPERLY FUNCTIONING SYSTEMS PER APPLICABLE CODES, MANUFACTURER'S INSTRUCTION AND BEST ACCEPTED SAFE WORK PRACTICES.
- SOIL BORINGS: SOILS INFORMATION BOUND IN THE SPECIFICATIONS, HAS BEEN PHOTOGRAPHICALLY REPRODUCED FROM A REPORT BY NTH CONSULTANTS, LTD DATED OCTOBER 17, 2007. SEE SPECIFICATION SECTION 0200.
- DEMOLITION NOTE:
 SAW-CUT EXISTING PAVEMENT FULL DEPTH AND REMOVE AS REQUIRED FOR CONSTRUCTION OF CHILLED WATER AND COMPRESSED AIR LINES.

CIVIL ABBREVIATIONS

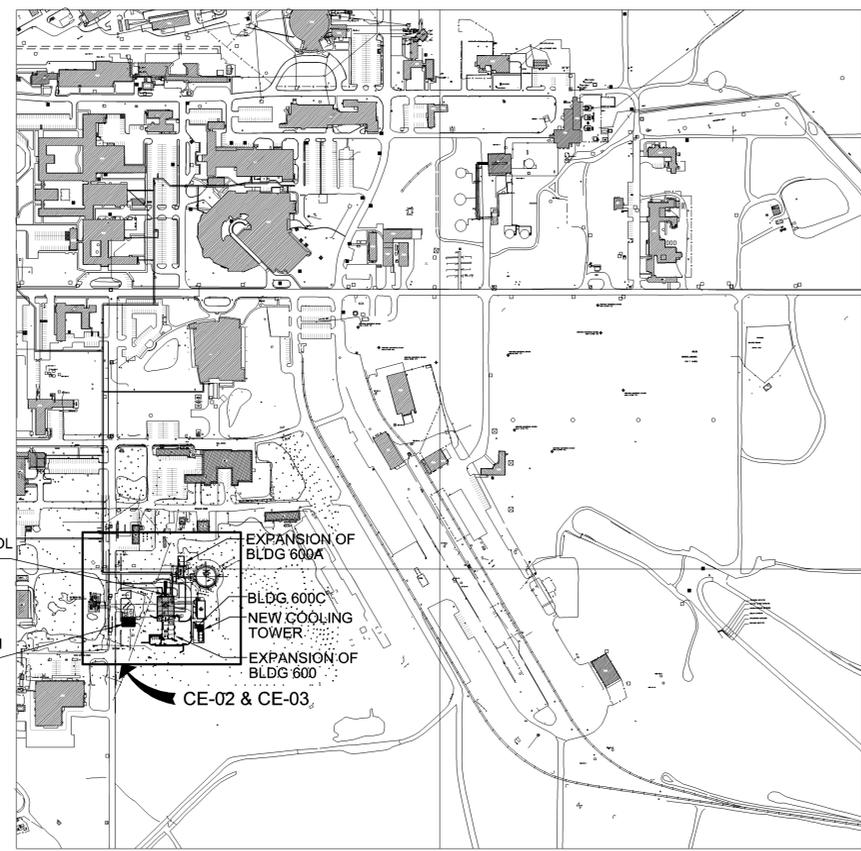
| | | | |
|--------|-----------------------|-------|--------------------------|
| AGGR | AGGREGATE | MAX | MAXIMUM |
| APPROX | APPROXIMATELY | MH | MANHOLE |
| BC | BACK OF CURB | MIN | MINIMUM |
| BE | BOTTOM ELEVATION | N | NORTH |
| BITUM | BITUMINOUS | NIC | NOT IN CONTRACT |
| BLDG | BUILDING | NG | NATURAL GAS |
| CA | COMPRESSED AIR | NPW | NON-POTABLE WATER |
| CB | CATCH BASIN | NTS | NOT TO SCALE |
| CISP | CAST IRON SOIL PIPE | OC | ON CENTER |
| | CENTERLINE | PV | POST INDICATOR AND VALVE |
| CO | CLEANOUT | PVMT | PAVEMENT |
| CONC | CONCRETE | R | RADIUS |
| CSP | CORRUGATED STEEL PIPE | RD | ROAD |
| CHR | CHILLED WATER RETURN | REF | REFERENCE |
| CHS | CHILLED WATER SUPPLY | REQD | REQUIRED |
| CWR | COOLING WATER RETURN | ROW | RIGHT OF WAY |
| CWS | COOLING WATER SUPPLY | S | SOUTH |
| DIA | DIAMETER | SAN-F | SANITARY FORCED |
| DW | DOMESTIC WATER | SAN | SANITARY |
| DWG | DRAWING | STD | STANDARD |
| E | EAST | STW | STORM WATER |
| EL | ELEVATION | TC | TOP OF CURB ELEVATION |
| ELEC | ELECTRICAL | TD | TRENCH DRAIN |
| EXST | EXISTING | TE | TOP ELEVATION |
| FL | FLOOR | TEL | TELEPHONE |
| FIN | FINISH | TW | TOP OF WALL ELEVATION |
| FT | FEET | TYP | TYPICAL |
| FW | FIRE WATER | UD | UNDERDRAIN |
| GR | GRADE | VERT | VERTICAL |
| HCP | HANDICAPPED | W | WEST |
| HORIZ | HORIZONTAL | WD | WIDE |
| HP | HIGH POINT | WL | WATER LEVEL |
| HYD | HYDRANT | WSE | WATER SURFACE ELEVATION |
| IE | INVERT ELEVATION | | |
| IS | IRRIGATION SLEEVE | | |
| LP | LOW POINT | | |

SEDIMENTATION AND EROSION CONTROL GENERAL NOTES

- EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE APPLICABLE FEDERAL, STATE, COUNTY, AND CITY LAWS, CODES, AND REGULATIONS PERTAINING TO THE IMPLEMENTATION, MAINTENANCE, AND DOCUMENTATION OF SEDIMENTATION AND EROSION CONTROL PRACTICES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND DOCUMENTATION OF SEDIMENTATION AND EROSION CONTROL AND STORM WATER QUALITY ISSUES RELATED TO THE PROJECT, AS REQUIRED AND AS NECESSARY TO COMPLY WITH APPLICABLE LAWS, CODES, AND REGULATIONS.
- INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES.
- SEDIMENT AND EROSION FROM ALL WORK AREAS SHALL BE CONTAINED ON THE SITE, AWAY FROM WETLANDS, OUT FALLS, WATERWAYS, AND ENVIRONMENTALLY SENSITIVE AREAS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS BEFORE AND AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT.
- IF ANY OF THE SESC MEASURES ON THE SITE ARE DEEMED INADEQUATE OR INEFFECTIVE, THE GOVERNING AUTHORITY HAS THE RIGHT TO REQUIRE ADDITIONAL SESC MEASURES AT THE EXPENSE OF THE CONTRACTOR.
- INSTALL SILT FENCE AS INDICATED ON THE PLANS AND AT ADDITIONAL AREAS AS NECESSARY.
 - SILT FENCE SHALL BE INSTALLED PER THE DETAIL.
 - BUILD UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE.
 - IF SILT FENCE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED PROMPTLY.
 - SILT FENCE SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRE MAINTENANCE SHALL BE PROVIDED PROMPTLY.
- INSTALL INLET FILTERS ON ALL CATCH BASINS PER DETAIL.
 - INLET FILTERS SHALL BE INSPECTED WEEKLY UNDER NORMAL CONDITIONS, WITHIN 24 HOURS OF A RAINFALL AND DAILY DURING A PROLONGED RAIN EVENT.
 - BUILD UP OF SEDIMENT AND DEBRIS SHALL BE REMOVED PROMPTLY.
 - IF FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.
- NO STOCKPILED MATERIAL SHALL REMAIN ON SITE.
- PROVIDE JUTE MATTING OR NETTED MULCH ON TEMPORARY SLOPES 2:1 OR STEEPER. SEED AND MULCH OTHER SLOPES TO REMAIN UNFINISHED FOR MORE THAN 14 DAYS.
- IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDING AREAS WITH UN-WEATHERED SMALL GRAIN STRAW, SPREAD UNIFORMLY AT THE RATE OF 1.2 TO 2 TONS PER ACRE OF 100 POUNDS (2-3 BALES) PAR 100 SF. THIS MULCH SHOULD BE ANCHORED WITH DISC TYPE MULCH ANCHORING TOOL OR OTHER MEANS. MULCH MATTING MAY BE USED IN LIEU OF LOOSE MULCH.
- IF ANY DEWATERING IS REQUIRED, IT SHALL BE DISCHARGED THROUGH A FILTER BAG OVER A WELL VEGETATED AREA. THE PUMP MUST DISCHARGE AT A NON-EROSIVE VELOCITY. IF NECESSARY, AN APPROVED ENERGY DISSIPATOR MAY BE USED.
- DURING DRY PERIODS, ALL DISTURBED AREAS SHALL BE WATERED FOR DUST CONTROL.
- SEDIMENT TRACKED ONTO ANY ROADWAY SHALL BE REMOVED IMMEDIATELY. STREETS AND/OR PARKING AREAS WILL BE SCRAPED ON A DAILY BASIS AND SWEEPED AT A MINIMUM OF ONCE PER WEEK BY THE LANDOWNER OR LANDOWNER'S REPRESENTATIVE.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR DISTURBED AREAS SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETE OR ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION MEASURES ARE IMPLEMENTED.

SEQUENCE OF EROSION AND SEDIMENT CONTROL OPERATIONS:

- A PERIMETER DEFENSE SILT FENCE WILL BE INSTALLED, ALONG WITH INLET FILTERS PER PLANS & DETAIL. PRIOR TO CONSTRUCTION TO CONTAIN RUNOFF FROM ALL PROPOSED DISTURBED AREAS. SEDIMENT CONTROL WILL BE INITIATED WHICH WILL CONSIST OF MAINTAINING EXISTING VEGETATION AND DIRECTING RUNOFF ON SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE. DAMAGED, DECOMPOSED, OR INEFFECTIVE SILT FENCE SHALL BE REPLACED PROMPTLY.
- DURING CONSTRUCTION THE ENDS OF ALL OPEN PIPES WILL BE PROTECTED BY FILTER FABRIC, STONE FILTERS OR OTHER APPROVED MEANS.
- ANY REMAINING DENUDED AREA SHALL BE PERMANENTLY STABILIZED WITHIN 5 DAYS OF COMPLETION OF FINAL GRADING.
- AT THE COMPLETION OF THE CONSTRUCTION, TEMPORARY CONTROL MEASURES WILL BE REMOVED AND CONVERTED TO PERMANENT CONTROLS. FINAL GRADING WILL BE COMPLETED AND THE GROUND WILL BE PERMANENTLY STABILIZED. FILTER FABRIC FENCES SHALL BE REMOVED AND ANY BARE SPOTS WILL BE SEEDED. CATCH BASINS AND DRAIN INLETS WILL BE CAREFULLY UNCOVERED AND ANY SEDIMENT OR DEBRIS WILL BE REMOVED.
- CONTRACTOR IS TO SEED CRITICAL AREAS IDENTIFIED BY OWNER OR OWNER'S REPRESENTATIVE DAILY, WHEN THOSE AREAS ARE SUBJECT TO EARTH CHANGES. CONTRACTOR IS ALSO RESPONSIBLE FOR REGULAR MAINTENANCE OF PLANT COVER IN THESE AREAS. COVER SHALL BE MAINTAINED SO AS TO CONTROL SOIL EROSION.
- AT THE CONCLUSION OF CONSTRUCTION, THE OWNER WILL ASSUME THE RESPONSIBILITY FOR PERMANENT MAINTENANCE OF THE EROSION AND SEDIMENTATION CONTROL MEASURES.



GENERAL SITE PLAN
1" = 300'

CIVIL DRAWING LIST

| DRAWING NUMBER | DRAWING TITLE |
|----------------|----------------------|
| CE-01 | GENERAL SITE PLAN |
| CE-02 | SITE DEMOLITION PLAN |
| CE-03 | SITE PLAN |
| CE-04 | SITE DETAILS |
| CE-05 | SITE DETAILS |
| CE-06 | PROFILES |

This drawing has been prepared solely for the use of Brookhaven National Laboratory and there are no representations of any kind made by Giffels Partnership to any party with whom Giffels Partnership has not entered into a contract.

This drawing shall not be used for construction purposes until the seal and signature of the responsible registered professional engineer and proper permit forms and related fees are transmitted by the Owner, Owner's Agent or Contractor to the Authority Having Jurisdiction.

| | | | | | |
|---|----------------|------------------|---------------------------------|----------|-----|
| JOB NO. SHEET NO. REVISION | | DATE | ENR. | APP'D. | DA. |
| BROOKHAVEN NATIONAL LABORATORY | | | | | |
| UNDER CONTRACT WITH UNITED STATES DEPARTMENT OF ENERGY PLANT ENGINEERING DIVISION UPTON, NEW YORK 11973 | | | | | |
| JOB TITLE CENTRAL CHILLED WATER FACILITY PHASE II | | | DWG. TITLE GENERAL SITE PLAN | | |
| DATE | ACCT. NO. | SHEET OF | | | |
| SCALE AS NOTED | DWN. BY SSK | REV'D BY XX | JOB NO. 11705 | DWG. NO. | |
| ESHD RISK LEVEL | APP'D. BY | BLDG. NO. 600 | CE-01 | | |
| PATH: | | | | | |



Giffels Partnership
25200 Telegraph Road, Suite 200
Southfield, Michigan 48033 USA
Tel: 248-936-8000
Fax: 248-936-8111

Approved By
W. KUSSRO
Project Manager
G. KAPLAN
Project Engineer/Architect
S. KAPLAN
Project No.
SF070003