STATE OF COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

6th Ave Borrow Stormwater Plan

Cameron Mang <cmang@semaconstruction.com> Tue, Jul 24, 2018 at 7:05 AM
To: "Ebert - DNR, Jared" <jared.ebert@state.co.us>

Jared,

Please see attached for the Stormwater Plan for the borrow site. Please note that the maps will be modified in the field to include control measures for the topsoil stockpile.

Thanks,

Cameron Mang, EIT | SEMA Construction, Inc.

Environmental Compliance Manager, Rocky Mountain District

7353 S. Eagle St. Centennial, CO 80112

Office 303.627.2600 | Direct Line 720.450.0588 |Fax 303.627.2626

cmang@semaconstruction.com

www.semaconstruction.com

2 attachments

DCS17_4055-SWMP Plans.pdf
1092K

DCS17-0055- SWMP - Aurora One.pdf
742K

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT

CONSTRUCTION PLANS FOR

AURORA ONE BORROW AREA SITE

A PARCEL OF LAND LOCATED IN THE NORTH HALF OF SECTION 12,
TOWNSHIP 4 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF AURORA, COUNTY OF ARAPAHOE, STATE OF COLORADO

CITY OF AURORA NOTES:

1) 2.03.6.01 CITY OF AURORA PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH CITY OF AURORA DESIGN CRITERIA AND THE CITY CODE. THE CITY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND ELEVATIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. THE CITY OF AURORA, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

2) 2.03.6.02 ALL ROADWAY CONSTRUCTION SHALL CONFORM TO CITY OF AURORA "ROADWAY DESIGN AND CONSTRUCTION SPECIFICATIONS," LATEST EDITION.

3) 2.03.6.03 ALL WATER DISTRIBUTION, SANITARY SEWER, AND STORM DRAINAGE CONSTRUCTION SHALL CONFORM TO CITY OF AURORA "STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE," LATEST REVISION.

4) 2.03.6.04 ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE CITY STANDARDS AND SPECIFICATIONS.

5) 2.03.6.05 THE CONTRACTOR SHALL NOTIFY THE CITY PUBLIC IMPROVEMENT INSPECTIONS DIVISION, 303-739-7420, 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.

6) 2.03.6.06 LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION, CONTACT UTILITY NOTIFICATION CENTER OF COLORADO, 1-800-922-1987 OR 811.

7) 2.03.6.07 THE CONTRACTOR SHALL HAVE ONE SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF AURORA), ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES.

8) 2.03.6.08 IT IS THE CONSULTANT'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ON-SITE, AND OFF-SITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NEEDED DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS EITHER ON-SITE OR OFF-SITE, WHICH ARISE IN THE FIELD, WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY. THE COST TO RECTIFY ANY ADVERSE SITUATION TO MEET THE CITY STANDARDS AND SPECIFICATIONS AND THE CITY CODE SHALL BE BORNE SOLELY BY THE DEVELOPER.

9) 2.03.6.09 THE OWNER/DEVELOPER MUST OBTAIN THE WRITTEN PERMISSION OF THE ADJACENT PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE GRADING OR CONSTRUCTION.

10) 2.03.6.10 CONCRETE SHALL NOT BE PLACED UNTIL THE FORMS HAVE BEEN INSPECTED AND A POUR SLIP ISSUED.

11) 2.03.6.11 PAVING OF PUBLIC STREETS SHALL NOT START UNTIL A SOIL REPORT AND PAVEMENT DESIGN IS APPROVED BY THE CITY ENGINEER, PROOF ROLLING, AND SUBGRADE AND TRENCH COMPACTION TESTS TAKEN BY THE DEVELOPER'S GEOTECH ARE APPROVED BY PUBLIC IMPROVEMENTS INSPECTIONS/ MATERIALS LAB.

12) 2.03.6.12 STANDARD CITY OF AURORA CURB RAMPS ARE TO BE CONSTRUCTED AT ALL CURB RETURNS, AT ALL "T" INTERSECTIONS AND AT ALL CURBSIDE KIOSKS OR CLUSTERS, UNLESS OTHERWISE MODIFIED BY THESE PLANS.

13) 2.03.6.13 ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.

14) 2.03.6.14 ALL ELEVATIONS ARE FLOWLINE UNLESS OTHERWISE NOTED.

15) 2.03.6.15 THE CITY OF AURORA SHALL NOT BE LIABLE FOR THE MAINTENANCE OF PRIVATE UTILITIES OR ANYTHING LABELED PRIVATE ON SITE. THESE FACILITIES MAY NOT MEET CITY STANDARDS AND ARE TO REMAIN IN PRIVATE MAINTENANCE BY PROPERTY OWNER IN PERPETUITY. THESE PRIVATE FACILITIES INCLUDE, IF PROVIDED, THE PRIVATE UNDERDRAIN SYSTEM PLACED WITHIN THE PUBLIC RIGHT-OF-WAY.

16) 2.03.6.16 THE CONTRACTOR/DEVELOPER IS RESPONSIBLE FOR CONTACTING CDOT TO ENSURE ALL WORK ON OR ADJACENT TO STATE HIGHWAYS OR CDOT R.O.W. MEETS CDOT REQUIREMENTS.

17) 2.03.6.17 THE STREETLIGHT OR PEDESTRIAN LIGHT INSTALLATION SHALL BE DESIGNED, FUNDED, AND CONSTRUCTED BY THE DEVELOPER/OWNER. OWNERSHIP AND MAINTENANCE OF THE STREET/PEDESTRIAN LIGHTS SHALL BE THE RESPONSIBILITY OF THE CITY OF AURORA ONCE THEY HAVE BEEN ACCEPTED. STREET LIGHT AND/OR PEDESTRIAN LIGHTING PLANS SHALL BE PREPARED AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL AND SHALL BECOME A PART OF THE APPROVED CIVIL CONSTRUCTION PLANS FOR THE PROJECT. CERTIFICATE OF OCCUPANCIES WILL NOT BE ISSUED UNTIL THE STREET AND/OR PEDESTRIAN LIGHTING PLANS ARE APPROVED, CONSTRUCTED, AND INITIALLY ACCEPTED.

18) 2.03.6.18 THE OWNER/CONTRACTOR MUST OBTAIN A C.D.P.S. STORM WATER DISCHARGE PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, IF REQUIRED.

19) 2.03.5.19 THE OWNER/CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ARMY CORP OF ENGINEERS FOR WETLAND MITIGATION OR WORK WITHIN THE WATERS OF THE U.S., IF REQUIRED. IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO PROVIDE A COPY OF THE ARMY CORP OF ENGINEER'S REQUIREMENTS TO THE CITY OF AURORA. IF THERE ARE NO REQUIREMENTS BY THE ARMY CORP OF ENGINEERS, THEN A WRITTEN NOTIFICATION FROM THE ARMY CORM OF ENGINEERS SHALL BE SUBMITTED TO THE CITY OF AURORA STATING SUCH. CITY APPROVAL OF THE CONSTRUCTION PLANS IS SUBJECT TO THE OWNER/CONTRACTOR OBTAINING A 404 PERMIT, IF APPLICABLE. A COPY OF THIS PERMIT SHALL BE SUBMITTED TO THE CITY OF AURORA PRIOR TO ANY PERMITS BEING ISSUED.

20) 2.03.6.20 ALL SIGNAGE AND STRIPING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, UNLESS OTHERWISE NOTED BY THE CITY OF AURORA.

21) 2.03.6.21 PRIVATE UNDERDRAIN SYSTEMS FOR GROUNDWATER DISCHARGES FROM FOUNDATION DRAINS SHALL BE OWNED AND MAINTAINED BY THE HOA

EROSION CONTROL NOTES:

STANDARD STATEMENT AND NOTES FOR SWMP DESIGN DRAWINGS "PURSUANT TO SECTIONS 138-440 AND 138-442 OF THE AURORA MUNICIPAL CODE, THE PERMITTEE SHALL LOCATE, INSTALL, AND MAINTAIN ALL BEST MANAGEMENT PRACTICES, INCLUDING, BUT NOT LIMITED TO, EROSION CONTROLS, SEDIMENT CONTROLS, DRAINAGE CONTROLS, AND WATER QUALITY BMPS AS INDICATED IN THE APPROVED STORMWATER MANAGEMENT PLAN (SWMP). THE FOLLOWING NOTES ARE A REQUIREMENT AND SHALL BE INCLUDED ON THE SWMP DESIGN DRAWINGS DEVELOPED FOR THIS PROJECT AND SUBMITTED FOR APPROVAL BY THE CITY. BMP INSTALLATIONS SHALL BE INSTALLED PER THE COA STANDARD DETAIL IN EFFECT AT THE TIME OF INSTALLATION OR PER THE APPROVED SWMP DESIGN DRAWING, A COA APPROVED VARIANCE, OR A COA APPROVED DESIGN DRAWING PLAN AMENDMENT."

1. THE PERMITTEE SHALL BE RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, STORM SEWERS, STORM SEWER APPURTENANCES, OTHER PROPERTIES, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

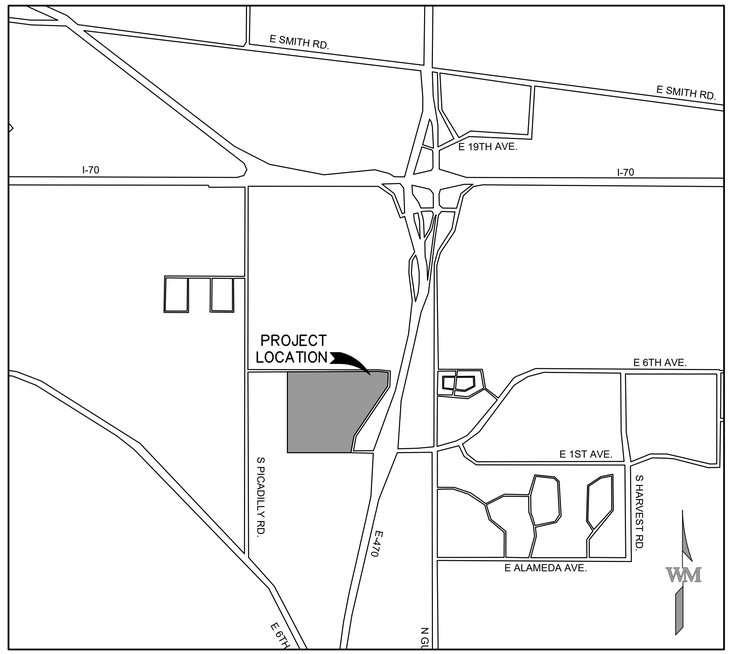
2. ADDITIONAL EROSION AND SEDIMENT CONTROL BMPS MAY BE REQUIRED DURING AND AFTER CONSTRUCTION AND SHALL BE EXECUTED AND COMPLETED BY THE PERMITTEE. THE PERMITTEE SHALL PLAN, INSTALL, AND MAINTAIN ALL EROSION, AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE AND WATER QUALITY BMPS AS INDICATED ON THIS PLAN AND AS NECESSARY TO REDUCE THE DISCHARGE OF POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE ADVERSE IMPACTS, EROSION AND SEDIMENT DEPOSITION ONTO PAVED SECTIONS, INTO STORM SEWERS, STORM SEWER APPURTENANCES, RECEIVING WATERS, OR OFF THE PROJECT SITE.

3. THE PERMITTEE SHALL TAKE APPROPRIATE PREVENTIVE MEASURES TO MINIMIZE TO THE MAXIMUM EXTENT PRACTICABLE DIRT AND MUD FROM BEING TRACKED OR DEPOSITED ONTO PAVED SECTIONS VIA MULTIPLE BMPS. SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY BE TRACKED, DEPOSITED, OR ACCUMULATED ON PAVED SECTIONS, IN THE FLOW LINES, PRIVATE PROPERTY, AND/OR PUBLIC RIGHTS-OF-WAY OF THE CITY AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE CLEANED UP.

4. AREAS REACHING SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL PLACEMENT OPERATIONS MUST BE DRILL SEEDED AND CRIMP MULCHED WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL OPERATIONS. IF AN INCOMPLETE AREA IS TO REMAIN INACTIVE FOR LONGER THAN 30 DAYS, IT MUST BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE LANDSCAPED WITHIN 14 DAYS FROM THE SUSPENSION OR COMPLETION OF LAND DISTURBANCE ACTIVITIES.

5. THIS APPROVED SWMP DESIGN DRAWING, THE ASSOCIATED APPROVED SWMP NARRATIVE, A COPY OF THE STORMWATER QUALITY DISCHARGE PERMIT, AND THE RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES MANUAL SHALL BE KEPT ON SITE AT ALL TIMES.

6. ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED FROM A BMP (MAINTENANCE) WHEN THE SEDIMENT LEVEL OR DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF THE BMP OR AS DEFINED WITHIN THE RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES MANUAL, WHICHEVER IS MORE RESTRICTIVE. IF MAINTENANCE OF THE BMP DOES NOT RESTORE THE INTENDED FUNCTION, THEN THE BMP MUST BE REPLACED.



VICINITY MAP
SCALE 1"=2000'

EROSION CONTROL NOTES (CONT'D):

7. THE DISCHARGING OF CEMENT, CONCRETE, OR MORTAR FROM READY MIX DELIVERY TRUCKS, PUMP TRUCKS, BATCH PLANTS OR SMALL MECHANICAL MIXERS DIRECTLY ONTO PAVED SURFACES OR DISTURBED GROUND HAVING NO CONTAINMENT IS PROHIBITED. THE DISPOSAL OF ANY LIQUID WASTES OR WASH WATER FROM ANY OPERATIONS SUCH AS PAINTING, DRYWALL, OR TILE INSTALLATIONS DIRECTLY ONTO PAVED SURFACES OR THE GROUND WITHOUT CONTAINMENT IS PROHIBITED. THE PERMITTEE SHALL PROTECT ALL CURB FLOW LINES, ADJACENT WATERWAYS, WETLANDS, STORM SEWERS, STORM SEWER APPURTENANCES, OTHER PROPERTIES, ETC., ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE.

8. IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO RESOLVE CONSTRUCTION PROBLEMS DUE TO CHANGING CONDITIONS OR DESIGN ERRORS THEY MAY ENCOUNTER DURING THE PROGRESS OF ANY PORTION OF THE IF CONDITIONS IN THE FIELD REQUIRE CHANGES AND THE PROPOSED MODIFICATIONS TO THE APPROVED PLANS INVOLVE SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK OR TO FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE CONTRACTOR, THROUGH THE ENGINEER OF RECORD, SHALL BE RESPONSIBLE TO REVISE PLANS AND SUBMIT THEM TO THE CITY OF AURORA FOR APPROVAL PRIOR TO ANY FURTHER CONSTRUCTION
RELATED TO THAT PORTION OF THE WORK. ANY CONTROLS, FEATURES OR IMPROVEMENTS NOT CONSTRUCTED IN ACCORDANCE WITH THE APPROVED SWMP, CITY OF AURORA STANDARD DETAIL DESIGNS, CITY OF AURORA APPROVED VARIANCES, OR AN APPROVED DESIGN DRAWING AMENDMENT SHALL BE REMOVED AND THE CONTROLS, FEATURES AND/OR IMPROVEMENTS SHALL BE RECONSTRUCTED.

9. SECONDARY CONTAINMENT FEATURES SHALL BE IN PLACE FOR ANY BULK FUEL STORAGE, MIXERS, GENERATORS, OR ANY OTHER SPILL OR LEAK SOURCE THAT REMAINS ONSITE FOR A PERIOD LONGER THAN 7 CALENDAR DAYS. A RECOVERY OR SALVAGE DRUM SHALL BE KEPT ON-SITE FOR STORAGE OF CONTAMINATED SOILS.

10. STRAW BALES AND RECYCLED ASPHALT OR CONCRETE ARE NOT ACCEPTABLE FOR THE CONSTRUCTION OF BMPS WITHIN THE CITY OF AURORA AND MAY NOT BE USED.

SHEET INDEX

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3	C2.2	FINAL EROSION CONTROL PLAN

ENGINEER'S CERTIFICATION:

THESE CONSTRUCTION PLANS FOR TOWER BUSINESS CENTER FILING NO. 1 HAVE BEEN PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE REQUIREMENTS OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND THE STORM DRAINAGE AND TECHNICAL CRITERIA OF THE CITY.

THOMAS C. JANSEN
REGISTERED PROFESSIONAL ENGINEER
STATE OF COLORADO NO. 35942
WARE MALCOMB

PROJECT OWNER/DEVELOPER SIGNATURE BLOCK
I HAVE REVIEWED THE INFORMATION CONTAINED WITHIN THE STORMWATER MANAGEMENT PLAN AND ACCEPT RESPONSIBILITY FOR THE REQUIREMENTS SET FORTH.

DATE

PLAN PREPARER SIGNATURE BLOCK
I HAVE REVIEWED THE INFORMATION CONTAINED WITHIN THE STORMWATER MANAGEMENT PLAN AND ACCEPT RESPONSIBILITY FOR THE REQUIREMENTS SET FORTH.

TAYLOR J. REEVES, PE
STATE OF COLORADO REGISTRATION NO. 54345
FOR AND ON BEHALF OF WARE MALCOMB
DATE

CONSULTANT TEAM:

OWNER/DEVELOPER
SEMA CONSTRUCTION, INC. (720) 450-0588
7353 S. EAGLE ST.
CENTENNIAL, COLORADO 80112
CONTACT: CAMERON MANG

CIVIL ENGINEER/SURVEYOR
WARE MALCOMB (303) 561-3333
990 SOUTH BROADWAY SUITE 230
DENVER, COLORADO 80223
CONTACT: GREG BLOUNT

BENCHMARK:
ELEVATIONS ARE BASED ON CITY OF AURORA BENCHMARK NO. 4S6611NE001 BEING A 3 INCH DIAMETER BRASS CAP SET IN CONCRETE ON THE WEST SIDE OF PICADILLY ROAD APPROXIMATELY 1120 FEET SOUTH OF THE CENTERLINE OF 6TH AVENUE, 1 FOOT EAST OF WEST RIGHT-OF-WAY FENCE AND IN LINE WITH A FENCE ON THE EAST OF PICADILLY ROAD.
ELEVATION = 5510.695 (NAVD88)

Approved for One Year From this Date

City Engineer — Date

Water Department — Date

WARE MALCOMB
LEADING DESIGN FOR COMMERCIAL REAL ESTATE
990 south broadway
suite 230
denver, co 80209
p 303.561.3333
waremalcomb.com

FOR AND ON BEHALF OF WARE MALCOMB

AURORA ONE BORROW AREA SITE
COVER SHEET

NO.	DATE	REMARKS

JOB NO.:	DCS17-4055
PA / PM:	GB
DRAWN BY:	SL
DATE:	07/16/2018

PRESUBMITTAL

SHEET
C1.0
Sheet 1

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT

BMP LEGEND

	FLOW DIRECTION
TS	TEMPORARY SEEDING
VTC	VEHICLE TRACKING CONTROL
SSA	STABILIZED STAGING AREA
CD	CHECK DAM
LOC	LIMITS OF CONSTRUCTION
SF	SILT FENCE
DD	DIVERSION DITCH
DTC	DEBRIS AND TRASH CONTROL

BENCHMARK:
ELEVATIONS ARE BASED ON CITY OF AURORA BENCHMARK NO. 4S6611NE001 BEING A 3 INCH DIAMETER BRASS CAP SET IN CONCRETE ON THE WEST SIDE OF PICADILLY ROAD APPROXIMATELY 1120 FEET SOUTH OF THE CENTERLINE OF 6TH AVENUE, 1 FOOT EAST OF WEST RIGHT-OF-WAY FENCE AND IN LINE WITH A FENCE ON THE EAST OF PICADILLY ROAD.
ELEVATION = 5510.695 (NAVD88)

0 50 100 200
SCALE: 1" = 100'
ORIGINAL GRAPHIC SCALE

PRESUBMITTAL

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990 south broadway
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p 303.561.3333
waremalcomb.com

FOR AND ON BEHALF
OF WARE MALCOMB

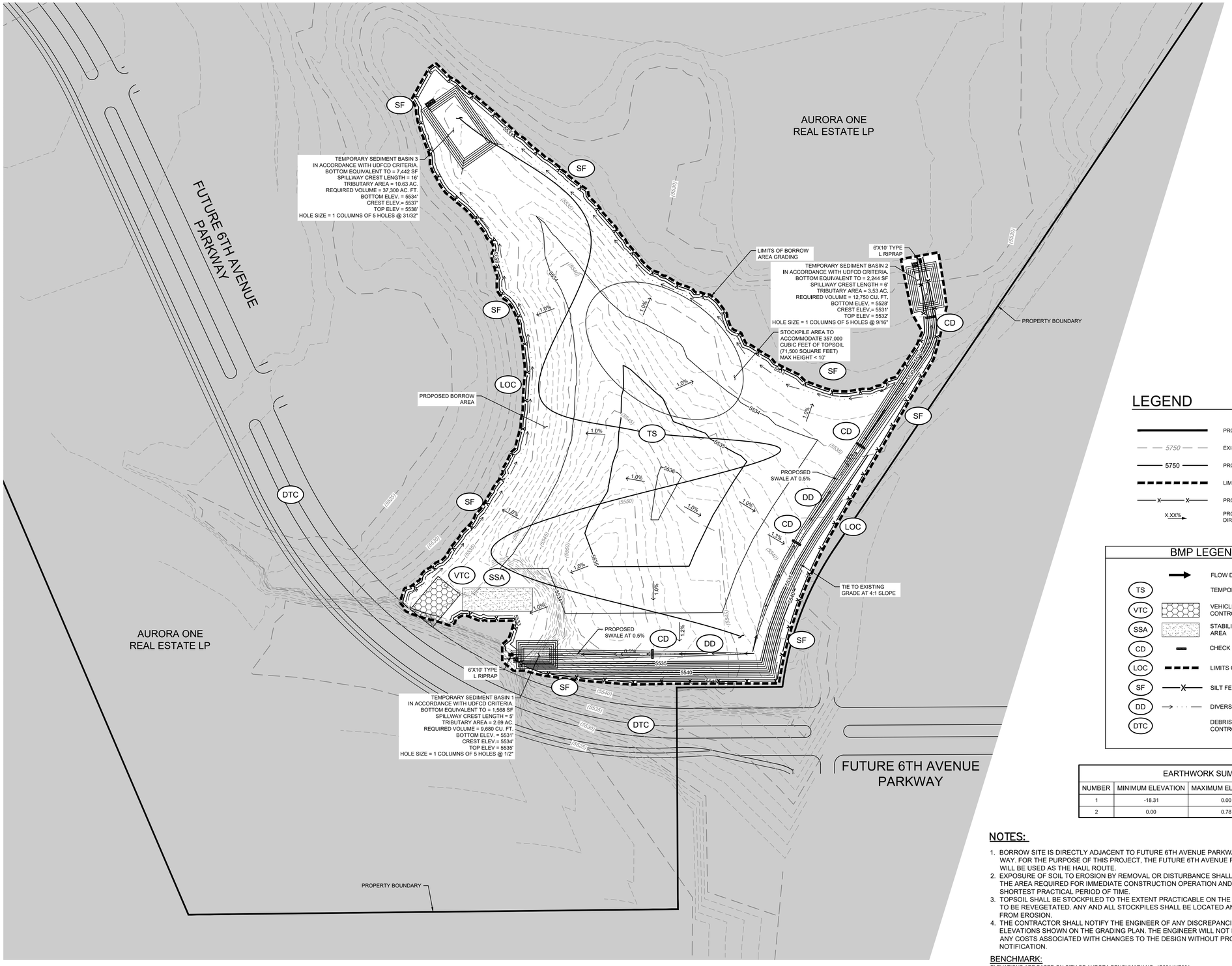
AURORA ONE
BORROW AREA SITE
INITIAL EROSION CONTROL PLAN

NO.	DATE	REMARKS

JOB NO.:	DCS17-4055
PA / PM:	GB
DRAWN BY:	SL
DATE:	07/16/2018

SHEET
C2.1
Sheet 2

CAUTION: IF THIS SHEET IS NOT 24"x36" IT A REDUCED PRINT



LEGEND

- PROPERTY LINE
- 5750 EXISTING CONTOURS
- 5750 PROPOSED CONTOURS
- LIMITS OF BORROW AREA
- PROPERTY FENCE
- X.XX% PROPOSED SLOPE AND DIRECTION

BMP LEGEND

	→	FLOW DIRECTION
TS		TEMPORARY SEEDING
VTC		VEHICLE TRACKING CONTROL
SSA		STABILIZED STAGING AREA
CD		CHECK DAM
LOC		LIMITS OF CONSTRUCTION
SF	X	SILT FENCE
DD	→	DIVERSION DITCH
DTC		DEBRIS AND TRASH CONTROL

EARTHWORK SUMMARY

NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	2D AREA	VOLUME
1	-18.31	0.00	15.17 Acres	150,605.0 C.Y.
2	0.00	0.78	0.06 Acres	12.7 C.Y.

NOTES:

1. BORROW SITE IS DIRECTLY ADJACENT TO FUTURE 6TH AVENUE PARKWAY RIGHT OF WAY. FOR THE PURPOSE OF THIS PROJECT, THE FUTURE 6TH AVENUE RIGHT OF WAY WILL BE USED AS THE HAUL ROUTE.
2. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
3. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROTECTED FROM EROSION.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ELEVATIONS SHOWN ON THE GRADING PLAN. THE ENGINEER WILL NOT BE LIABLE FOR ANY COSTS ASSOCIATED WITH CHANGES TO THE DESIGN WITHOUT PROPER NOTIFICATION.

BENCHMARK:

ELEVATIONS ARE BASED ON CITY OF AURORA BENCHMARK NO. 4S6611NE001 BEING A 3 INCH DIAMETER BRASS CAP SET IN CONCRETE ON THE WEST SIDE OF PICADILLY ROAD APPROXIMATELY 1120 FEET SOUTH OF THE CENTERLINE OF 6TH AVENUE, 1 FOOT EAST OF WEST RIGHT-OF-WAY FENCE AND IN LINE WITH A FENCE ON THE EAST OF PICADILLY ROAD.
ELEVATION = 5510.695 (NAVD88)

0 50 100 200
SCALE: 1" = 100'
ORIGINAL GRAPHIC SCALE

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waremalcomb.com

FOR AND ON BEHALF OF WARE MALCOMB

AURORA ONE BORROW AREA SITE
FINAL EROSION CONTROL PLAN

NO.	DATE	REMARKS

JOB NO.:	DCS17-4055
PA / PM:	GB
DRAWN BY:	SL
DATE:	07/16/2018

SHEET
C2.2/3
Sheet 3

PRESUBMITTAL

Stormwater Management Plan
for:

Aurora One Borrow Area Site

East 6th Avenue Parkway

Aurora, CO 80018

Owner/Operator(s):

SEMA Construction, Inc.
7353 S. Eagle Street
Centennial, CO 80112
Contact: Cameron Mang
720-450-0588

Engineer Contact(s):

Ware Malcomb
Greg Blount
990 S. Broadway, Suite 230
Denver, CO 80209
(303) 561-3333
gblount@waremalcomb.com

SWMP Preparation Date: 07/16/2018

Estimated Project Dates:

Project Start Date: 09/2018 **Project Completion Date:** 11/2019

APPROVED FOR ONE YEAR FROM THIS DATE	
City Engineer	**Date**
Aurora Water Department	**Date**

"THIS STORMWATER MANAGEMENT PLAN HAS BEEN PLACED IN THE CITY OF AURORA FILE FOR THIS PROJECT AND HAS BEEN DETERMINED TO COMPLY WITH THE APPLICABLE CITY OF AURORA STORMWATER MANAGEMENT CRITERIA. ADDITIONAL STORMWATER MANAGEMENT, EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER OR HIS/HER AGENTS, DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED."

"REVIEW OF THIS PLAN BY THE CITY OF AURORA SHALL NOT IMPLY THAT IT HAS BEEN REVIEWED FOR COMPLIANCE WITH THE REQUIREMENTS SET FORTH BY THE STATE OF COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY."

"SEE APPROVED STORMWATER MANAGEMENT PLAN DESIGN DRAWINGS (SITE PLAN) FOR SITE SPECIFIC BEST MANAGEMENT PRACTICES."

Project Owner/Developer Signature Block

I have reviewed the information contained within the Stormwater Management Plan and accept responsibility for the requirements set forth.

_____ _____

Permittee/Affiliation Date

Plan Preparer Signature Block

I acknowledge my responsibility for the preparation of the Stormwater Management Plan.

_____ _____

CO Professional Engineer Date

for Ware Malcomb

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SWMP APPENDIX F – Vertical and General Construction Matrix

"Pursuant to Sections 138-440 and 138-442 of the Aurora Municipal Code, the Permittee shall locate, install, and maintain all Best Management Practices, including, but not limited to, erosion controls, sediment controls, drainage controls, and water quality BMPs as indicated in the approved Stormwater Management Plan (SWMP). The following notes are a requirement and shall be included in the SWMP narrative developed for this project and submitted for approval by the City. BMP installations shall be installed per the COA Standard Detail in effect at the time of installation or per the approved SWMP design drawing, a COA approved variance, or a COA approved design drawing plan amendment."

COA Stormwater Management Standard Notes

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1. A City of Aurora Stormwater Quality Discharge Permit for Construction Activities must be issued by the City and executed by a COA Erosion Control staff prior to any earthwork activities. An on-site inspection will be conducted to verify the correct installation and adequacy of initial BMPs for the site. No earthwork, including clearing and grubbing, or demolition activities are to begin until the project site has passed an inspection and the City of Aurora Stormwater Quality Discharge Permit for Construction Activities has been executed. The Permittee is required to present the project's CDPHE-WQCD Stormwater Discharges Associated with Construction Activity Permit to the Inspector during the initial inspection. The Permittee shall designate a Stormwater Management Plan (SWMP) Administrator on the application for the City of Aurora Stormwater Quality Discharge Permit for Construction Activities. The SWMP Administrator will act as the project representative for any concerns or issues regarding environmental controls and stormwater management.

2. These requirements shall be the obligation of the Permittee, until such time as the Permit is properly closed, or otherwise allowed by the City to be voided, modified, transferred, re-assigned or replaced.

3. This SWMP narrative, the SWMP design drawings, and the Permitte's inspection and maintenance records are all components of required record keeping and shall be kept on site at all times and updated as required. These and any other pertinent records shall be provided to the City when requested.

4. Any discrepancy between this SWMP and any other approved Stormwater Management Plan for this site shall require compliance with the more restrictive valid, approved plan.

5. Streets shall be constructed with Rough Cut Street Control measures, surface roughened or otherwise temporarily stabilized with rough cut street controls within seven (7) days of completion of grading in the appropriate phase. If paving is to occur within fourteen (14) days after final grading, rough cut street controls shall be waived.

6. Inspection and maintenance of erosion and sediment control Best Management Practices (BMPs) are the continuous obligations of the Permittee. BMPs shall be inspected at a minimum every seven (7) days and within 24-hours after the end of a precipitation event that produces run-off, and following snowmelt events. If a site is temporarily idle and no construction activities will occur during the 48 hours following a storm event, the post-precipitation event (including

snowmelt) inspection shall be conducted prior to commencing construction activities on the site, but no later than 72 hours following the storm event. All necessary maintenance and repairs shall be initiated and completed on an on-going basis, as features are required to operate continuously. Inspections may need to be conducted at a greater frequency than noted above, to ensure features and systems are operating adequately. Erosion and sediment control BMPs shall be maintained and functional for the entire duration of the project.

7. Ingress and egress vehicle access points onto disturbed areas shall be stabilized with Vehicle Tracking Control Pads (VTC) and shall be constructed with angular rock, 3" to 6" in size and to a depth of at least 9-inches. The use of recycled asphalt or concrete is not permitted. The VTC shall be installed over a liner of non-woven geotextile with a weight of at least 10 oz/yd^2 and a grab tensile strength of at least 250 pounds. No dirt or other materials shall be placed on paved surfaces or curb flow lines to act as curb ramps. Only metal ramps or rock wattles may be used in the curb flow line.

8. Fugitive dust emissions resulting from grading activities and/or wind shall be controlled using reasonably available control technology as defined by the Colorado Department of Public Health and Environment.

9. All potential pollution sources on-site shall be identified and control measures installed and practiced to minimize the likelihood of a release. Spill prevention controls shall be developed for the site with BMPs in place to respond to any spills, leaks or other releases.

10. Hydraulic mulching as a means to cover and protect seeding is not an acceptable means of applying mulch in the City of Aurora unless a previously installed irrigation system is used to aid germination and growth and where approved through variance. Hydraulic seeding is not permitted.

11. For all porous landscape detention facilities, in order to prevent clogging of filter medium, installation of the filtration system must be delayed until after the site is fully landscaped.

12. If stockpiles are located within 100 feet of a drainageway or a public storm sewer system, additional sediment controls such as temporary diversion dikes, silt fence, or sediment basin shall be required.

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SECTION 1 SITE DESCRIPTION

In this section, the preparer can gather some basic site information that will be helpful to the permittee later when you file for permit coverage.

- For more information, see City of Aurora *Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities, current revision* (also known as the *Rules and Regs*), Chapter 2
- Detailed information on determining your site's latitude and longitude can be found at www.epa.gov/npdes/stormwater/latlong

i Site Location

- Site location including, Section, township, range, and latitude/longitude to the nearest 15 seconds.
- Project street location or nearest major cross streets
- If applicable, specific acknowledgement that the land is currently, or will ultimately be owned or managed by the Parks, Recreation and Open Space Department.

Project/Site Name: Aurora One Borrow Site Area

Project Street/Location: East 6th Avenue Parkway

City: Aurora State: CO ZIP Code: 80018

County or Similar Subdivision: Arapahoe County

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Latitude:	Longitude:
1. __º__.__' N (degrees, minutes, seconds)	1. __º__.__' W (degrees, minutes, seconds)
2. __º__.__' N (degrees, minutes, decimal)	2. __º__.__' W (degrees, minutes, decimal)
3. 39.721552 N (decimal)	3. -104.724496 W (decimal)

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____) ☐ EPA Web site ☐ GPS

☒ Other (please specify): Google Earth

Is this land currently or will it ultimately be owned or managed by COA Parks, Recreation, and Open Space Department? ☐ Yes ☒ No

CDPS Permit #*:_____

COA SWQ Permit #*: _____

**(This is the unique identifying number assigned to your project by your permitting authority after you have applied for coverage under the appropriate construction permit.)*

ii Description of Adjacent Areas

– Provide a description of adjacent areas such as residential areas, roads, streams, lakes, etc, which might be affected by the proposed project's land disturbing activity.

Provide adjacent area information

The site is adjacent to E-470 to the east, East 6th Ave Parkway to the South, S Picadilly Road to the west and east 6th Avenue to the north.

a) Nature and Purpose of Construction Activity

Describe of the nature and purpose of the construction activity, note any vertical construction.

The project is a borrow site to generate dirt to be used on the 6th Avenue Parkway extension which is located within the Aurora One site.

☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction ☐ Linear Utility ☐ Overlot Grading ☐ Over-excavation ☐ Vertical Construction

☒ Other (please specify): Borrow area site (dirt for 6th Avenue Parkway extension)

b) Construction Sequence

The proposed sequence for major activities should be described, including:

– An estimated project start
– An estimated project end date
– The sequence of major construction activities (Initial, interim, final or overlot grading, utilities, vertical, paving, over – excavation, etc.). This is expected to be a brief overview of the project as more detailed phasing information and specific BMPs will be addressed in later sections of the SWMP narrative report.

Estimated Project Start Date:	September 2018
Estimated Project Completion Date:	November 2018

Describe the major phases of construction:

Perimeter controls shall be installed prior to any construction beginning on the site. Grading activities will follow. Disturbed areas will be permanently stabilized with seeding.

i. Construction Activities are anticipated to start in September 2018 with initial BMPs installed. These include perimeter silt fence and any other items as shown on the initial erosion control plan as "INITIAL".

ii. A vehicle tracking control pad and stabilized staging area will be installed at the construction access point for the site.

iii. Grading will commence with BMPs shown on the FINAL erosion control plan. Seeding will be applied once grading is complete

c) Area

The areas for the site should be described including any grading phasing which will need all of the information by phase, as well as for the overall project. This also includes overlot grading in different phases to achieve the outcome of the project. This may be required to be modified by the contractor with a phasing plan submittal.

- Provide estimates of the total area of the site and the sub area within the site expected to undergo clearing, excavation or grading.
- Include an estimate of the excavation and fill volumes involved during the proposed construction.
- Include an estimate of how excavation and fill will be phased.
- Include an estimate of over-excavation areas and volumes (and type) and an estimate of offsite trucking volume (import and/or export).

Note: If exporting material to an area within the COA limits, the receiving site must have its own SWMP and may be required to have its own COA Stormwater Quality Discharge Permit. If the export site is outside of COA limits, then the requirements of that local jurisdiction must be met and proof of a valid permit for the site will be required.

Total project area:		15.17	acres	
Construction site area to be disturbed: (Includes stockpile area and utility connections offsite with minimal, short-term disturbance)		15.17	acres	
Construction site over excavation area to be disturbed:		0	acres	
Export/Import Volume				
Cut Volume		150,605	CY	
Fill Volume		13	CY	
Stockpile Volume		TBD	CY	

Net Volume		150,592 (CUT)	CY	
Foundation Excavation Volume		TBD	CY	

Description of phasing for sites disturbing more than 40 acres.:

N/A

d) Topography, Soils, and Rainfall Data

- Provide a summary describing the soil, the soil type, and hydrologic soil group, permeability, texture, soil erosion potential, depth, soil structure, etc. and potential impacts of the soil type on the quality of any stormwater discharge from the site.
- A description of the topography of the site, existing site conditions, drainage patterns, and existing site slopes should also be included.

Note: A soils map showing the site limits and excerpts regarding the soils information shall be placed in the SWMP narrative report appendices.

Soil type(s):

The soils onsite are described by the National Soil Survey as approximately 1% Bijou sandy loam, 0 to 3 percent slopes approximately 18% Bresser-Truckton sandy loam at 3% to 5% slopes, approximately 51% Nunn-Bresser-Ascalon complex with slopes 0%-3%, approximately 4% Sand pits, and approximately 26% Truckton loamy sand at 5 to 20% slopes. The soil is classified as type A hydrologic soil group for approximately 69% of the site and soil is classified as type B hydrologic soil group for approximately 31% of the site.

Description		**Result**		**Location of Occurrence**
Highest Elevation:		5552		Southern portion of the excavation site near the future 6th Avenue Parkway extension.
Lowest Elevation:		5524		Southwest Corner of the excavation site, adjacent to existing drainage channel that runs south of the site.
Steepest Slope:		2:1		Southwest Corner of the excavation site, adjacent to existing drainage channel that runs south of the site.
Average Slope:		10%		

Slopes (describe current slopes and note any changes due to grading or fill activities):

Slopes across the site vary from 1-10% but generally slope toward the northeast and northwest. The proposed improvements will generally follow this drainage pattern with average slopes throughout the site of 1.0%.

Drainage Patterns (describe current drainage patterns and note any changes dues to grading or fill activities):

The site generally drains to the northeast and northwest. The proposed improvements will generally follow this drainage pattern.

Normal Monthly Precipitation Table in Inches

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.51	0.49	1.28	1.93	2.32	1.56	2.16	1.82	1.14	0.99	0.98	0.63

Adapted from: http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html

Imperviousness and Runoff Coefficients:

- Calculate the percentage of impervious surface area before and after construction
- Calculate the runoff coefficients before and after construction.

Percentage impervious area before construction:		5	%
Runoff coefficient before construction (100 Yr):		0.10	
Percentage impervious area after construction:		5	%
Runoff coefficient after construction (100 Yr):		0.10	

e) Existing Vegetation

- Provide a description of the existing vegetation at the site and an estimate of the percent vegetative cover density prior to disturbance in an average square yard of the site. This requirement does not encompass hard surfaces or damaged areas. The consultant may have to evaluate vegetation from a nearby area if there has already been disturbance. There may also be drastically different vegetation in areas of the project or prairie dog issues, discuss as appropriate.
- A plan showing the existing major trees (4" diameter trunks and larger), tree masses, and shrub masses should be provided.

Existing Vegetation on the site:

The 15.17 acre area currently is primarily covered with native grasses, natural landscaping, and pasture land. This area includes the entire site proposed for excavation.

Pre-disturbance vegetation density:

20%

Discuss tree protections and removals (reference detail for protection):

Existing trees may exist at the southwest portion of the proposed excavation site. If these trees renain on this portion of the site they are to be removed.

f) Potential Sources of Pollution

- Identify and list the proposed location and description of any potential pollution sources anticipated to be used during the project, such as portable toilets, vehicle fueling, grout/cement mixers, storage of fertilizers, paints or chemicals and stockpiles, etc.
- Materials of concern may include, but are not limited to, raw materials, fuels, metallic products, hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), any chemical the facility is required to report pursuant to Section 313 of title III of the Superfund Amendments and Reauthorization Act (SARA), fertilizers, pesticides, ash, slag, sludge concrete washout, paints, solvents, and waste piles.

Note: This is expected to be a brief list with detailed information being addressed in later sections of the SWMP narrative report.

Potential pollutants and sources to stormwater runoff:

Trade Name, Material, or Operation	***Stormwater Pollutants***	***Potential Location***
Bedding Stockpiles	Sediment	Entire site
Demolition and Debris Disposal	Trash, Sediment, various other contaminants	Existing Building Areas
Dewatering and Ponded Water Management	Ground Water and Ponded Water containing various other pollutants	Entire site
Generators	Oil, Gasoline, etc	Entire site
Grading Operations (clearing, excavating, etc)	Sediment	Entire Site
Hazardous Wastes	Fire Retardant, Acid Wash, Graffiti Prevention Liquid, Processed Water	n/a
Material Delivery	Other Materials	Entire site

Trade Name, Material, or Operation	*Stormwater Pollutants*	*Potential Location*
Processed Water	Any number of chemicals or other toxins	Entire site
Sanitary Waste Management	Sanitary Waste	Staging Areas
Soil Stockpiling	Sediment	Entire site
Stabilized Staging/Haul Routes	Sediment, Fuel, Oil	Entire site
Trash	Debris, Bacteria, various chemicals, etc.	Staging Areas
Vehicle and Equipment Maintenance, Cleaning, or Leaks	Fuel, Oil, Grease, Chemicals, Hydraulic Oil	Entire site

g) Non Stormwater Discharges

Identify and list the location and description of any anticipated non-stormwater components of the discharge, such as springs (State permit required), potable water for dust suppression,

landscape irrigation return flow, pipeline dewatering (i.e. waterline flushing and testing) diverted stream flows, flows from wetlands, firefighting activities, hydrant blow-offs, building power-washing where detergents are not used, construction dewatering of groundwater (State permit required),uncontaminated air conditioning or compressor condensate, foundation or footing drains where flows are not contaminated with process materials such as solvents (State permit may be required), or other discharges specifically authorized by a separate National Pollutant Discharge Elimination Systems (NPDES) permit or a separate Colorado Discharge Permit System (CDPS) permit etc. Discharges are those flows that are allowed to leave the site.

- Identify all allowable sources of non-stormwater discharges that are not identified. The allowable non-stormwater discharges identified might include those in the table below.
- Identify measures used to eliminate or reduce these discharges and the BMPs used to prevent those discharges from becoming contaminated.

Check if Applicable to Site	List of Potential Non-Stormwater Discharges	Management of Discharge
☐	Waters used to wash vehicles where detergents are not used	
X	Water used to control dust	Shall be kept within disturbed area and treated by perimeter BMPs
	Potable water including uncontaminated water line flushings	
	Routine external building wash down that does not use detergents	
☐	Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used	
☐	Uncontaminated air conditioning or compressor condensate	
☐	Uncontaminated ground water or spring water	
☐	Foundation or footing drains where flows are not contaminated with process materials such as solvents	
☐	Uncontaminated excavation dewatering	
	Landscape irrigation	
	Potable water for firefighting activities	
☐	Diverted channels or streams	
☐	Flows from wetlands	
	Sanitary sewer/plumbing line testing	

Check if Applicable to Site	List of Potential Non-Stormwater Discharges	Management of Discharge
☐		

h) Receiving Waters

List the name of all potential receiving water (s) and the size, type and location of any outfall. If the discharge is to a municipal storm sewer system, then provide the name of that system, the location of the storm sewer discharge, and the ultimate receiving water(s). State whether or not there are wetlands, the 100-year floodplain status (i.e. if the site is within a floodway, near a flood plain or not within a flood zone), if the receiving water is impaired or not, and if there are any stream crossings proposed.

Note: Floodplain maps shall be provided in the SWMP narrative report appendices and shall show the site in relation to the floodplain.

- List the waterbody(s) that would receive stormwater from your site, including streams, rivers, lakes, and wetlands. Describe each as clearly as possible, such as *Murphy Creek, a tributary to the Sand Creek*, and so on. Indicate the location of all waters, including wetlands, on the site map.
- Note any stream crossings or stream diversions, if applicable.
- List the downstream storm inlets, storm sewer system or drainage system that stormwater from your site could discharge to and the waterbody(s) that it ultimately discharges to. It is preferred that the waterbodies are listed to a reservoir, Sand Creek, Cherry Creek or the South Platte.
- If any of the waterbodies above are impaired and/or subject to Total Maximum Daily Loads (TMDLs), please list the pollutants causing the impairment and any specific requirements in the TMDL(s) that are applicable to construction sites. Your SWMP should specifically include measures to prevent the discharge of these pollutants.

The site is within the Cherry Creek Drainage Basin: ☐ Yes ☒ No

The site is within the Aurora Reservoir Drainage Basin: ☐ Yes ☒ No

Description of receiving waters:

- The site has been graded to convey stormwater to proposed on-site diversion ditches. Flows will be conveyed via diversion ditches to proposed riprap for sediment control before leaving the site. The proposed diversion ditch conveys flows to the Alicia Way stream, which is tributary to Coal Creek, which lies further to the southwest of the proposed escavation site.

Description of storm inlets and storm sewer systems:

- N/A

Description of impaired waters or waters subject to TMDLs:

N/A

100- Year Floodplain Status:

- The site is currently not mapped by a FEMA Flood Insurance Rate Map and is outside of the 100-year floodplain hazard zone.

Description of wetlands:

N/A

Other: N/A

i) Site Features and Sensitive Areas to be Protected

- Describe unique site features including streams, stream buffers, wetlands, specimen trees, natural vegetation, steep slopes, or highly erodible soils that are to be preserved.
- Describe measures to protect these features.
- Include these features and areas on your SWMP design drawings.

N/A

j) Other Applicable Federal, State or Local Programs, Regulations or Restrictions

State any other regulations that are affecting the site (i.e. **State CDPHE**, Regulation 72, Consent Decrees, etc).

CDPHE and EPA

1) Endangered Species Certification

State whether or not there are any endangered species or critical habitats on or near the site. If so, then describe the impacts and the measures being taken to address that impact and supply documentation in the SWMP narrative report appendices.

Are endangered or threatened species and critical habitats on or near the project area?

☐ Yes ☒ No

If yes, describe the species and/or critical habitat and provide reference to other documents as appropriate:

N/A

2) Historic Preservation

State whether or not there are any historic sites on or near the site. If so, then describe the impacts and the BMP measures being taken to address that impact

Are there any historic sites on or near the construction site?

☐ Yes ☒ No

If yes, describe or refer to documentation that determines the likelihood of an impact on this historic site and the steps taken to address that impact.

N/A

SECTION 2 DESIGN DRAWINGS

Approved design drawings shall be kept with the approved narrative report (this document) in the field and must be kept current. See COA Rules and Regs Chapter 3 for more information regarding Living Documents. For most projects, a series of site maps is recommended. The first should show the undeveloped site and its current features. An additional map or maps should be created to show the developed site or for more complicated sites show the major phases of development.

- SWMP design drawings are required to indicate the types, locations, and extents of BMPs proposed for installation on the project site.

- For more information and requirements, see *Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities, current revision* (also known as the *Rules and Regs*), Chapter 2

SECTION 3 STORMWATER MANAGEMENT CONTROLS

This section shall describe the stormwater management controls that will be used to control pollutants in stormwater discharge during construction activity.

a) SWMP Administrator and Important Contacts

- List Contact names and phone numbers for the SWMP Administrator, alternates, owner, developer, etc that are known
- Copy as needed

Owner/Operator(s):
Aurora One
6003 Tuscany Village
Amarillo, TX
Tommy Stafford

Project Manager(s) or Site Supervisor(s): TBD
Company or Organization Name:
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of Control (if more than 1 operator at site):

SWMP Administrator Contact(s): TBD
Company or Organization Name:

Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of Control (if more than 1 operator at site):

This SWMP was Prepared by (the Colorado Licensed Engineer):
Ware Malcomb
Greg Blount
990 S. Broadway, Suite 230
Denver, CO 80209
303-561-3333
gblount@waremalcomb.com

Emergency 24-Hour Contact (for site, not 911): TBD
Company or Organization Name:
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of Control (if more than 1 operator at site):

Subcontractor(s): TBD
Company or Organization Name:
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of Control (if more than 1 operator at site):

Other:
Company or Organization Name:
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:
Area of Control (if more than 1 operator at site):

Other:
Company or Organization Name:
Name:
Address:
City, State, Zip Code:
Telephone Number:
Fax/Email:

Area of Control (if more than 1 operator at site):

b) Identification of Potential Pollutant Sources

All potential pollutant sources, including materials and activities, at a site must be evaluated for the potential to contribute pollutants to stormwater discharges.

- Identify and describe the sources of potential pollutants to stormwater discharges. At a minimum, each of the following sources and activities shall be evaluated for the potential to contribute pollutants to stormwater discharges.
- Numbers in [] brackets indicate the appropriate section to describe the BMPs to be used to address the potential pollutant source

Applicable to Site (Y, N, Maybe)	Sources of Potential Pollutants to Stormwater Discharges
Y	All disturbed and stored soils (including borrow areas, stockpiles, haul routes, and over-excavation) [Section 3 c) 1, 2, and 3]
Y	Vehicle tracking controls and clean up [Section 3 c) 6]
N	Management of contaminated soils [Section 3 c) 4]
Y	Loading and unloading operations (including access points and protection of existing BMPs) [Section 3 c) 10]
M	Outdoor storage areas (building materials, fertilizers, chemicals, etc.) [Section 3 c) 4]

Applicable to Site (Y, N, Maybe)	Sources of Potential Pollutants to Stormwater Discharges
M	Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. [Section 3 c) 4]
Y	On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.) [Section 3 c) 7]
N	Concrete truck/equipment washing, including the concrete truck chute, pump truck primary and associated fixtures and equipment [Section 3 c) 7]
N	Dedicated asphalt and concrete batch plants [Section 3 c) 5]
Y	Non-industrial waste sources such as worker trash and portable toilets [Section 3 c)7]

Applicable to Site (Y, N, Maybe)	Sources of Potential Pollutants to Stormwater Discharges
Y	Vehicle and equipment maintenance and fueling [Section 3 c) 4]
Y	Significant dust or particulate generating processes (including haul routes, masonry mixing, and silos) [Section 3 c) 2]
N	Power washing of building using detergents or other chemicals/solvents [Section 3 c) 4]
N	Building/vertical construction (including paints, solvents, drywall, fire retardant, etc) [Section 3 c) 4, 7, 10]

Applicable to Site (Y, N, Maybe)	Sources of Potential Pollutants to Stormwater Discharges
M	Other areas or procedures where potential spills can occur [Section 3 c) 4]
M	Stormwater or groundwater dewatering [Section 3 c) 9]

c) BMPs for Stormwater Pollution Prevention

This section of the SWMP narrative report shall include a narrative description of the appropriate controls and measures that will be implemented before, during and after construction activities at the project site to manage and control the runoff of pollutants.

The SWMP narrative report shall clearly describe the relationship between the phases of construction, and the implementation and maintenance of BMP controls and measures. For example, the report must indicate which controls will be implemented during each of the following phases of construction: clearing and grubbing for perimeter controls, installation of initial BMPs, clearing and grubbing, overlot grading, installation of interim BMPs, site construction, utility construction, vertical construction, other pertinent construction phases, final grading, stabilization, removal of BMPs, and Permit closeout.

1) Structural Practices

– Clearly describe the initial/interim, post-paving, and permanent structural site management practices to control erosion and sediment transport. Practices may include, but are not limited to: silt fences, diversion dikes, temporary slope drains, inlet protection, outlet protection, check dams, curb/rock socks, sediment control logs, compacted earthen berm, and terracing.

BMP Description: Silt Fence (SF)	
Intended Use/Purpose:	Prevent sediment laden runoff from exiting the site
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Final Stabilization

BMP Description: Stock Pile Area (SP)	
Intended Use/Purpose:	Prevent sediment laden runoff from exiting the site
Appropriate Installation Timing:	As needed for foundation excavation
Appropriate Removal Timing:	Prior to final stabilization

BMP Description: Rock Socks (RS)	
Intended Use/Purpose:	Prevent sediment and debris from leaving the site
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Final Stabilization

BMP Description: Curb Socks (CS)	
Intended Use/Purpose:	Prevent sediment and debris from entering public roadway
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Final Stabilization

BMP Description: Diversion Ditch (DD)	
Intended Use/Purpose:	Convey runoff during construction to the proposed sediment ponds.
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Final Stabilization

2) Non-Structural Practices

– Clearly describe initial/interim, post-paving, and permanent stabilization practices, including site specific scheduling of the implementation of these practices. Site plans should ensure that existing vegetation is preserved where possible and that all disturbed areas are stabilized. Non-structural practices may include, but are not limited to: temporary seeding, mulching, temporary sod stabilization, vegetative buffer strips, temporary landscaping, temporary erosion control blankets/matting, temporary soil retention matting, surface roughening, dust suppression, seasonal schedule, and preservation of mature vegetation.

BMP Description: Preventative Maintenance of Equipment and BMP's	
Intended Use/Purpose:	Insurance of BMP performance as intended
Appropriate Installation Timing:	Prior to Closeout – Every 7 calendar days and within 24 hours of precipitation event After Closeout – Every 30 days and within 24 hours of precipitation event
Appropriate Removal Timing:	

BMP Description: Clean Up Schedules	
Intended Use/Purpose:	Insurance of clean and orderly site
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	

BMP Description: Training of Site Personnel	
Intended Use/Purpose:	Awareness of BMPs and proper procedures
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	

BMP Description: Seasonal Scheduling	
Intended Use/Purpose:	Allow consideration for inclement weather conditions
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	

3) Phase Construction Activity and BMP Implementation

This section shall describe the relationship between the phases of construction, and the implementation and maintenance of BMP controls and measures. For example, indicate which controls will be implemented during each of the following phases of construction:

prior to clearing and grubbing for perimeter controls (installation of initial BMPs), clearing and grubbing, overlot grading, installation of interim BMPs, site construction, utility construction, vertical construction, other pertinent construction phases, final grading, stabilization, removal of BMPs, and Permit closeout.

- Clearly describe the various phases of construction and the implementation of BMPs to be used during each phase. Examples of project phases may include, but are not limited to, demolition, clearing and grubbing, overlot grading, over-excavation, road construction, utility installations, vertical construction, fine grading, and final stabilization. The description for a particular phase may have sub-phases. For example, the overlot grading of an 80 acre site may have to describe multiple sub-phases for the 40 acre disturbance limitation. Another example would be vertical construction phase may describe sub-phases of the construction such as grading, foundations, framing, finishing, and stabilization. For more information, see *Rules and Regs*, Chapter 2, Section 2.2.1)

Note: Some construction information may need to be added once a contractor(s) are involved. See the Manual and below for more information.

Phase Description: Clearing and Grubbing	
Duration of phase (start/end dates):	11/18-12/28
BMPs Associated with the Phase:	VTC, SSA, SF, RS, CS, Street sweeping,
Describe Temp/Final Stabilization for Phase:	

Phase Description: Overlot Grading	
Duration of phase (start/end dates):	12/18-02/19
BMPs Associated with the Phase:	VTC, SSA, SF, RS, CS, Street sweeping,
Describe Temp/Final Stabilization for Phase:	

Phase Description: Utility Installations	
Duration of phase (start/end dates):	02/19 – 05/19
BMPs Associated with the Phase:	IPS, VTC, SSA, SF, RS, TSB, CS, Street sweeping,
Describe Temp/Final Stabilization for Phase:	Satisfactory performance of inlet protection.

Phase Description: Fine Grading	
Duration of phase (start/end dates):	05/19 – 10/19
BMPs Associated with the Phase:	IPS, VTC, SSA, SF, RS, Street sweeping,
Describe Temp/Final Stabilization for Phase:	Surface roughening and mulching

Phase Description: Final Stabilization	
Duration of phase (start/end dates):	09/19 – 10/19

BMPs Associated with the Phase:	Permanent landscaping, street sweeping
Describe Temp/Final Stabilization for Phase:	Pavement of proposed impervious areas and acceptable vegetation of landscaped areas

a. **Overlot Grading Specific Practices**

Overlot grading specific practices should address items such as: surface roughening, blanketing, terracing, mulching, temporary seeding, permanent seeding, temporary sediment pond construction and removal, phasing, haul routes, disturbance limits, rough cut street controls, etc.

- Address haul routes may be designated on the SWMP updates and shall take into consideration drainage, erosion and sediment control BMPs, along with interim stabilization measures.

BMP Description: Surface Roughening (SR)	
Intended Use/Purpose:	Stabilize surface and prevent erosion from surface runoff
Appropriate Installation Timing:	During initial grading operations
Appropriate Removal Timing:	Final grading and pavement

BMP Description: Erosion Control Blanket (ECB)	
Intended Use/Purpose:	Stabilize areas with high velocity runoff and/or steep grade.
Appropriate Installation Timing:	During initial Grading Operations
Appropriate Removal Timing:	Once final stabilization/ vegitation is achieved.

BMP Description: Seeding and Mulching (SM)	
Intended Use/Purpose:	Stabilize areas that will be inactive for long periods of time.
Appropriate Installation Timing:	Throughout life of project
Appropriate Removal Timing:	Once final stabilization is achieved.

- Discuss interim stabilization may be provided via plan amendment by the contractor and the engineer at the Erosion Control Kick Off meeting. These measures shall be provided with timeframes and down gradient controls.

Temporary drainage BMPs (diversion ditches, sediment traps or sediment basins) shall be maintained at all times.

- Discuss timing and procedural requirements for implementation, maintenance and removal of these items during this period of construction.

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b. Vertical and General Construction Requirements – See Appendix for Table of Required Information

- Staging areas change during construction regularly. Therefore, if "con/conex" boxes are to be utilized and if they are to include liquid pollutants, then a redundant BMP measure must be provided
- Site drainage will need to be maintained during vertical construction. Review conditions to ensure that it will continue to work as shown during the grading/utility timeframes.
- Provide redundant BMPs for generators and mobile concrete washouts to protect from fuel/hydraulic leaks
- Continuously review the down gradient BMPs within the impervious and disturbed areas to ensure that conveyances, inlets and outlets are protected appropriately during this phase.
- Areas of disturbance outside of the building envelope shall still require BMPs.
- Continuously review the timing/phasing of the project to ensure the appropriate BMPs are implemented as construction continues. Deletion of BMPs shall require different measures to be implemented upon deletion.
- BMPs for keeping impervious surfaces clean may need to be enhanced or added to as construction continues.
- Review and implement BMP measures to control roof drainage. This becomes a point source and may cause extensive erosion on site.

Optional Section – To be included if the items in bullet points cannot be addressed elsewhere in this report.

A Plan Amendment from the contractor shall be required to be submitted to the engineer of record and City of Aurora Water Engineering Plans Reviewer three (3) business days prior to the Erosion

Control Kick-Off Meeting. This submittal shall provide narrative information and the associated details required for vertical construction BMPs (structural and non-structural) that will be implemented during this phase of construction.

- Stream Diversion Method

4) Material Handling and Spill Prevention

This section shall describe any procedures and locations for all practices implemented at the site that will be used to minimize impacts from identified potential pollutant sources. BMPs need to address many different pollutant sources that include, but are not limited to exposed storage of construction materials, liquid contaminants, contaminated soils management, fueling procedures, redundant measures for any spill or leak sources, and equipment maintenance procedures. Activities involving potential for spills shall have spill prevention and spill response procedures identified.

– Identify and describe how the sources of potential pollutants to stormwater discharges identified in Section 3.2 will be controlled through BMP selection and implementation. The information provided may address frequency, seasonal considerations, characteristics of the area and surface type, primary and secondary containment, proximity to drainageways and stormwater facilities.

BMP Description: Preventative Maintenance of Equipment and BMP's	
Intended Use/Purpose:	Insurance of BMP performance as intended
Appropriate Installation Timing:	Prior to Closeout – Every 7 calendar days and within 24 hours of precipitation event After Closeout – Every 30 days and within 24 hours of precipitation event
Appropriate Removal Timing:	Once site has achieved permanent stabilization

BMP Description: Clean Up Schedules	
Intended Use/Purpose:	Insurance of clean and orderly site
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Following construction activities

BMP Description: Material Storage and Inventory	
Intended Use/Purpose:	Prevention of spills and insurance of proper spill cleanup
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Following construction activities

BMP Description: Utilizing Redundant Measures	
Intended Use/Purpose:	Prevention of spilling or tracking of sediment due to BMP failure
Appropriate Installation Timing:	Initial and Post-Pavement BMP placement
Appropriate Removal Timing:	Final Stabilization

BMP Description: Spill Kits	
Locations	At Stabilized Staging Area
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Following construction activities

BMP Description: **SPILL RESPONSE -Cleanup and Removal Procedures**

NOTE: IN CASE OF FIRE, EVACUATE ALL PERSONNEL FROM THE IMMEDIATE AREA, RENDER FIRST AID TO ANYONE WHO IS INJURED, AND DIAL 911 IMMEDIATELY. TAKE APPROPRIATE STEPS TO PROTECT HUMAN LIFE AND TO CONTROL FIRES FIRST. SPILL CONTROL IS SECONDARY.

- Upon detection of any spill, the first action to be taken is to ensure personal safety. All possible ignition sources, including running engines, electrical equipment (including cellular telephones, etc.), or other hazards will be immediately turned off or removed from the area. The extent of the spill and the nature of the spilled material will be evaluated to determine if remedial actions could result in any health hazards, escalation of the spill, or further damage that would intensify the problem. If such

conditions exist, a designated employee will oversee the area of the spill and the construction SWMP Administrator will be notified immediately.

- The source of the spill will be identified and if possible the flow of pollutants stopped if it can be done safely. However, no one should attend to the source or begin cleanup of the spill until **ALL** emergency priorities (fire, injuries, etc.) have been addressed.

Small Spills

Small spills (usually <5 gallons) consist of minor quantities of gasoline, oil, anti-freeze, or other materials that can be cleaned up by a single employee using readily available materials.

The following procedures should be used for clean-up of small spills:

a. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.

b. Contain the spread of the spill using absorbents, portable berms, sandbags, or other available measures.

c. Spread absorbent materials on the area to soak up as much of the liquid as possible and to prevent infiltration into the soil.

d. Once the liquids have been absorbed, remove all absorbents from the spill and place the materials in a suitable storage container. On paved areas, wipe any remaining liquids from the surface and place the materials in a storage container. Do not spray or wash down the area using water. For open soil areas, excavate any contaminated soil as soon as possible and place the soil in a suitable storage container. All materials will then be transported off-site for disposal.

e. If immediate transfer and storage of the contaminated soil is not practical, excavate and place the contaminated soil on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm should be formed around the outer edges of the soil stockpile, underneath the polyethylene film, to ensure that contaminants are not washed from the site during precipitation events and that materials do not seep through the berm.

f. Record all significant facts and information about the spill, including the following:

    - Type of pollutant
    - Location
    - Apparent source
    - Estimated volume
    - Time of discovery
    - Actions taken to clean up spill

g. Notify the SWMP Administrator of the spill and provide the information from Item **f**. The SWMP Administrator will then contact the City of Aurora Erosion Control Staff.

Medium to Large Spills

Medium to large spills consist of larger quantities of materials (usually >5 – 25 gallons) that are used on site that cannot be controlled by a single employee. Generally, a number of facility personnel will be needed to control the spill and a response may require the suspension of other facility activities.

The following procedure shall be used for the cleanup of medium to large spills:

a. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.

b. Immediately dispatch a front-end loader or similar equipment to the spill and construct a berm or berms down gradient of the spill to minimize the spread of potential pollutants. On paved surfaces, portable berms, sandbags, booms, or other measures will be used to control the lateral spread of the pollutants.

c. When the spread of the spill has been laterally contained, contact the SWMP Administrator or designated facility employee and provide them information on the location, type, and amount of spilled material, and a briefing on the extent of the spread and measures undertaken to contain the contaminants.

d. Depending on the nature of the spill, mobilize additional resources as needed to contain the contaminants.

e. Cleanup will commence when the lateral spread has been contained and the notification to the SWMP Administrator has been made.

f. Freestanding liquid will be bailed or pumped into 55-gallon storage drums, steel tanks, or other suitable storage containers. When all the liquid has been removed from the pavement or soil layer, absorbents will be applied to the surface and transferred to the storage containers when they have soaked up as much of the spill as possible.

g. On paved surfaces, the remaining contaminants will be removed to the extent possible, with rags, sweeping, or similar measures. <u>The area of the spill will not be sprayed or washed down using water</u>. Any contaminant soaked materials will be placed into the storage containers with the other absorbents.

h. The remaining contaminated soils will be excavated and loaded into a dump truck(s) for disposal off-site at a designated facility. If transport off-site is not immediately available, the remaining soils will be stockpiled on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm will be formed around the outer edges of the soil stockpile, underneath the polyethylene film, to ensure that contaminants are not washed from the site during precipitation and do not seep through the berm.

i. Record all significant facts and information about the spill, including the following:

- Type of pollutant
- Location
- Apparent source
- Estimated volume
- Time of discovery

- Actions taken to clean up spill

j. Provide the SWMP Administrator (or designated employee) with the information from Item **i**. The SWMP Administrator will then contact the City of Aurora Flow Control Center.

NOTIFICATION

Notification to the Colorado Department of Public Health & Environment (CDPHE) and the City of Aurora is required if there is any release or suspected release of any substance, including oil or other substances that spill into or threaten State waters. Unless otherwise noted, notifications are to be made by the SWMP Administrator and only after emergency responses related to the release have been implemented. This will prevent misinformation and assures that notifications are properly conducted.

The notification requirements are as follows:

1. **Spills into/or Threatens State Waters**: Immediate notification is required for releases that occur beneath the surface of the land or impact or threaten waters of the State of threaten the public health and welfare. Notifications that will be made are:

    a. For any substance, regardless of quantity, contact CDPHE at 1-877-518-5608. State as follows:
        a) Give your name.
        b) Give location of spill (name of city).
        c) Describe the nature of the spill, type of products, and estimate size of spill.
        d) Describe type of action taken thus far, type of assistance or equipment needed.

    b. For any quantity of oil or other fluids, call the National Response Center at 1-800-424-8802. State as follows:
        a) Give your name.
        b) Give location of spill (name of city and state).
        c) Describe the nature of the spill, type of product, and estimate size of spill.
        d) Describe type of action taken thus far, type of assistance or equipment needed.

2. **Reportable Quantity Spill on Land Surface**: Immediate notification is required of a release upon the land surface of an oil in quantity that exceeds 25 gallons, or of a hazardous substance that equals or exceeds 10 pounds or its reportable quantity under Section 101(14) of the Comprehensive Environmental Response, Compensation Liability Act (CERCLA) of 1980 as amended (40 CFR Part 302) and Section 329 (3) of the Emergency Planning and Community Right to Know Act of 1986 (40 CFR Part 355) whichever is less. This requirement does apply at a minimum to the substances listed in Table A below.

TABLE A

Substances Requiring Notification

SUBSTANCE	REPORTABLE QUANTITY

Motor Oil	25 Gallons
Hydraulic Oil	25 Gallons
Gasoline/Diesel Fuel	25 Gallons

The notification procedures to be followed are:

a) Give your name.
b) Give location of spill (name of city and state).
c) Describe nature of the spill, type of product, and estimate size of spill.
d) Describe type of action taken thus far, type of assistance or equipment needed.

3. Notification is not required for release of oil upon the land surface of 25 gallons or less that will not constitute a threat to public health and welfare, the environmental or a threat of entering the waters of the State.

4. Notification, as required in paragraphs 1 and 2 above, will be made to the CDPHE using the 24-hour telephone number to report environmental spills. All information known about the release at the time of discovery is to be included, such as the time of occurrence, quantity and type of material, location and any corrective or clean-up actions presently being taken. Table B lists these phone numbers.

SPILL RESPONSE CONTACTS

TABLE B

Emergency Notification Contacts

Name/Agency	Number
City of Aurora Fire Department	911
City of Aurora Police Department	911
Ambulance	911
Hospital	911
National Response Center	1-800-424-8802
CDPHE – Report Environmental Spills (24 hrs/day)	1-877-518-5608
City of Aurora – Water Dept Erosion Control Staff	303-326-8645
Colorado Emergency Planning Committee	303-273-1622
Also contact SWMP Administrator and Owner	See Section 3 a) of this report

It is the responsibility of the SWMP Administrator to contact the City of Aurora, CDPHE, and/or the National Response Center.

- **The National Response Center** is to be contacted when a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 4- DFR 117, or 40 CFR 302 occurs during a 24-hour period.

- Notification to the **CDPHE** and **COA** is required if there is any release or suspected release of any material, including oil or hazardous substances that spill into or threaten state waters.

REPORTS

The CDPHE and COA require written notification of a spill or discharge of oil or other substance that may cause pollution of the waters of the State of Colorado. A written report must be submitted to the Water Quality Control District (WQCD) and the COA Erosion Control Staff within five days after becoming aware of the spill or discharge.

The CDPHE and COA require a written final report within 15 days for all releases of an oil or hazardous substance that require implementation of a contingency plan. The CDPHE and COA may also require additional reports on the status of the clean up until any required remedial action has been complete.

Written notification of reports must contain at a minimum:

1. Date, time, and duration of the release.
2. Location of the release.
3. Person or persons causing and responsible for the release.
4. Type and amount of oil or substance released.
5. Cause of the release.
6. Environmental damage caused by the release.
7. Actions taken to respond, contain, and clean up the release.
8. Location and method of ultimate disposal of the oil or other fluids.
9. Actions taken to prevent a reoccurrence of the release.
10. Any known or anticipated acute or chronic health risks associated with the release.
11. When appropriate advice regarding medical attention necessary for exposed individuals.

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5) Dedicated Concrete or Asphalt Batch Plants

– Describe measures to control stormwater pollution from dedicated concrete batch plants or dedicated asphalt batch plants covered by the SWMP.

6) Vehicle Tracking Control

– Describe all practices implemented at the site to control potential sediment discharges from vehicle tracking. Practices must be implemented for all areas of potential vehicle tracking, and can include: minimizing site access; street sweeping or scraping; tracking pads; stabilized staging and parking areas; requiring that vehicles stay on paved areas on-site; wash racks; contractor education; and/or sediment control BMPs, etc

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BMP Description: **Mandatory sweeping of all internal and adjacent external paved areas is required on a weekly basis at a minimum. This applies until Initial Close-Out acceptance. At that time it will be on an as needed basis.**

BMP Description: Vehicle Tracking Control (VTC)	
Location(s):	East and North entrances to the site
Intended Use/Purpose:	Prevent sediment and debris from entering public roadway
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Prior to final stabilization

BMP Description: Designated Access Points	
Location(s):	East and North entrances to site at VTC
Intended Use/Purpose:	Prevent tracking of sediment and debris from construction traffic
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Final Inspection and Project Closeout

BMP Description: Stabilized Staging Area (SSA)	
Intended Use/Purpose:	Prevent sediment laden runoff from exiting the site
Appropriate Installation Timing:	Initial BMP Placement
Appropriate Removal Timing:	Immediately before final Stabilization

BMP Description: Street Sweeping	
Intended Use/Purpose:	Remove sediment and debris from public road
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Final Inspection and Project Closeout

BMP Description: Designated Access Points	
Intended Use/Purpose:	Prevent tracking of sediment and debris from construction traffic
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Final Inspection and Project Closeout

7) Waste Management and Disposal, Including Concrete Washout

– Clearly describe the practices implemented at the site to control stormwater pollution from all construction site wastes (liquid and solid), including concrete washout activities and liquid waste washouts, dumpsters, worker trash, and portable toilets.

BMP Description: Portable Toilet Protection	
Locations	All on-site portable toilets
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Following vertical construction

BMP Description: Trash Cans/Dumpsters	
Locations	On site
Appropriate Installation Timing:	Throughout construction activities
Appropriate Removal Timing:	Following vertical construction

8) BMP Specifications

BMP Details for installation and maintenance shall be the City of Aurora Standard Details in Appendix D of the (*City of Aurora* Rules and Regulations Regarding Stormwater Discharge Associated with Construction Activites (Rules and Regs)), latest revision, an approved variance, or an approved plan amendment. All approved variances must be documented in the SWMP. It is understood that not all details in the COA Rules and Regs will be used on this project site, but that all details are available for implementation if unforeseen circumstances warrant their use. Proper procedures must be used to update the living document and get approval as documented in the COA Rules and Regs. All physical BMPs require a detail to show installation and maintenance information. If a detail is not available through the manufacturer, then one must be created by the preparer of this SWMP narrative report.

9) Groundwater and Stormwater Dewatering

– The SWMP shall clearly describe the practices to be implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater from excavations, wells, etc.

– For any construction dewatering of stormwater from construction areas, describe the BMPs to be used to control additional erosion and transport of sediment.

Note: This City of Aurora Stormwater permit does not authorize dewatering of groundwater. A separate State permit is required for this activity.

BMP Description: Dewatering Operations	
Intended Use/Purpose:	Pumping water from an inundated area to a BMP downstream
Appropriate Installation Timing:	As needed
Appropriate Removal Timing:	Final Stabilization

10) Developer/Builder Specific Practices

Include a description of standard practices of the company for whom this SWMP is being developed. At a minimum it shall include:

- Standard practices for construction operations during wet weather conditions and winter weather conditions
- Methods used to obtain compliance from sub-contractors (i.e. fines, education, etc)
- Stormwater education policies for educating personnel and subcontractors
- Company Standard Operating Procedures as they relate to stormwater management (as appropriate)
- Describe any standard construction practices that will be used on the site such as material loading and unloading practices, lot controls, lot access etc.

Note: Any practices requiring a variance that are discussed here must reference the variance section, and must be requested in the variance section, or they will be considered unapproved and not allowed.

BMP Description: Wet Weather Conditions	
Intended Use/Purpose:	Access to and from the site during wet weather conditions
Appropriate Installation Timing and Description:	Access will be limited during wet weather conditions and ceased if SWMP controls cannot be maintained
Appropriate Removal Timing:	N/A

BMP Description: Stormwater education policies	
Intended Use/Purpose:	Ensure proper BMP installation and maintenance
Appropriate Installation Timing and Description:	Inspection firm shall educate general contractor's staff as necessary for SWMP compliance throughout the duration of the project.
Appropriate Removal Timing:	N/A

BMP Description: Company standard operating procedures	
Intended Use/Purpose:	Ensure proper BMP installation and maintenance
Appropriate Installation Timing and Description:	Install wheel wash facility at construction entrance/exit, if required
Appropriate Removal Timing:	Prior to final stabilization

BMP Description: Standard Construction Practices	
Intended Use/Purpose:	Ensure proper BMP installation and maintenance
Appropriate Installation Timing and Description:	-Construction access to the site shall be in a specified location. -Contractual requirements for the general contractor to maintain and inspect erosion control measures for the duration of the project, including cleaning of any project related dirt from the adjacent roadway. -Owner shall be copied on general contractor's inspection reports, to monitor compliance. -Owner reserves right to fix deficient SWMP controls and to back-charge general contractor.
Appropriate Removal Timing:	Prior to final stabilization

BMP Description: Methods to obtain compliance from subcontractors	
Intended Use/Purpose:	Ensure proper BMP installation and maintenance
Appropriate Installation Timing and Description:	-Inspection firm shall educate general contractor's staff as necessary for SWMP compliance throughout the duration of the project. -General contractor will require subcontractors to comply with project SWMP throughout the duration of the project.
Appropriate Removal Timing:	N/A

SECTION 4 FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT

a) Final Stabilization Measures

Include a description of the proposed measures to be used to achieve final stabilization and long-term stormwater control. Revegetation with seeding and mulching, revegetation with seeding with erosion control blankets, landscaping, green roofs, permeable paving, permanent water quality ponds and permanent outlet protection are examples of final stabilization measures.

b) Seed Mix Information

Provide the name of the City of Aurora standard seed mix(es) that may be appropriate for the site and the soils anticipated for the site and the preferred method(s) for protecting the seed. If the site is not using a COA standard seed mix, then a variance request must be submitted and the preferred seed mix must be provided with the application rates.

c) Final Stabilization Notes

See Chapter 5 of the Rules and Regulations for more information.

1) *Final stabilization is reached when all soil disturbing activities at the site have been completed, and uniform vegetative cover has been established with a density of at least 70% of pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed.*

2) *Vegetative coverage density does not apply to paved areas, walks, buildings, or other hard surface impermeable areas.*

3) *Establishment of a vegetative cover capable of providing the erosion control equivalent to pre-existing conditions at the site can be considered final stabilization (i.e. landscape rocks, mulch, shrubs, etc). This determination will be made by the City of Aurora Water Department Erosion Control Program Staff prior to the close-out of the permit.*

SECTION 5 INSPECTIONS AND MAINTENANCE

This section shall describe procedures to inspect and maintain, in good effective operating condition, the vegetation, erosion, and sediment control measures and all other protective measures identified in the plan.

The following are the required frequencies of inspections:

i. *Prior to Initial Closeout Acceptance*: Permittee shall self-inspect the site at least every 7 calendar days and within 24-hours after the end of any precipitation event or snowmelt event that results in runoff and causes surface erosion, except as allowed in Item iii below.

ii. *Following Initial Closeout Acceptance and until permit closeout*: Permittee shall self-inspect the site at least every 30 calendar days, and within 24-hours after the end of any precipitation event or snowmelt event that results in runoff and causes surface erosion

iii. *Post-Precipitation Event Inspections for Temporarily Idle Sites:* If a site is temporarily idle and no construction activities will occur during the 48 hours following a storm event, the post-precipitation event (including snowmelt) inspection shall be conducted prior to commencing construction activities on the site, but no later than 72 hours following the storm event.

– Describe all other procedures necessary to inspect and maintain all BMPs on this site.

Note: Do not duplicate information that is provided in the COA Standard Details for Maintenance and Inspection.

BMP Description: Preventative Maintenance of Equipment and BMP's	
Intended Use/Purpose:	Insurance of BMP performance as intended
Appropriate Installation Timing:	Prior to Closeout – Every 7 calendar days and within 24 hours of precipitation event After Closeout – Every 30 days and within 24 hours of precipitation event
Appropriate Removal Timing:	Once site has achieved permanent stabilization

SECTION 6 PROBABLE COST FOR INSTALLATION OF BMPs

The standardized probable cost form shall include costs for required maintenance during the construction phase and shall establish the required Fiscal Security amount.

Notes: *City of Aurora projects do not require Fiscal Security, unless otherwise required. The Forms should be located in the Appendix of this SWMP narrative report.*

– List the total cost and the Fiscal Security amount, which is equal to the 25% Maintenance Cost amount of the higher of the two forms.

Initial BMP Total Cost:	$	0
Initial BMP Maintenance Cost:	$	0
Post-Paving BMP Total Cost:	$	0
Post-Paving BMP Maintenance Cost:	$	0
Fiscal Security amount:	$	0

SECTION 7 CALCULATIONS MADE FOR THE DESIGN

Include calculations made in the design of the SWMP, including calculations for sizing of sediment basins, design of erosion control matting, soil retention matting, sediment traps, diversion ditches, temporary stream crossings, weir sizing, or sizing of outlet protection riprap in the appendix with a summary of the results below.

– Address any required additional information below.

No designed features are planned for this site.

SECTION 8 VARIANCE REQUESTS

As may be reasonably required by COA, additional information shall be included here. A listing of variances requested and/or requests for special consideration of innovative BMPs should be provided along with their justification.

Any variance from COA *Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities* shall be approved by the City of Aurora. If it is not specifically listed within this section of the narrative, then it shall not be considered an approved variance. There are provisions for Variance requests once construction has begun. See Chapter 3 Section 3.3.3 of the Rules and Regulations. In such cases the City of Aurora approved variance shall be added to the field maintained SWMP.

Note: Manufacturer documentation and specifications for requested variances shall be provided in the appendices. If no detail is provided for a physical BMP, the request for variance will automatically be denied.

– List all Variances being requested

Variance Description: N/A	
Intended Use/Purpose:	
Reason for Variance:	
Maintenance Requirements:	
Appropriate Installation Timing:	
Appropriate Removal Timing:	

REFERENCES

References should include the drainage report, the COA Rules and Regs, and the CDPHE permit at a minimum. Other relevant references may be included.

Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities, current revision

Colorado Department of Public Health and Environment CDPS General Permit – Stormwater Discharges Associated with Construction Activity, current revision to expire June 30, 2012.

Federal Emergency Management Agency (FEMA) – Flood Insurance Rate Map number 0800460117H. Revised 17 Dec 2010.

Natural Resources Conservation Service (NRCS) – Web Soil Survey for Adams County, Colorado. Accessed at NRCS.org on 20 July, 2018.

SWMP APPENDIX A – Floodplain Information

SWMP APPENDIX B – Soils Information

SWMP APPENDIX C – Probable Cost Forms

SWMP APPENDIX D – Calculations

SWMP APPENDIX E – Variance Request Details

SWMP APPENDIX F – Vertical and General Construction Matrix

Vertical and General Construction Concern	BMP Measures	Information Provided by:	Approved by (COA Employee):
Provide a mixing station detail/area for masonry/brick. If the site is going to bring in silos for masonry mixing, wind protection will be required to minimize the maximum extent practicable the dust from impacting adjacent buildings and streets.			
Saw cutting station detail/area (must address slurry waste)			
Tool Cleanup BMPs and Practices			
Procedural BMPs for clean up in the above areas and clean up if spills should occur as traveling to the building area			
Options for handling paints, solvents, glues (i.e. utilize the CWS or provide alternative)			
Provide physical and procedural BMPs for clean up along the building during the installation of brick, stone or stucco (strike zone and scaffolding impacts to BMPs)			
Access may be required around the building, defining a haul route may be necessary and denote stabilization needs on this proposed haul route (cranes)			

Address access to the building as different stages of vertical construction occur. For example, a VTC may work for the duration of the infrastructure construction but as the grading is fine tuned, different measures may need to be implemented to limit access or be more mobile. Controlling access is important during vertical construction, especially when taking access from an impervious surface (i.e. pavement).			
Staging areas change during construction regularly. Therefore, if "con/conex" boxes are to be utilized and if they are to include liquid pollutants, then a redundant BMP measure must be provided			
Site drainage will need to be maintained during vertical construction. Review conditions to ensure that it will continue to work as shown during the grading/utility timeframes.			
Provide redundant BMPs for generators to protect from fuel/hydraulic leaks			
Utility Installation BMPs			
Waterproofing BMPs and procedures			

Review the down gradient BMPs within the impervious areas to ensure that conveyances, inlets and outlets are protected appropriately during each phase.			
Areas of disturbance outside of the building envelope shall still require BMPs review the timing/phasing of the project to ensure the appropriate BMPs are implemented as construction continues.			
BMPs for keeping impervious surfaces clean may need to be enhanced or added to as construction continues.			
Provide redundant BMPs for mobile concrete washouts and policies for cleanup of blobs of concrete by trades			
Review and implement BMP measures to control roof drainage. This becomes a point source and may cause extensive erosion on site.			
Address waste handling procedures for drywall, painters, carpet layers etc.			
Provide BMPs for delivery trucks – i.e. controlled access points, staging areas, delivery areas, parking area.			
Coordination Plan – required if different phases of work is to be done by different general contractors (i. e. road work vs. building façade)			

Details and BMP measures for form oil and form oil laydown area			
Run on modifications			
Interim lot stabilization techniques			
The methods to be used to address the following issues:			
▪ Irrigation testing			
▪ Water main/fire line testing			
▪ Sewer line testing			
▪ Building washing			

▪ Graffiti deterrent application			
▪ Fire retardant application			
▪ Fueling			
▪ Process water (paving rollers, boring equipment, wet saws, etc)			