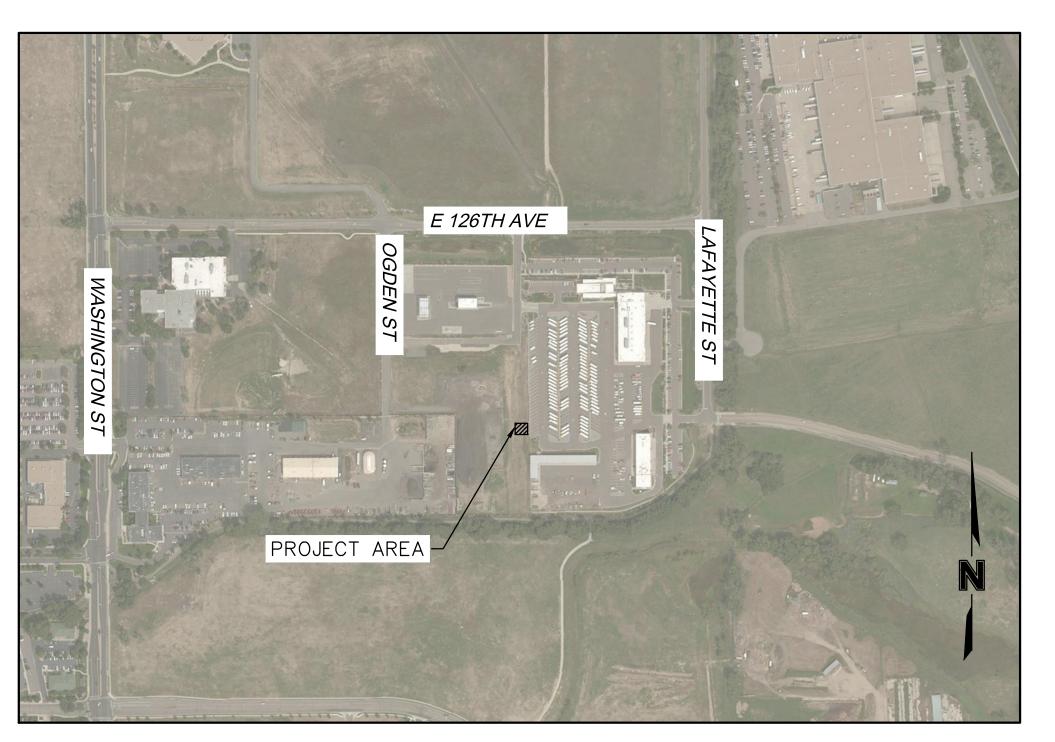
THORNTON VAC TRUCK DUMP STATION

PROJECT NO. 174-18 CITY OF THORNTON, CO



SHEET NUMBER SHEET DESCRIPTION

1 COVER
2 GENERAL NOTES
3 EROSION CONTROL NOTES
4 EROSION CONTROL PLAN
5 EROSION CONTROL DETAILS
6 PLAN AND PROFILE
7 STRUCTURAL DETAILS
8 STRUCTURAL NOTES
9 DETAILS
10 DETAILS

PREPARED BY:

OLSSON

VICINITY MAP
SCALE: 1" = 800'

PREPARED FOR:



CITY OF THORNTON

DATE

DATE

DATE

JASON PIERCE, P.E., INFRASTRUCTURE ENGINEERING DIRECTOR

TIFFANY HESS, PROJECT MANAGER

TIESS, FILOUECT MANAGEN

JOSH REDMAN, UTILITIES OPERATIONS MANAGER

48947 £ 8/22/23

CHANCE UHRICH, P.E. 48947, PROJECT MANAGER

DATE

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August 23, 2023

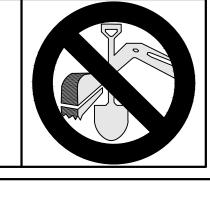
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OLSSON

CALL UTILITY NOTIFICATION CENTER OF COLORADO

81

CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



UTILITY LOCATIONS COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. STATION THORNTON checked by: QA/QC by: project no.: 018-2048
drawing no.: W TTL 82048
date: 8.23.2023 SHEET of 10

- 2. RELOCATION OF UTILITIES MAY OR MAY NOT BE NEEDED AFTER THEY ARE EXPOSED. ACTUAL RELOCATION OF LINES WILL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE SHOWN, BUT THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANIES TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE.
- 3. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR THE FIELD LOCATION (INCLUDING TEST HOLING AND SURVEYING TO VERIFY LOCATION AND ELEVATION), PROTECTION, AND REPAIR OF ALL UTILITIES, COORDINATION WITH UTILITY COMPANIES AND ANY MINOR ADJUSTMENT OF STRUCTURES OR PIPES NEEDED IN ORDER TO CLEAR A CONFLICTING UTILITY. CONTACT UTILITY COMPANIES THREE BUSINESS DAYS IN ADVANCE WHEN WORKING ADJACENT TO THE UTILITY.
- 4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL PRECAUTIONS AS NECESSARY TO PROTECT ALL UTILITIES DURING CONSTRUCTION. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING UTILITIES RESULTING FROM CONSTRUCTION OPERATIONS. ALL COSTS ASSOCIATED WITH REPAIR OF DAMAGED UTILITIES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
- 5. WHEREAS CERTAIN UTILITY COMPANIES UNDERTAKE ALL WORK ASSOCIATED WITH THEIR RESPECTIVE UTILITY, THE CONTRACTOR SHALL NOT UNDERTAKE ANY UTILITY WORK WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE APPROPRIATE UTILITY COMPANY TO PERFORM SAID WORK. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH IMPACTED UTILITIES TO ASSURE TIMELY RELOCATION OF THEIR FACILITIES. UTILITY CONTACT INFORMATION IS PROVIDED ON THE COVER SHEET.
- 6. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED CONSTRUCTION DRAWINGS, CONTRACT DOCUMENTS, SHOP DRAWINGS, ONE COPY OF APPLICABLE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSIONS AT THE JOB SITE AT ALL TIMES.
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCEPTANCE AND CONTROL OF ALL FLOWS INCLUDING STORM FLOWS, OFF-SITE DRAINAGE FLOWS, AND GROUNDWATER FLOWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO STRUCTURES, LOSS OF TOPSOIL AND LOSS OF SEED CAUSED BY FLOWS UNTIL THE PROJECT IS ACCEPTED BY THORNTON.
- 8. ALL ASPHALT REMOVALS SHALL BE SAWCUT TO PROVIDE A CLEAN EDGE FOR REMOVAL AND REPLACEMENT. CONCRETE SHALL BE REMOVED UP TO AN EXISTING EXPANSION/CONTRACTION JOINT, AND THE JOINT SAWCUT IF NECESSARY TO PROVIDE A CLEAN BREAK. CONCRETE ROAD PAVEMENT SHALL BE REMOVED AS ENTIRE PANELS ONLY. NO PARTIAL PANEL REMOVALS ARE PERMITTED.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL DISTURBED SURFACES AND RELATED STRUCTURES, INCLUDING BUT NOT LIMITED TO, DRIVEWAYS, CONCRETE WASHOUTS, CURBS, GUTTERS, WALKS, AND BITUMINOUS PAVEMENTS TO ORIGINAL CONDITIONS (OR BETTER). THORNTON'S CONSTRUCTION COORDINATOR AND THE CONTRACTOR SHALL TOGETHER COORDINATE THE DOCUMENTATION OF EXISTING GRADES AND OTHER INFORMATION PRIOR TO ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INCLUDE THE RESTORATION WORK IN THEIR BID.
- 10. THE COST OF ANY AND ALL DEWATERING NECESSARY FOR THE CONSTRUCTION OF ALL ITEMS SHOWN ON THESE DRAWINGS WILL NOT BE PAID AS A SEPARATE BID ITEM. ALL WORK SHALL BE DONE IN A DRY CONDITION. CONSTRUCTION DEWATERING SHALL COMPLY WITH CDPHE STANDARDS AND REGULATIONS.
- 11. CONTRACTOR SHALL SUBMIT A PLAN FOR DELIVERY OF MATERIALS, EQUIPMENT, SITE ACCESS, AND STORAGE TO THORNTON PRIOR TO STARTING CONSTRUCTION.
- 12. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL WASTE MATERIAL, CONCRETE, ASPHALT, SUBGRADE, ETC.
- 13. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY OF ANY FIELD CONDITION NOT CONSISTENT WITH CONTRACT DOCUMENTS.
- 14. CONTRACTOR SHALL OBTAIN ALL APPLICABLE CODES, LICENSES, STANDARDS, SPECIFICATIONS, PERMITS, AND BONDS THAT ARE NECESSARY TO PERFORM THE PROPOSED WORK.
- 15. ALL PAVEMENT, CURBS, GUTTERS, SIDEWALKS, BACKFILLS AND ALL OTHER ROADWAY STRUCTURES SHALL BE PREPARED AND CONSTRUCTED IN CONFORMANCE WITH THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS", OR THE DESIGNS PRESENTED HEREIN, WHICHEVER IS MORE STRINGENT.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING ANY ASPHALT, CONCRETE, ETC. NOT DESIGNATED FOR REPLACEMENT BUT DAMAGED BY THEIR ACTIONS AT NO COST TO THORNTON. DAMAGED CONCRETE SHALL BE REPLACED AT THE NEXT UNDAMAGED JOINT AND ASPHALT SHALL BE SAW CUT AT LEAST ONE FOOT FROM THE DAMAGED SECTION OR AS DIRECTED BY THORNTON.
- 17. THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEANUP ANY TRASH OR MUD ON THE SITE OR ADJACENT STREETS AS A RESULT OF CONSTRUCTION.
- 18. WORK HOURS SHALL BE FROM 7:00 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THORNTON.
- 19. TEMPORARY LANE CLOSURES SHALL BE COORDINATED WITH THE CITY OF THORNTON.
- 20. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER A SET OF CONSTRUCTION DRAWINGS WITH REDLINES INDICATING THE ACTUAL CONFIGURATIONS AND LOCATIONS OF IMPROVEMENTS CONSTRUCTED WHERE AS-BUILT CONDITIONS DIFFER FROM THE CONTRACT DRAWINGS. ALSO, THE CONTRACTOR SHALL IDENTIFY THE TYPE AND HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES ENCOUNTERED DURING EXCAVATION.
- 21. ALL VEGETATION, INCLUDING, BUT NOT LIMITED TO, TREES AND SHRUBS, MUST BE PROTECTED UNLESS IDENTIFIED FOR REMOVAL.
 TURF OR VEGETATION THAT IS DAMAGED DURING THE CONSTRUCTION PROCESS WILL BE REPLACED AND MAINTAINED UNTIL
 ESTABLISHMENT. MODIFICATIONS TO EXISTING IRRIGATION WILL BE COORDINATED WITH OWNER, WILL BE UNDERTAKEN BY QUALITY
 CONTRACTOR, AND WILL BE RECORDED IN AS-BUILT DOCUMENTS.

WATER SYSTEM NOTES

- 1. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE; INCLUDING, SAFETY OF PERSONS AND PROPERTY DURING THE PERFORMANCE OF WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THORNTON TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN. ON. OR NEAR THE CONSTRUCTION SITE.
- 2. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO 811 OR (1-800-922-1987) FOR THE LOCATION OF UNDERGROUND GAS, ELECTRIC, TELEPHONE, CABLE, WATER, AND SANITARY UTILITIES AT LEAST THREE BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- 3. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS" AND WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED CITY OF THORNTON PERSONNEL.
- 4. NEW WATER MAINS TWELVE (12) INCHES OR LESS SHALL BE PVC PRESSURE PIPE, UNLESS OTHERWISE SPECIFIED, AND SHALL CONFORM TO AWWA STANDARD C-900 WITH THE FOLLOWING ADDITIONAL REQUIREMENTS OR EXCEPTIONS:
 - PIPE SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS" SECTION 204.
 - WATER MAINS SHALL BE LAID IN CONFORMANCE WITH LATEST EDITION OF THE CITY OF THORNTON STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS AND SHALL BE SUBJECT TO THORNTON INSPECTION AND APPROVAL.
- 5. FIRE HYDRANTS SHALL BE LIMITED TO THE FOLLOWING MANUFACTURERS ONLY AND SHALL BE PAINTED ACCORDING TO THE LATEST EDITION OF THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS" PRIOR TO ACCEPTANCE.

MUELLER COMPANY - 5½" CENTURION WATEROUS COMPANY - MODEL WB-67 AVK - SERIES 27

- 6. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER THE "AS CONSTRUCTED" LOCATIONS OF INSTALLED FACILITIES AND, THIS IN TURN, SHALL BE DEVELOPED INTO RECORD DRAWINGS BY THE ENGINEER AND SUBMITTED TO THORNTON.
- 7. THERE SHALL BE A MINIMUM OF 4.5 FEET OF COVER FROM FINISHED GRADE TO THE TOP OF PIPE.
- 8. BEDDING AND BACKFILL MATERIALS FOR BOTH WATER AND SEWER SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS."
- 9. A MEETING MUST BE HELD BETWEEN THE CONTRACTOR AND CITY OF THORNTON CONSTRUCTION COORDINATOR PRIOR TO CONSTRUCTION.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC STREETS OF MUD OR DEBRIS DUE TO CONSTRUCTION ACTIVITY INITIATED BY SAID CONTRACTOR ON A DAILY BASIS OR AS OTHERWISE DIRECTED BY AUTHORIZED THORNTON PERSONNEL.
- 11. THRUSTBLOCKS SHALL BE PLACED AT FITTINGS, TEES, BENDS, CROSSES, PLUGS, ETC., IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF THORNTON "STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS."
- 12. MECHANICAL JOINT RESTRAINTS (I.E. MEGALUG OR UNI-FLANGE) ARE REQUIRED AT ALL FITTINGS AND BENDS.
- 13. ALL FITTINGS AND BENDS SHALL BE CLASS 350/AWWA C153 DUCTILE IRON.
- 14. CONTRACTOR SHALL COORDINATE ALL WATER SYSTEM INTERRUPTIONS WITH THORNTON 48 HOURS PRIOR TO ANTICIPATED DISRUPTION OF SERVICE.

EARTHWORK NOTES

- 1. EXPLORATORY BORINGS AND LOGS WERE PERFORMED BY *OLSSON ASSOCIATES*, DATED *AUGUST 1, 2018,* A COMPLETE GEOTECHNICAL REPORT IS INCLUDED IN THE PROJECT MANUAL.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION, TRENCHING, BACKFILL, AND COMPACTION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. COMPACTION AND MOISTURE TESTING WILL BE PROVIDED BY THE CITY. IF A COMPACTION OR MOISTURE TEST FAILS TO MEET SAID REQUIREMENTS, THE CONTRACTOR WILL BE REQUIRED TO CORRECT THE WORK AND WILL BE RESPONSIBLE FOR THE COST OF RE-TESTING.
- 3. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. THE CONTRACTOR SHALL PROVIDE A WATER TRUCK ON-SITE FOR DUST CONTROL. LOCATIONS SHALL BE AS ORDERED BY CITY AND WILL NOT BE PAID FOR SEPARATELY.
- 4. DURING FILL PLACEMENT, THE FILL SHOULD BE PLACED IN MAXIMUM LOOSE LIFT THICKNESS OF 8 INCHES AND COMPACTED TO A MINIMUM OF 95% IF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 WITH MOISTURE CONTENT BETWEEN -1 TO +3 OF OPTIMUM.
- 5. ALL AREAS RECEIVING FILLS SHALL BE THOROUGHLY SCARIFIED, PLOWED AND WELL MIXED TO A DEPTH OF 12-INCHES (MIN), MOISTURE TREATED AND COMPACTED IN ACCORDANCE WITH NOTE 4.
- 6. EXCESS SOIL THAT MAY BE GENERATED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR.

LIST OF ABBREVIATIONS

BMP - BEST MANAGEMENT PRACTICES

BOC - BACK OF CURB

BOW — BOTTOM OF WALL
CMP — CORRUGATED METAL PIPE

COT - CITY OF THORNTON
CPP - CORRUGATED PLASTIC PIPE

DND - DO NOT DISTURB

EP — EDGE OF PAVEMENT E.W. — EACH WAY

FG — FINISHED GROUND FL — FLOW LINE

I.F. – INSIDE FACE

HCL - HORIZONTAL CONTROL LINE

NIC — NOT IN CONTRACT O.C. — ON CENTER

RCBC - REINFORCED CONCRETE BOX CULVERT

RCP - REINFORCED CONCRETE PIPE R/W - RIGHT-OF-WAY

TC - TOP OF CURB

TOS — TOP OF SLAB TOW — TOP OF WALL

TYP - TYPICAL

S Raleigh Street, Suite 400

NOTE
THIS DOCUMENT HAS BEEN
RELEASED BY OLSSON ONLY
FOR REVIEW BY REGULATORY
AGENCIES AND OTHER
PROFESSIONALS, AND IS
SUBJECT TO CHANGE. THIS
DOCUMENT IS NOT TO BE
USED FOR CONSTRUCTION.

OLSSON ASSUMES NO
RESPONSIBILITY FOR EXISTING
UTILITY LOCATIONS
(HORIZONTAL OR VERTICAL).
THE EXISTING UTILITIES SHOWN
ON THIS DRAWING HAVE BEEN
PLOTTED FROM THE BEST
AVAILABLE INFORMATION. IT IS
HOWEVER THE RESPONSIBILITY
OF THE CONTRACTOR TO FIELD
VERIFY THE LOCATION OF ALL
UTILITIES PRIOR TO THE
COMMENCEMENT OF ANY
CONSTRUCTION ACTIVITIES.

REV.				2023
DATE				
REVISIONS DESCRIPTION				OLVOIOI/10

GENERAL NOTES

DRNTON VAC TRUCK DUMP STATION

drawn by: KP checked by: approved by: DK QA/QC by: DK project no.: 018-2048

 drawing no.:
 W TTL 82042

 date:
 8.23.2023

of 10

48947 = 8/22/23

FOR BID

NOT TO BE USED FOR CONSTRUCTION

August 23, 2023

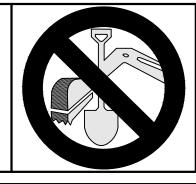
DATE PRINTED

OLSSON

CALL UTILITY NOTIFICATION CENTER OF COLORADO

81

CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



- 3. STORMWATER DISCHARGER FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLE CONTRIBUTE TO AN EXCEEDANCE OF ANY WATER QUALITY STANDARD.
- 4. CONSTRUCTION SHALL BE PHASED IN A MANNER TO LIMIT EARTH DISTURBING ACTIVITIES (I.E. THE ENTIRE PROJECT SITE SHOULD NOT BE DISTURBED IF CONSTRUCTION WILL ONLY BE OCCURRING IN ONE PARTICULAR
- 5. SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
- 6. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND ANY OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS.
- 7. A COPY OF THE SWMP AND SITE MAPS MUST BE AVAILABLE AT ALL TIMES ON THE CONSTRUCTION SITE UNLESS OTHERWISE APPROVED BY CDPHE OR THE CITY.
- 8. THE SWMP AND SITE MAPS SHALL BE CONTINUOUSLY UPDATED TO REFLECT NEW OR REVISED BEST MANAGEMENT PRACTICES (BMPs) DUE TO CHANGES IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE CONSTRUCTION SITE. UPDATES MUST BE MADE WITHIN 72 HOURS FOLLOWING THE CHANGE IN BMPs.
- 9. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE (INCLUDING ALL BMPs, STORAGE CONTAINERS, AND CONSTRUCTION EQUIPMENT) A MINIMUM OF EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS AFTER A PRECIPITATION EVENT OR SNOW MELT THAT CAUSE SURFACE EROSION. INSPECTIONS SHALL CONTINUE UNTIL AN INACTIVATION NOTICE IS FILED WITH CDPHE.
- 10. THE CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS ON SITE AND AVAILABLE FOR REVIEW BY CDPHE OR THORNTON STAFF. INSPECTION REPORTS MUST IDENTIFY ANY INCIDENTS OF NON—COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT.
- 11. BMPs REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE ADDRESSED IMMEDIATELY AFTER OBSERVATION OF THE FAILING BMP.
- 12. FOR ALL INSTANCES OF NON-COMPLIANCE BASED ON ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES, ALL NEEDED INFORMATION MUST BE PROVIDED ORALLY TO CDPHE SPILL REPORTING LINE (24-HOUR NUMBER FOR ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES: 1-877-518-5608) WITHIN 24 HOURS FROM THE TIME THE CONTRACTOR FIRST BECOMES AWARE OF THE SPILL OR RELEASE.
- 13. STRAW BALES SHALL NOT BE USED FOR PRIMARY EROSION OR SEDIMENT CONTROL (I.E. STRAW BALES MAY BE USED FOR REINFORCEMENT BEHIND ANOTHER BMP, SUCH AS SILT FENCE).
- 14. BMPs INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE CONTOURS.
- 15. ALL BMPs SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE BMP UNLESS OTHERWISE SPECIFIED IN THE SWMP.
- 16. A VEHICLE TRACKING PAD (VTP) SHALL BE PLACED ALL EXITS FROM THE SITE TO PREVENT TRACK—OUT ONTO STREETS OR ROADS. IF TRACK—OUT DOES OCCUR, THE CONTRACTOR SHALL IMMEDIATELY SWEEP THE STREET OF DEBRIS. RECYCLED CRUSHED CONCRETE OR ASPHALT SHALL NOT BE USED FOR VEHICLE TRACKING PADS OR ON ANY VEHICLE TRAFFIC AREA.
- 17. ALL SEDIMENT COLLECTED IN BMPs SHALL BE REMOVED PRIOR TO THORNTON'S ISSUANCE OF INITIAL ACCEPTANCE.
- 18. PERMANENT EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH DISTURBANCE HAS BEEN COMPLETED, OR WHERE SIGNIFICANT EARTH DISTURBANCE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 14 CALENDAR DAYS AFTER THE DISTURBANCE IS COMPLETED. TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION MEASURES ARE IMPLEMENTED.
- 19. FINAL STABILIZATION HAS BEEN ACHIEVED WHEN ALL EARTH DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST 70 PERCENT OF PRE-DISTUBANCE LEVELS, OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED.
- 20. ALL TEMPORARY BMPs SHALL BE REMOVED FROM THE SITE UPON SUBMITTING THE INACTIVATION NOTICE.
- 21. ALL SITE WASTED (INCLUDING TRASH AND BUILDING MATERIALS) MUST BE PROPERLY MANAGED TO PREVENT POTENTIAL POLLUTION OF STATE WATERS.
- 22. FOR STREET REPAIR OPERATIONS SUCH AS ROTOR MILLING, SLURRY SEAL AND CHIP SEAL, THE MINIMUM BMPs REQUIRED ARE: INLET PROTECTION, CURB SOCKS, AND DAILY STREET SWEEPING.

SWMP GENERAL NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A PERMIT FROM CDPHE AT LEAST 10 CALENDAR DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES FOR ANY EARTH DISTURBANCE GREATER THAN ONE (1) ACRE. THE CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF PERMIT PRIOR TO RECEIVING A GRADING/CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THE PERMIT.
- . IF THE CONTRACTOR TRANSFERS RESPONSIBILITY FOR STORMWATER DISCHARGES TO ANOTHER ENTITY, A NOTICE OF TRANSFER AND ACCEPTANCE OF TERMS FORM SHALL BE SUBMITTED TO CDPHE AND A COPY TO THE CITY.
- 3. IF THE CONTRACTOR NO LONGER HAS CONTROL OF A SPECIFIC PORTION OF A PERMITTED SITE AND WISHES TO TRANSFER COVERAGE OF THAT PORTION OF SITE TO ANOTHER, THE CONTRACTOR SHALL SUBMIT A NOTICE OF REASSIGNMENT OF PERMIT COVERAGE FORM TO THE CDPHE AND A COPY TO THE CITY.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING AN INACTIVATION NOTICE FORM TO CDPHE WHEN THE SITE HAS BEEN FINALLY STABILIZED IN ACCORDANCE WITH THE SWMP. A COPY OF THE INACTIVATION NOTICE SHALL ALSO BE SUBMITTED TO THE CITY.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



NATIVE SEED GUIDLINES

- SEEDBED PREPARATION
 THE SEEDBED SHALL BE FREE OF DEBRIS, INCLUDING WEEDS, PLANT MATTER, ROCKS, CLODS AND OTHER IMPERVIOUS MATERIAL OVER 1" IN DIAMETER. SEEDBED SHALL BE SMOOTH AND FREE OF LARGE CLUMPS, FLUFFY YET FIRM, MOIST BUT NOT WET. WHEN WALKING ACROSS THE BED, A SHOE IMPRINT IN THE SOIL SHOULD NOT BE DEEPER THAN 1". BEFORE INCORPORATION OF AMENDMENT, COT WILL INSPECT THE
- 2. PREPARING THE SEEDBED SHOULD BE TIMED WITH APPROPRIATE PLANTING DATES TO CONSERVE SOIL MOISTURE AND PREVENT WIND AND WATER EROSION. SEEDING OF IRRIGATED GRASSES CAN OCCUR ANY TIME DURING THE GROWING SEASON, BUT FOR BEST AND QUICKEST RESULTS, WARM SEASON GRASSES SHOULD BE SEEDED IN MAY AND NO LATER THAN JULY. DRYLAND SEEDING OF COOL SEASON NON-IRRIGATED GRASSES SHOULD OCCUR BETWEEN NOVEMBER 15TH & APRIL 15TH. DRYLAND SEEDING OF NON-IRRIGATED WARM SEASON GRASSES SHOULD OCCUR BETWEEN MARCH 15TH & JUNE 15TH.
- 3. SOIL AMENDMENT: MYCORRHIZAL PRODUCT TO BE MIXED INTO SEED MIX AT SEED SUPPLIER OR IN SEED BOX OR INCORPORATED INTO SEED BED TO A MINIMUM DEPTH OF 8". BIOSOL PRODUCT TO BE BROADCAST ON PLANTED SEED BED.
- 20 LBS/AC GRANULAR ENDO MYCORRHIZAL BROADCAST OR 2 LBS/ACRE MIXED WITH SEED IN SEED BOX AND 1200 LBS/AC (IF HIGH ORGANIC RESULTS AFTER SOIL TEST) TO1800 LBS/AC (IF LOW ORGANIC RESULTS AFTER SOIL TEST) BIOSOL MIX 7-2-3 TOPICALLY APPLIED AFTER DRILLING (AVAILABLE AT ROCKY MOUNTAIN BIO PRODUCTS, DENVER, 303-696-8964)
- OR 60 LBS/AC OF MYCORRHIZAL INNOCULUM AM 120 BROADCAST AND BIOSOL AT 1500 LBS/AC TOPICALLY APPLIED AFTER DRILLING (AVAILABLE AT PAWNEE BUTTES SEED COMPANY, GREELEY, 970-356-7002 OR 800-782-5947) OR
- APPROVED EQUAL.

SEEDBED.

II. PLANTIN

- 1. BEFORE PLANTING, COT WILL APPROVE INCORPORATION OF AMENDMENT INTO SEEDBED.
- 2. SEE SPECIFICATIONS FOR SEED MIX AND REQUIREMENTS.
- 3. SEEDING SHALL BE DONE IMMEDIATELY AFTER SOIL PREPARATION TO DISCOURAGE WEED COMPETITION. SEED SHALL BE EVENLY DISTRIBUTED OVER AMENDED GROUND ON A STILL DAY INTO A SLIGHTLY MOIST SEEDBED, USING AN APPROVED GRASS DRILL WITH DOUBLE DISC OPENERS, PACKER WHEELS AND (FLUFFY) SEED BOXES AS APPROPRIATE. AS APPROPRIATE, DRILL EQUAL QUANTITY OF SEED ½ DEEP IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER. HAND—BROADCAST METHODS SHALL BE AT DOUBLE THE SEEDING RATE AND SHALL BE 'RAKED IN' OR OTHERWISE COVERED WITH SOIL TO A DEPTH OF ½. HYDRAULIC SEEDING CAN ONLY BE USED IN AREAS NOT ACCESSIBLE FOR MACHINE METHODS; SEED AND MULCH SHALL NOT BE APPLIED IN THE SAME OPERATION.
- 4. ALL SEEDED AREAS SHALL BE HYDRO-MULCHED WITH WOOD (NOT PAPER) FIBER IN A SEPARATE APPLICATION AFTER DRILLING. MIX WATER, 2000 LBS/AC OF MAT FIBER MULCH AND 100 LBS/AC OF TACKIFIER, OR AT MANUFACTURER'S RECOMMENDED RATES, WHICHEVER IS GREATER. HYDRAULIC MULCHING SHALL NOT BE PERFORMED IN THE PRESENCE OF FREE SURFACE WATER. IN AREAS NOT ABLE TO BE HYDROMULCHED, COVER ALL SEEDED AREA WITH 100% BIODEGRADABLE STRAW BLANKETS WITH BIODEGRADABLE BLANKET PINS.
- 5. IF IRRIGATED, WTHIN 12 HOURS OF SEEDING, WATER SEEDED AREA FREQUENTLY AND LIGHTLY. WATER ENOUGH TO KEEP THE SOIL MOIST, BUT NOT SO HEAVILY AS TO CAUSE SOIL WASHING AND LOSS OF THE GRASS SEED.
- 6. SEEDED SLOPES APPROVED AS 3:1 SHALL BE COVERED WITH BIODEGRADABLE EROSION CONTROL SEED BLANKETS.
- 7. GERMINATION DURING THE GROWING SEASON IS EXPECTED WITHIN 3-6 WEEKS. SPOT REGRADING, RESEEDING AND MULCHING SHALL IMMEDIATELY BE REQUIRED FOR AREAS OF LITTLE OR NO GERMINATION AND TO REPAIR AREAS DAMAGED BY EROSION, WIND, VANDALISM, FIRE OR OTHER CAUSES.
- 8. FLOWER/FORBE SEED MAY BE ADDED TO MIXES WHERE GRASSES WILL NOT BE MOWED, BUT SHALL NOT SUBSTITUTE FOR QUANTITIES OF SEED. SPECIES THAT READILY RESEED THEMSELVES SEEM TO WORK BEST

. III. ESTABLISHMENT

1. KEEPING THE SEED MOIST IS THE KEY TO GERMINATION AND INITIAL GROWTH. HIGH SEEDING RATES, SHALLOW DRILLING OF NO GREATER THAN $\frac{1}{2}$ " AND NARROW (2-4") SEEDER ROW SPACING HAVE PROVEN TO BE CRITICAL IN OBTAINING RAPID ESTABLISHMENT.

- 2. IF IRRIGATED, DESIGN THE IRRIGATION SYSTEM FOR 'HEAD TO HEAD' COVERAGE, USING ROTOR AND SPRAY HEADS
- WITH MATCHED PRECIPITATION RATES.

 ESTABLISHMENT IRRIGATION MEANS APPLYING WATER A MINIMUM 2 TIMES/DAY UNTIL SEED GERMINATES TO THE THREE LEAF STAGE. AFTER THE THREE LEAF STAGE AND UNTIL THE GRASS IS 3-4" TALL, WATER 2
- AFTER THE FIRST MOWING AND FOR THE NEXT TWO GROWING SEASONS (APRIL—OCTOBER), WATER 1" EVERY
 TWO WEEKS. ADJUST ESTABLISHMENT IRRIGATION INCHES BY NATURAL PRECIPITATION AMOUNTS.
- 3. THE ESTABLISHMENT PERIOD FOR IRRIGATED SEED CAN BE A MINIMUM OF TWO GROWING SEASONS. AFTER TWO SEASONS, WATER IS APPLIED AS DESIRED TO CREATE A PARTICULAR LANDSCAPE STYLE, GENERALLY 1" WATER/MONTH. ESTABLISHMENT OF NON-IRRIGATED SEED CAN TAKE THREE TO FIVE GROWING SEASONS OR MORF.
- 4. TREES AND SHRUBS IN NATURAL SEED AREAS (CHOSEN FROM ULTRA-LOW WATER DEMAND LIST) REQUIRE IRRIGATION ZONED SEPARATELY FROM SEEDED AREAS.

IV. MAINTENANCE / WEED CONTROL

TIMES/DAY WITH A TOTAL 3/10" WATER/DAY.

- MOWING

 TIMELY MOWING OPERATIONS ARE THE INDUSTRY STANDARD USED TO MANAGE WEED CONTROL WITHOUT CHEMICALS. NO MOWING FOR THE FIRST SIX WEEKS AFTER SEEDS SPROUT; MOW WEEDS BEFORE ANNUAL SEED SET. IT MAY BE NECESSARY TO MOW DURING THE FIRST GROWING SEASON, DEPENDING ON WHEN GRASS WAS SEEDED. IT IS USUALLY NECESSARY TO MOW IN THE SECOND YEAR, DEPENDIN ON TIMING AND AMOUNT OF ADDITIONAL REQUIRED RESEEDING.
- DRYLAND AREAS SHOULD BE MOWED WHEN WEEDS REACH 8" OR EVERY 45 DAYS. IRRIGATED AREAS SHOULD BE MOWED EVERY THREE WEEKS OR WHEN GRASS REACHES A MAXIMUM HEIGHT OF 12".
- MOW GRASS WITH A FLAIL TYPE MOWER, NOT A SICKLE MOWER, TO A HEIGHT OF 6". THE GOAL OF MOWING IS TO KNOCK DOWN THE WEEDS AND JUST SKIM THE TOPS OF THE NEW GRASS. REMOVE WEEDS BY HAND OVER 6-8" TALL THAT ARE NOT CONTROLLED BY MOWIN, GENERALLY ONCE A MONTH

2. CHEMICAL TREATMENT

- FOR PERENNIAL WEED CONTROL, USE SPOT CHEMICAL SPRAYING OR HAND WEEDING AFTER GRASS PLANTS ARE UP AND FAIRLY MATURE, MINIMUM PAST THE THREE TO FIVE LEAF STAGE. REMOVE WEEDS BY HAND OVER 6—8" TALL THAT ARE NOT CONTROLLED BY CHEMICAL TREATMENT, GENERALLY ONCE A MONTH.
- APPLY HERBICIDE ONLY WITH THE WRITTEN APPROVAL OF THE CITY AND AS RECOMMENDED BY A
 PROFESSIONAL APPLICATOR. APPLY A SELECTIVE PRE— AND POST—GERMINATION HERBICIDE THAT IS LABELED
 FOR USE WITH THE SPECIES LISTED ON THE SEED MIX, TO CONTROL WEEDS FOR THE MAINTENANCE PERIOD
 BEFORE INITIAL ACCEPTANCE AND DURING THE WARRANTY PERIOD BETWEEN INITIAL AND FINAL ACCEPTANCE.
 THE USE OF JOURNEY SELECTIVE, PRE—EMERGENT HERBICIDE OR EQUIVALENT SHALL BE REQUIRED IN AREAS
- INFESTED WITH CHEATGRASS (BROMUS TECTORUM) AND OTHER GRASSY WEEDS. JOURNEY SHALL BE APPLIED IN LATE SUMMER PRIOR TO GERMINATION OF CHEATGRASS AND OTHER WINTER ANNUAL WEEDS.

 HERBICIDE APPLICATION FOR CONTROL OF ANNUAL WINTER GROWING WEEDS USUALLY OCCURS NEAR AUGUST
- 3. LITTER AND DEBRIS REMOVAL: REMOVE ALL LITTER AND DEBRIS LARGER THAN TWO INCHES IN SIZE, SUCH AS ROCKS, PLASTIC, PAPER, METAL AND GLASS AND DISPOSE OF OFF SITE.

V. CITY ACCEPTANCE CRITERIA FOR SEEDED AREA

15TH AND FOR PERENNIAL WEEDS NEAR OCTOBER 15TH.

- 1. INITIAL ACCEPTANCE MAY OCCUR WHEN THE CITY HAS RECEIVED AND APPROVED ALL PRODUCT CERTIFICATIONS AND QUANTITIES AND GIVEN WRITTEN ACKNOWLEDGEMENT THAT THE DESIGNATED AREA HAS BEEN PREPARED, SEEDED, MULCHED AND MAINTAINED TO MEET THE SPECIFICATION REQUIREMENTS.
- CONTRACTOR SHALL MAINTAIN SEEDED AREA UNTIL INITIAL ACCEPTANCE.
 REGRADING, RESEEDING, REMULCHING AND WEED CONTROL IS REQUIRED UNTIL INITIAL ACCEPTANCE FOR AREAS OF LITTLE OR NO SEED GERMINATION AND TO REPAIR AREAS DAMAGED BY EROSION, WIND, VANDALISM,
- FIRE OR OTHER CAUSES.

 2. FINAL ACCEPTANCE MAY OCCUR ONE YEAR AFTER INITIAL ACCEPTANCE WHEN THE STAND OF GRASS DISPLAYS UNIFORM COVERAGE AT MINIMUM THREE TO FIVE LEAF STAGE OF THE SEED MIX PLANTED (MINIMUM 80% HEALTHY GRASS COVERAGE OVER ANY 10 SQUARE FOOT AREA AND BARE SPOTS NOT EXCEEDING 10" BY 10"),
- WITH ALL SPECIES OF THE MIX BEING WELL REPRESENTED, MINIMAL WEEDS PRESENT AND THE AREA FREE OF SURFACE IRREGULARITIES (NO RILLS & GULLIES), AS DETERMINED BY THE CITY.

 ANY AREAS THAT DO NOT COMPLY WITH FINAL ACCEPTANCE CRITERIA SHALL BE RESEEDED BY THE
- CONTRACTOR IN ACCORDANCE WITH THESE SPECIFICATIONS, USING SPECIFIED MATERIALS AND METHODS.
- · HYDROMULCH MAY NOT BE REQUIRED IN RESEEDED AREAS.

SWMP BMP MAINTENANCE NOTES

- 1. BMP'S SHALL BE INSTALLED BEFORE ANY EARTH DISTURBING ACTIVITIES COMMENCE.
- 2. STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLY CONTRIBUTE TO AN EXCEEDANCE OF ANY WATER QUALITY STANDARD.
- 3. CONSTRUCTION SHALL BE PHASED IN A MANNER TO LIMIT EARTH DISTURBING ACTIVITIES (I.E. THE ENTIRE PROJECT SITE SHOULD NOT BE DISTURBED IF CONSTRUCTION WILL ONLY BE OCCURRING IN ONE PARTICULAR SECTION).
- 4. SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
- 5. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND ANY OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS.
- 6. A COPY OF THE SWMP AND SITE MAPS MUST BE AVAILABLE AT ALL TIMES ON THE CONSTRUCTION SITE UNLESS OTHERWISE APPROVED BY CDPHE OR THE CITY.
- 7. THE SWMP AND SITE MAPS SHALL BE CONTINUOUSLY UPDATED TO REFLECT NEW OR REVISED BEST MANAGEMENT PRACTICES (BMP'S) DUE TO CHANGES IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE CONSTRUCTION SITE. UPDATES MUST BE MADE WITHIN 72 HOURS FOLLOWING THE CHANGE IN BMP'S.
- 8. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE (INCLUDING ALL BMP'S, STORAGE CONTAINERS, AND CONSTRUCTION EQUIPMENT) A MINIMUM OF EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS AFTER A PRECIPITATION EVENT OR SNOW MELT THAT CAUSES SURFACE EROSION. INSPECTIONS SHALL CONTINUE UNTIL AN INACTIVATION NOTICE IS FILED WITH CDPHE.
- 9. THE CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS ON SITE AND AVAILABLE FOR REVIEW BY CDPHE OR CITY STAFF. INSPECTION REPORTS MUST IDENTIFY ANY INCIDENTS OF NON—COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT.
- 10. BMP'S REQUIRING MAINTENANCE OR ADJUSTMENT SHALL BE REPAIRED IMMEDIATELY AFTER OBSERVATION OF THE FAILING BMP.
- 11. FOR ALL INSTANCES OF NONCOMPLIANCE BASED ON ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES, ALL NEEDED INFORMATION MUST BE PROVIDED ORALLY TO CDPHE SPILL REPORTING LINE (24-HOUR NUMBER FOR ENVIRONMENTAL HAZARDS AND CHEMICAL SPILLS AND RELEASES: 1-877-518-5608) WITHIN 24 HOURS FROM THE TIME THE CONTRACTOR COMES AWARE OF THE CIRCUMSTANCES.
- 12. STRAW BALES SHALL NOT BE USED FOR PRIMARY EROSION OR SEDIMENT CONTROL (I.E. STRAW BALES MAY BE USED FOR REINFORCEMENT BEHIND ANOTHER BMP SUCH AS SILT FENCE).
- 13. BMP'S INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE.

- 14. ALL BMP'S SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE BMP UNLESS OTHERWISE SPECIFIED.
- 15. A VEHICLE TRACKING PAD (VTP) SHALL BE PLACED AT ALL EXITS FROM THE SITE TO PREVENT TRACK—OUT ONTO CITY STREETS. IF TRACK—OUT DOES OCCUR, THE CONTRACTOR SHALL IMMEDIATELY SWEEP THE STREET OF DEBRIS.
- 16. ALL SEDIMENT COLLECTED IN BMP'S SHALL BE REMOVED UPON INITIAL ACCEPTANCE.
- 17. PERMANENT EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH DISTURBANCE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH DISTURBANCE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 14 CALENDAR DAYS. TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION MEASURES ARE IMPLEMENTED.
- 18. FINAL STABILIZATION HAS BEEN ACHIEVED WHEN ALL EARTH DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST 70 PERCENT OF PRE—DISTURBANCE LEVELS, OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED.
- 19. ALL TEMPORARY BMP'S SHALL BE REMOVED FROM THE SITE UPON SUBMITTING THE INACTIVATION NOTICE.
- 20. ALL SITE WASTES (INCLUDING TRASH AND BUILDING MATERIALS) MUST BE PROPERLY MANAGED TO PREVENT POTENTIAL POLLUTION OF STATE WATERS.
- 21. THE CONTRACTOR SHALL INSTALL SEDIMENT CONTROL LOGS ON THE DOWNSTREAM PERIMETER OF ALL STOCKPILES IN ACCORDANCE WITH THE APPROVED GRADING, EROSION, AND SEDIMENT CONTROL PLAN. THE COST FOR SEDIMENT CONTROL LOGS SHALL NOT BE PAID SEPARATELY.
- 22. THE CONTRACTOR SHALL SWEEP THE STREET PERIODICALLY THROUGHOUT THE DAY AND AT THE END OF THE WORK DAY IN ACCORDANCE WITH THE APPROVED GRADING, EROSION, AND SEDIMENT CONTROL PLAN. THE COST FOR STREET SWEEPING SHALL NOT BE PAID SEPARATELY.



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August 23, 2023

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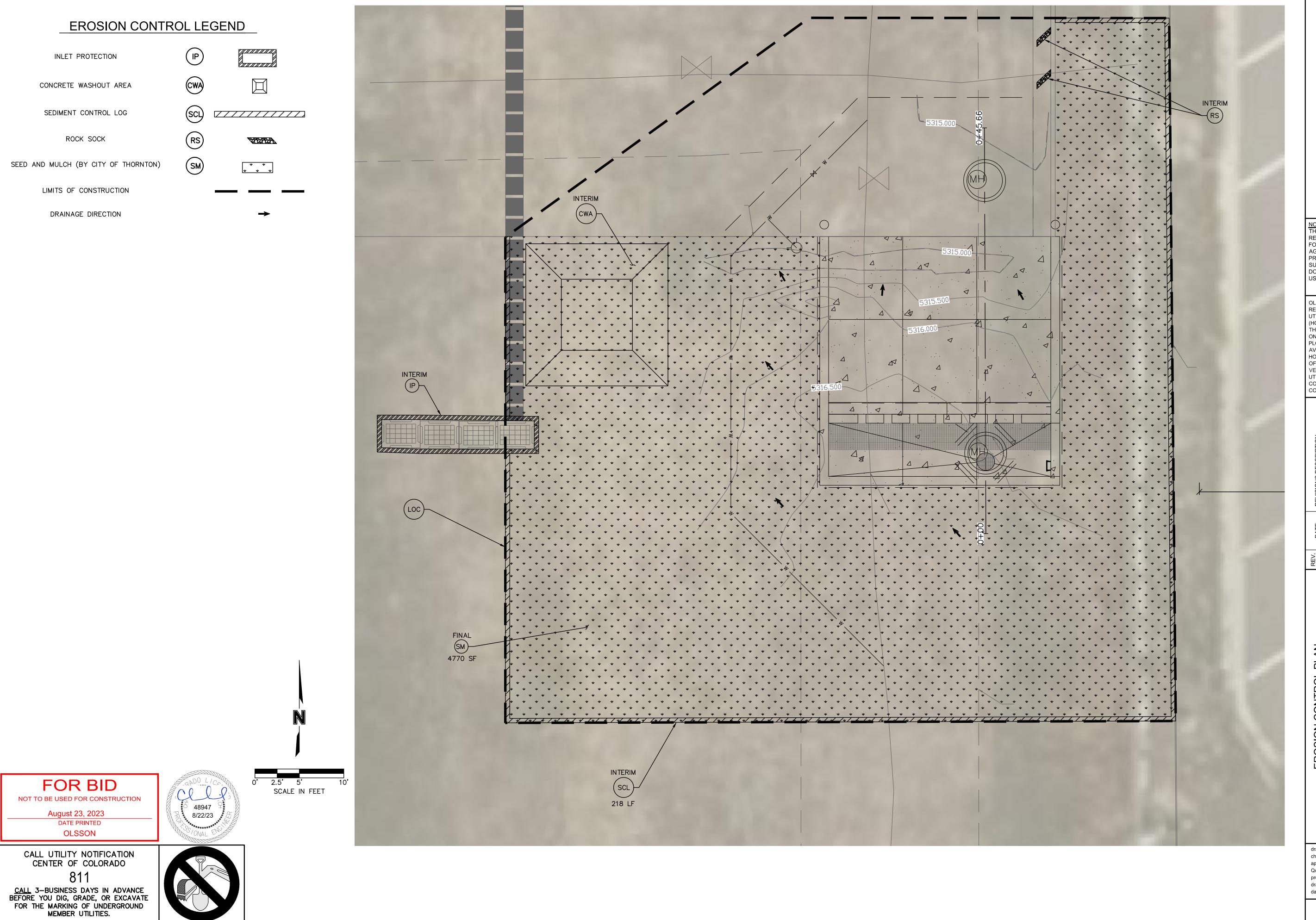
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EROSION AND SEDIMEN
THORNTON VAC TRUC

drawn by: KP
checked by: CU
approved by: DK
QA/QC by: DK
project no.: 018-2048
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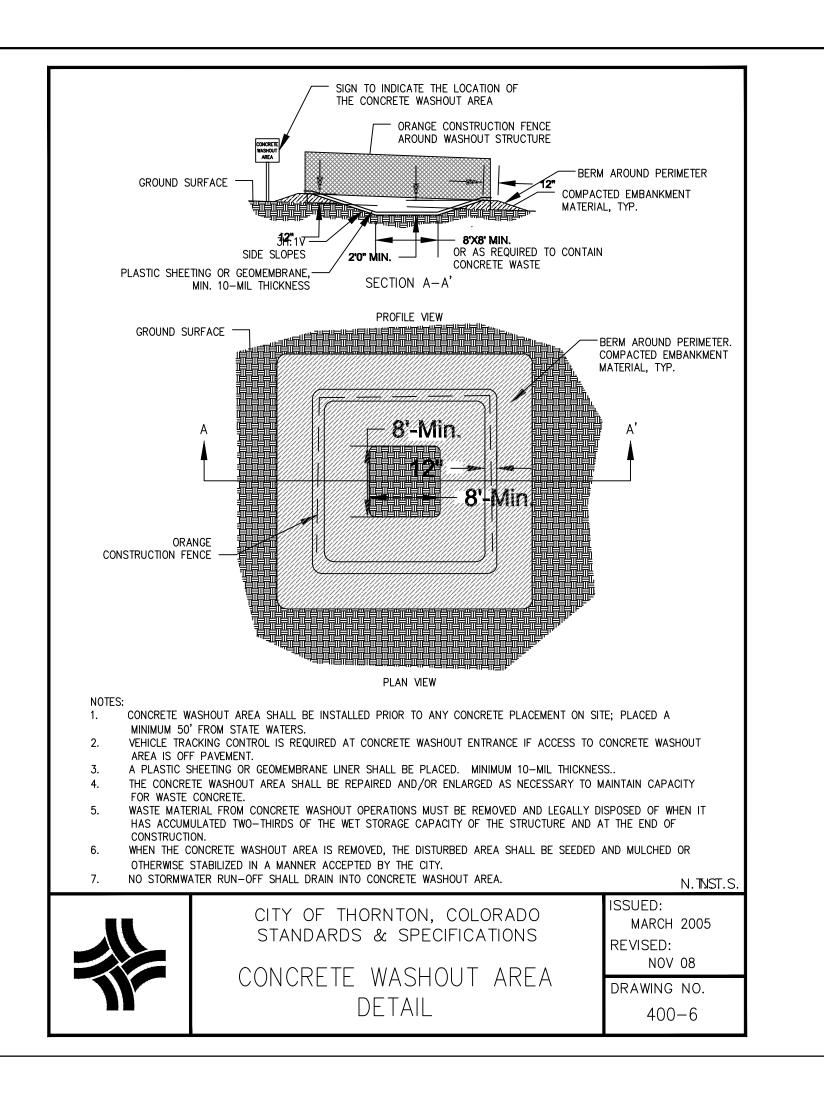
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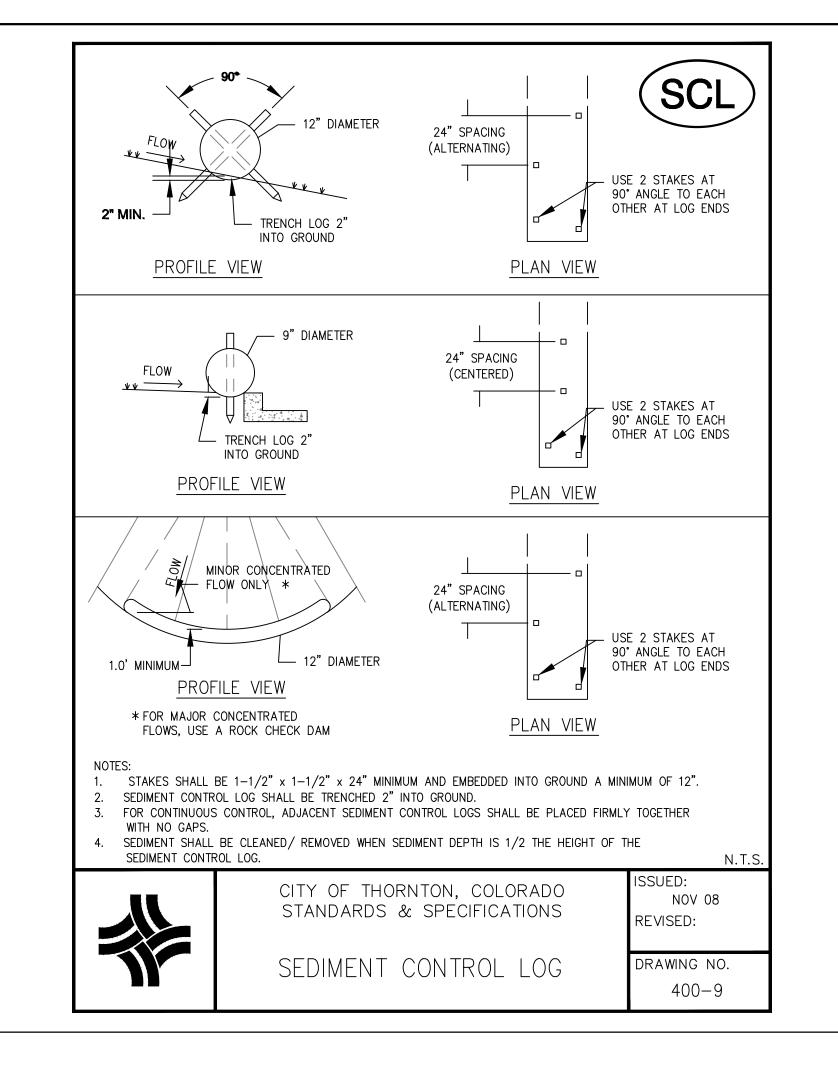
TRUCK DUMP STATION

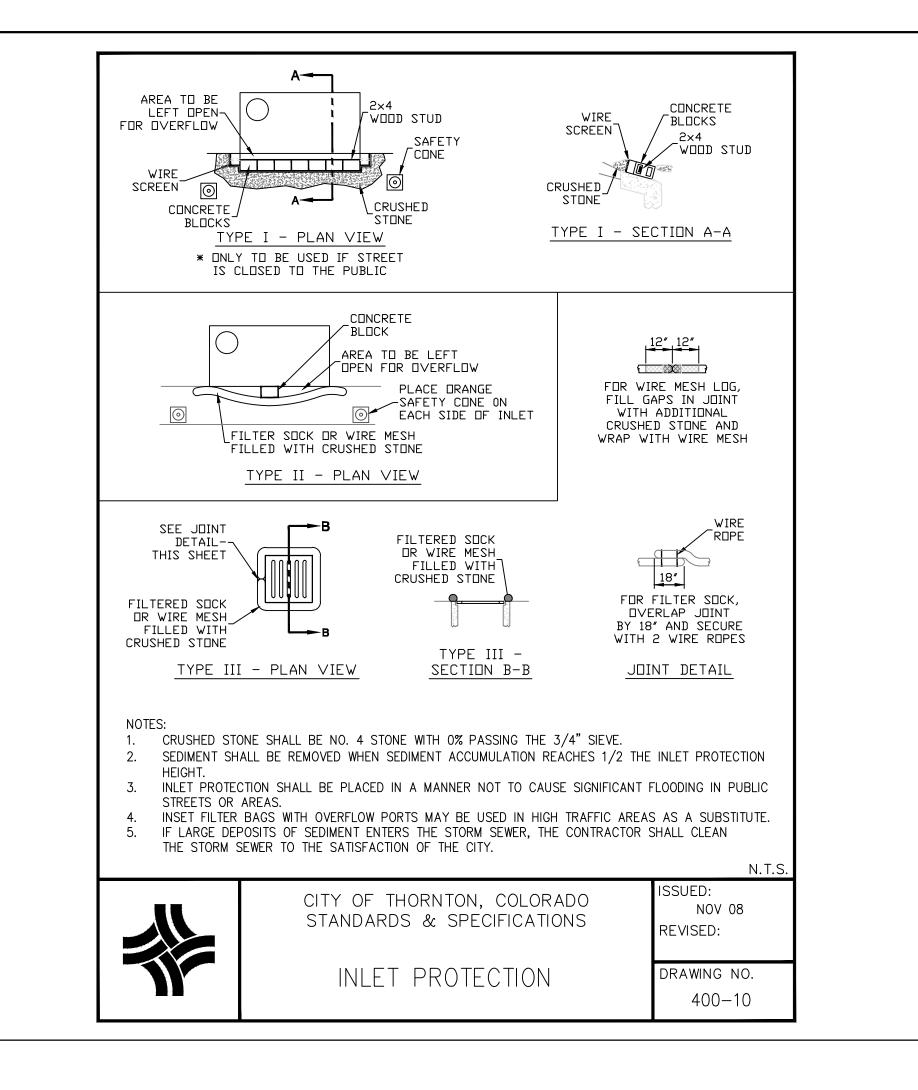
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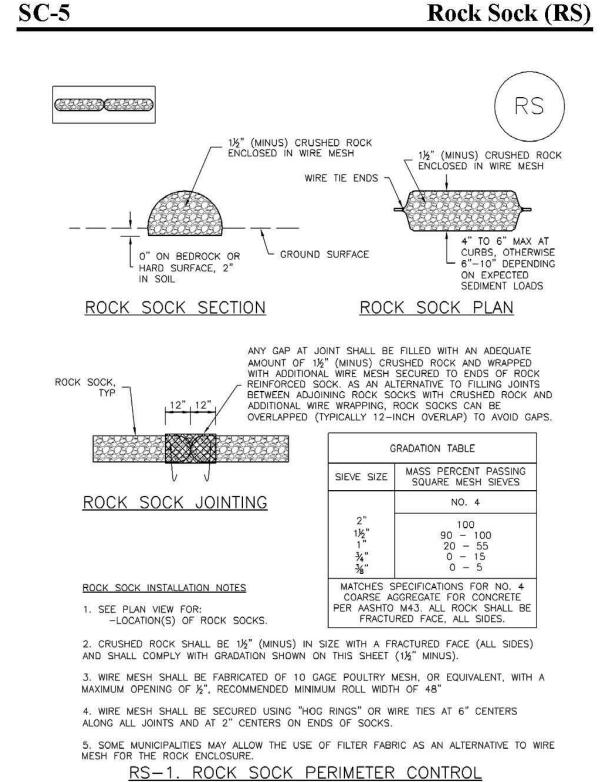
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RS-2

SC-5 Rock Sock (RS)

ROCK SOCK MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

4. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

5. SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS

6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

7. WHEN ROCK SOCKS ARE REMOVED. ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER NDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.





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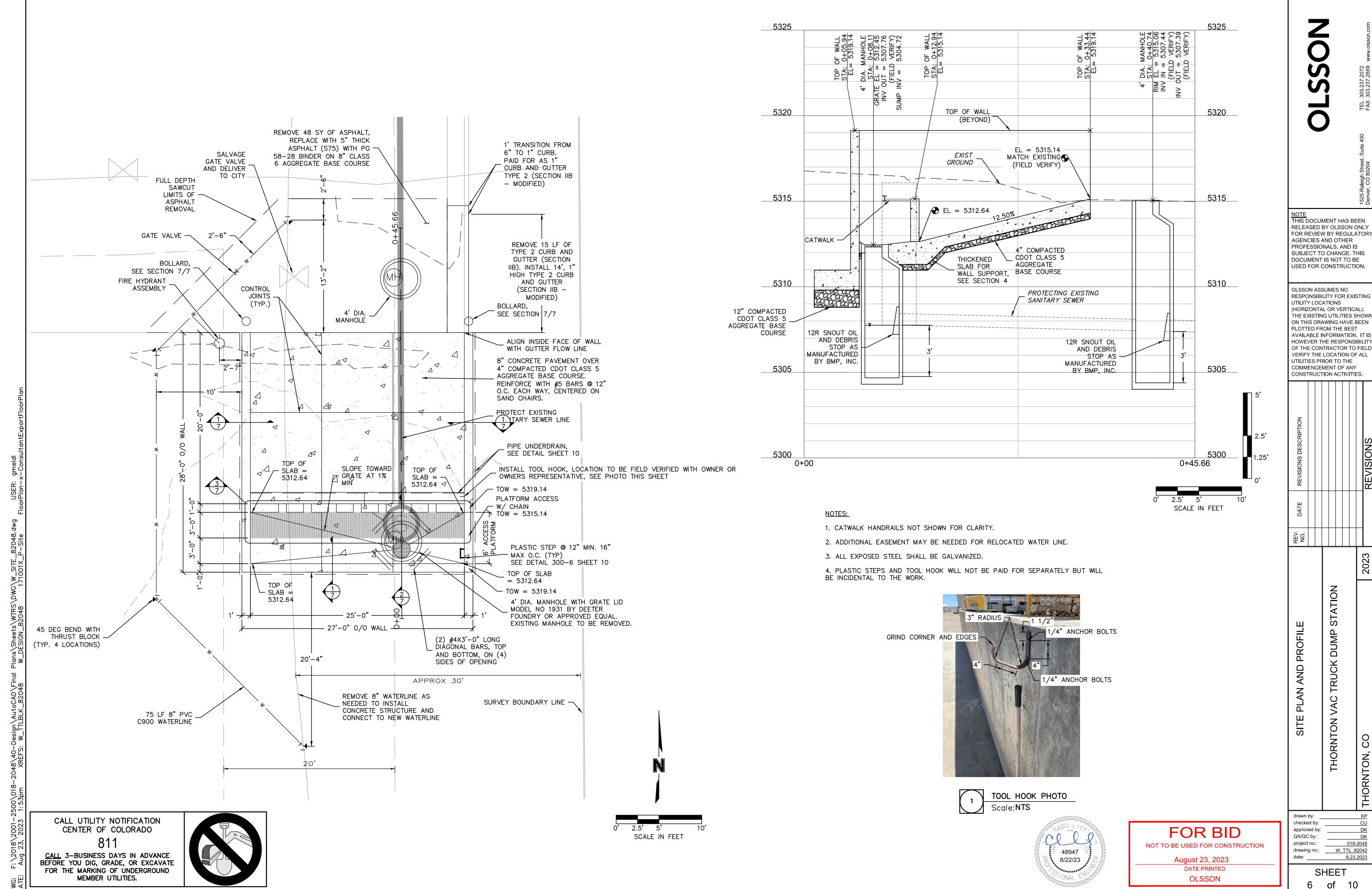
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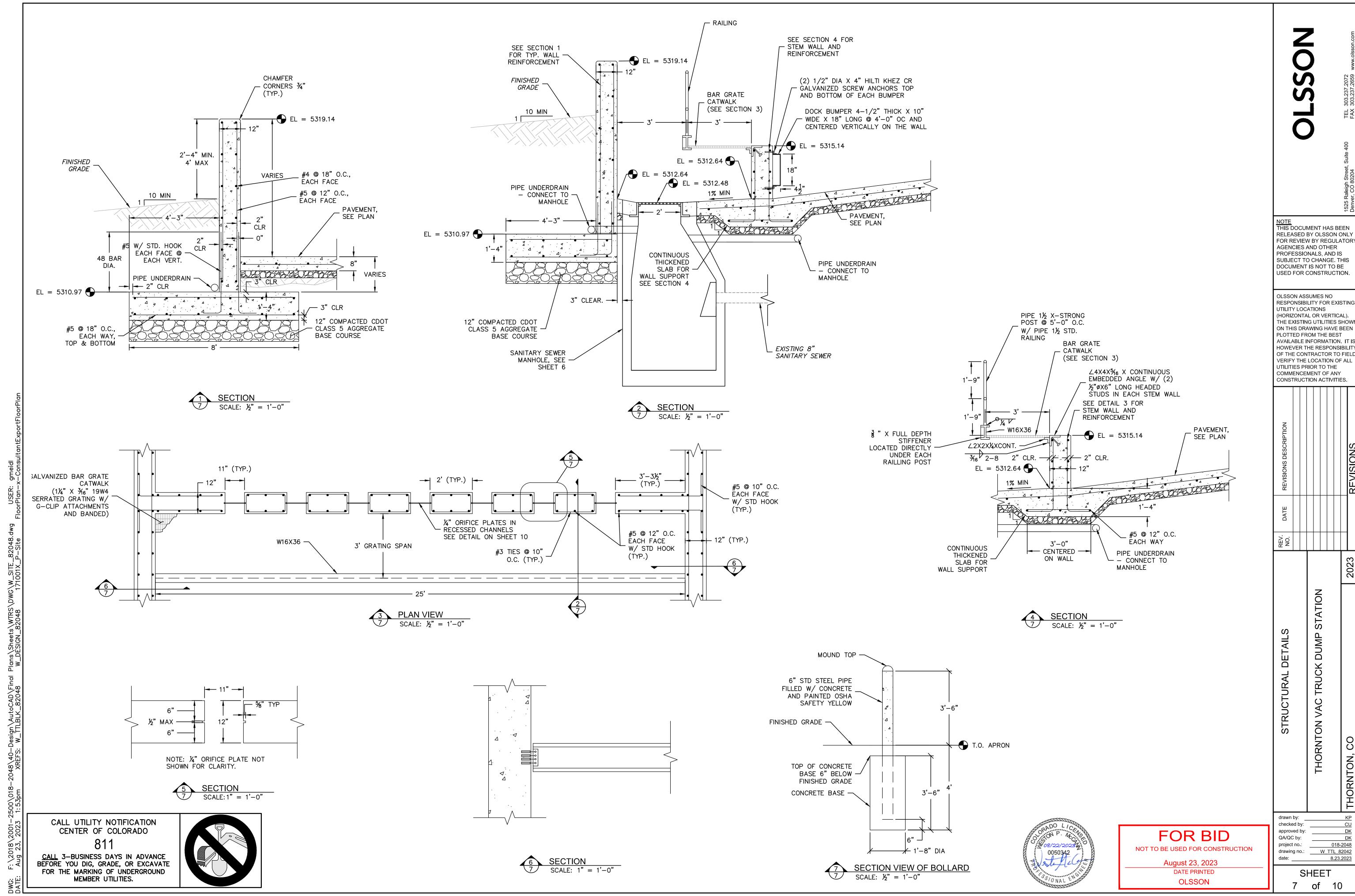
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November 2010



THE EXISTING UTILITIES SHOWN



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2. DEAD LOAD

REINFORCED CONCRETE 150 PCF

WIND

BASIC WIND SPEED (V) 115 MPH WIND EXPOSURE CATEGORY

4. SEISMIC

SEISMIC RISK CATEGORY SEISMIC SITE CLASS SEISMIC IMPORTANCE FACTOR 1.0 SEISMIC DESIGN CATEGORY SPECTRAL RESPONSE COEFF (S_S) 17.8% SPECTRAL RESPONSE COEFF (S₁) 5.7%

- 5. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH CIVIL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND
- 6. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
- 7. NO CHANGES IN SIZE OR DIMENSION OF STRUCTURAL MEMBER SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.

FOUNDATION AND SLAB ON GRADE

- 1. FOOTING DESIGNS ARE BASED ON A NET SOIL BEARING PRESSURE OF 1,500 PSF. BASED UPON THE GEOTECHNICAL REPORT BY OLSSON ASSOCIATES (OA JOB NO. 018-2048) DATED AUGUST 1, 2018. CONTRACTOR IS RESPONSIBLE FOR A MINIMUM 1.500 PSF SOIL BEARING PRESSURE TO BE OBTAINED PRIOR TO PLACEMENT OF THE FOUNDATION.
- 2. PROVIDE (2) #4 BAR X 3'-0" LONG, DIAGONALLY AT REENTRANT CORNERS, CENTER IN SLAB.
- 3. HORIZONTAL REINFORCING IN FOOTINGS AND STEMWALLS SHALL BE CONTINUOUS. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS.

CONCRETE AND REINFORCING STEEL

- 1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 301.
- 2. MINIMUM 28 DAY COMPRESSIVE STRENGTH (F'c) AND DENSITY SHALL BE:

CAST-IN-PLACE DUMP STATION SLABS, WALLS, AND FOUNDATIONS

- 3. ALL CAST-IN-PLACE CONCRETE TO BE AIR ENTRAINED.
- 4. REINFORCING STELL SHALL CONFORM TO ASTM A615, GRADE 60, U.N.O.
- 5. THE MINNIMUM COVER FOR REINFORCING STEEL SHALL BE, U.N.O.:

UNFORMED SURFACE IN CONTACT WITH GROUND FORMED SURFACES EXPOSED TO EARTH AND WEATHER #6 BARS AND LARGER #5 BARS AND SMALLER FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER: BEAMS AND COLUMNS SLABS, WALLS, AND JOISTS #14 AND #18 BARS #11 BARS AND SMALLER

- 6. LAP SPLICES ARE TO BE 48 BAR DIAMETERS, WITH A MINIMUM LAP OF 24".
- 7. STRUCTURAL CONCRETE SHALL BE MECHANICALLY CONSOLIDATED IN ACCORDANCE WITH ACI 309.

STRUCTURAL STEEL

- 1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL BUILDINGS" AND THE "CODE OF STANDARD PRACTICE" LATEST EDITIONS, EXCEPTAS MODIFIED IN THESE NOTES AND PROJECT SPECIFICATIONS.
- 2. STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRENGTH AND SPECIFICATIONS:

	YIELD	ASTM SPECIFICATION
WIDE FLANGE STEEL SHAPES	50 K SI	A992
STRUCTURAL STEEL TUBING	46 KSI	A500, GRADE B
STRUCTURAL STEEL PIPING	35 KSI	A53, TYPE E, GRADE B
MISCELLANEOUS STEEL	36 KSI	A36
ANCHOR BOLTS	36 KSI	F1554, GRADE 36
IEADED STUD ANCHORS	50 KSI	A108 (1010 TO 1020)

- WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE. ELECTRODES SHALL BE 70 KSI LOW
- 4. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ADEQUACY OF CONNECTIONS THAT ARE NOT DESIGNED OR FULLY DETAILED ON THE CONTRACT DOCUMENTS.
- 5. ALL STEEL SHALL BE GALVANIZED. STEEL SHALL BE THOROUGHLY CLEANED OF MILL SCALE IN ACCORDANCE WITH SPCC SP-6 BEFORE GALVANIZING.
- 6. DOCK BUMPERS:

FURNISH AND INSTALL RUBBER DOCK BUMPERS PER MANUFACTURER INSTRUCTIONS. RESILIENT RUBBER MATERIAL OF BUMPERS SHALL BE RUBBERIZED-FABRIC TRUCK TIRES CUT TO UNIFORM SIZE PADS AND PUNCHED TO RECEIVE 3/4" SUPPORTING RODS. ALL BUMPERS MUST BE 4.5" THICK (PROJECTION FROM DOCK), AND CLOSED WITH TWO 3" X 3" X 1/4" STRUCTURAL ANGLES UNDER APPROXIMATELY 1,500 LBS OF PRESSURE THE ANGLES ARE WELDED TO 3/4" RODS AT ONE END AND CLOSED WITH THREADED ROD AND NUT AT THE OTHER END.

THE ANCHOR LEG OF ANGLE IS TO EXTEND A MINIMUM OF 3" BEYOND THE RUBBER SURFACE AT EITHER END AND CONTAIN TWO 13/16" ANCHOR BOLT HOLES AS REQUIRED

THE FINISHED FOR EXPOSED METAL PARTS SHALL BE HOT DIPPED GALVANIZED.

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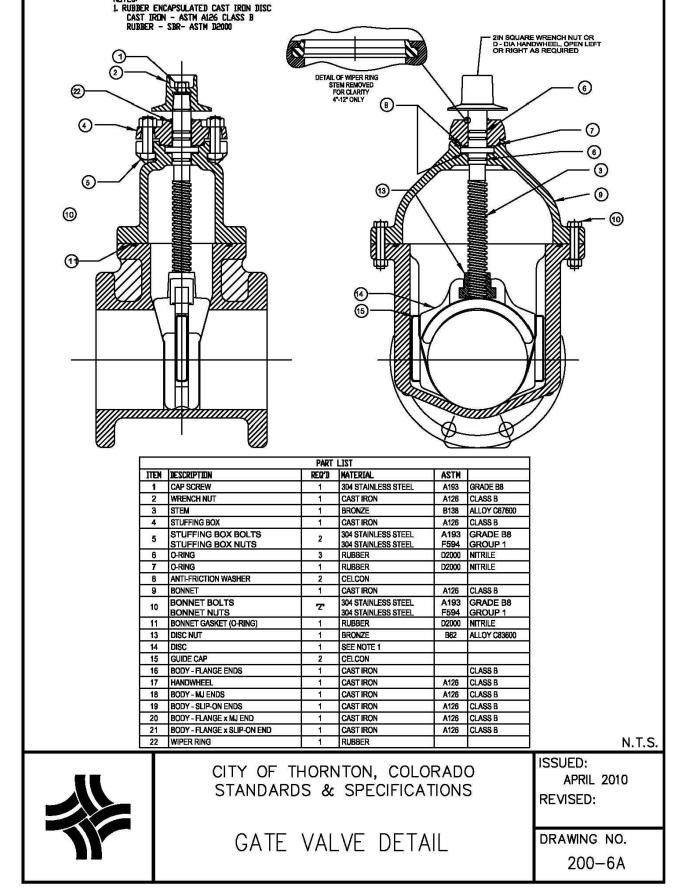
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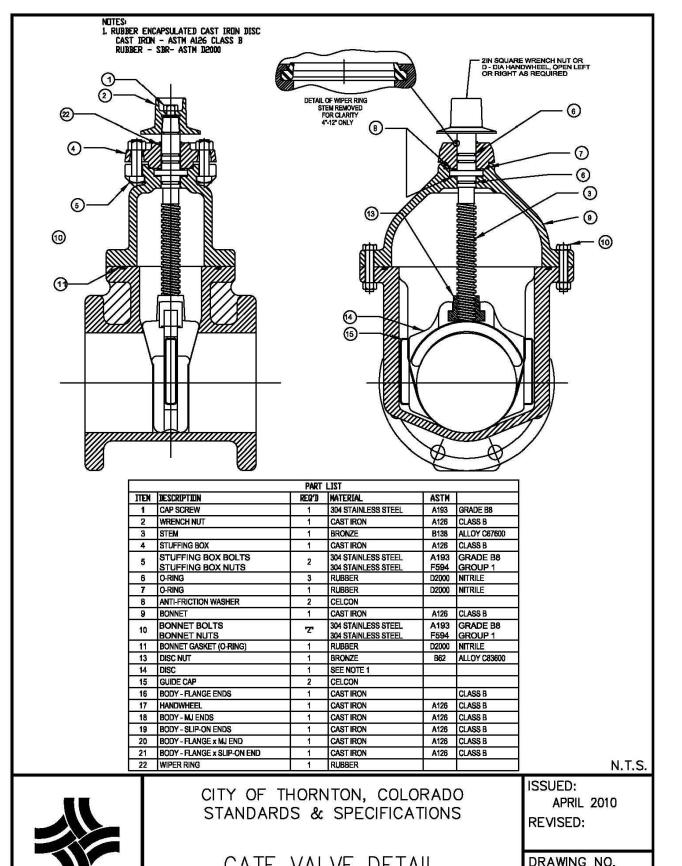
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CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

CALL UTILITY NOTIFICATION

CENTER OF COLORADO







VALVES SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH AWWA STANDARD C-500, "METAL-SEATED GATE VALVES FOR WATER", OR AWWA C-500 "RESILIENT-SEATED GATE VALVES, 3 THROUGH 12 NPS, FOR WATER AND SEWAGE SYSTEMS" WITH THE FOLLOWING ADDITIONAL REQUIREMENTS OR EXCEPTIONS VALVES MEETING AWWA STANDARD C-500 SHALL BE OF A MODIFIED WEDGE DISC CONSTRUCTION, COATED BOTH INSIDE AND OUT WITH A TOUGH, DURABLE EPOX TO PREVENT CORROSION, CAST IRON BODY, FULLY BRONZE MOUNTED WITH NON-RISING STEMS.

VALVES SHALL BE SUITABLE FOR FREQUENT OPERATION, AS WELL AS SERVICE INVOLVING LONG PERIODS OF INACTIVITY. THE OPERATING PRESSURE FOR VALVES SIX (6) INCHES THROUGH TWELVE (12) INCHES SHALL BE 200 PSI.

VALVE STEMS SHALL BE MADE OF BRONZE AND THREADED SO THAT VALVES SHALL OPEN BY TURNING TO THE LEFT (COUNTERCLOCKWISE). EACH VALVE SHALL BE FURNISHED WITH A TWO (2) INCH SQUARE OPERATING NUT. THE OPERATING NUT SHALL HAVE AN ARROW SHOWING THE DIRECTION OF OPENING AND THE WORD "OPEN" CAST ON THE NUT. THE STEM SEAL SHALL CONSIST OF TWO (2) O-RINGS; ONE OR BOTH POSITIONED ABOVE THE THRUST COLLAR WITH THE VALVE UNDER PRESSURE IN THE FULL OPEN POSITION.

BOLTS AND HEX NUTS USED ON THE BONNET OF THE VALVE SHALL BE THE MANUFACTURER'S STANDARD FABRICATED FROM A LOW ALLOY STEEL FOR CORROSIC

FLANGES SHALL BE SIZED AND DRILLED IN ACCORDANCE WITH ANSI B-16.1 CLASS 125 SPECIFICATIONS. FLANGES SHALL BE MACHINED IN A FLAT FACE O MACHINED TO A FLAT SURFACE WITH A SERRATED FINISH IN ACCORDANCE WITH AWWA STANDARD C-207 "STEEL PIPE FLANGES." THE COMPONENTS OF THE MECHANICAL JOINT SHALL CONFORM TO ANSI A-21.11 (AWWA STANDARD C-111). THE TEE-HEAD BOLTS AND HEXAGON NUTS SHALL BE FABRICATED FROM A HIGH STRENGTH, STAINLESS STEEL, OR AN APPROVED EQUAL.

AFTER APPROVED FACTORY ASSEMBLY, EACH VALVE SHALL BE GIVEN THE OPERATION AND HYDROSTATIC TESTS IN ACCORDANCE WITH THE REFERENCE SPECIFICATIONS. WEDGE DISC VALVES SHALL BE LIMITED TO THE FOLLOWING MANUFACTURERS OR APPROVED EQUIVALENT: WATEROUS SERIES-500, MUELLER-A-2360, KENSEA CLOW R/N. RESILIENT-SEATED GATE VALVES SHALL BE LIMITED TO THE AMERICAN-80 "CRS" GATE VALVE OR THE U.S. PIPE "METROSEAL" GATE VALVE.

THE MANUFACTURER SHALL FURNISH A CERTIFIED STATEMENT THAT THE INSPECTION AND SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE STANDARD(S) HEREIN SPECIFIED. A COPY OF THE CERTIFICATION SHALL BE SENT TO THE DEVELOPMENT ENGINEERING MANAGER UPON REQUEST.

CORROSION PROTECTION SHALL BE COVERED IN SUBSECTION 204.2 OF THESE STANDARDS AND SPECIFICATIONS. SHALL BE SET IN SUCH A MANNER THAT THE VALVE STEMS ARE PLUMB. VALVES SHALL BE LOCATED AT POINTS AS SPECIFIED IN SUBSECTION 203.8 OF THESE STANDARDS AND SPECIFICATIONS.

VALVE BOX PARTS SHALL BE MANUFACTURED BY TYLER, SERIES 6860 OR AN APPROVED EQUIVALENT MANUFACTURER AND MADE OF GRAY CAST IRON, BUFFALO TYPE WITH NO. 160 OVAL BASE. A FIVE AND ONE-QUARTER (5 ½) INCH SCREW-TYPE SHAFT SHALL BE ADJUSTABLE FROM 45 INCHES TO 66 INCHES. VALVE BOX LIDS SHALL BE MARKED WITH THE WORD "WATER" AND SHALL HAVE A LIP OR FLANGE EXTENDING INTO THE VALVE BOX SHAFT. NO SLIP-TYPE BOXES SHALL BE ALLOWED. THE VALVE BOX SHALL BE OF A DESIGN WHICH SHALL NOT TRANSMIT SHOCK OR STRESS TO THE VALVE AND SHALL BE CENTERED AND PLUMB OVER THE OPERATING NUT OF THE VALVE WITH THE BOX COVER FLUSH WITH THE SURFACE OF THE PAVEMENT. IN NON-PAVED AREAS, A 24 INCH SQUARE CONCRETE COLLAR IS REQUIRED AROUND VALVE BOX COVER AS PER THE STANDARD DETAIL IN SECTION 200 OF THESE STANDARDS AND SPECIFICATIONS. IN UNIMPROVED ROADWAYS THE VALVE BOX COVER SHALL BE SET SIX (6) INCHES BELOW FINAL GRADE WITH A MARKER POST INDICATING THE LOCATION AS PER THE STANDARD DETAIL DRAWING.

THE MANUFACTURER SHALL FURNISH A CERTIFIED STATEMENT THAT THE INSPECTION AND SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE STANDARD(S) HEREIN SPECIFIED. A COPY OF THE CERTIFICATION SHALL BE SENT TO THE DEVELOPMENT ENGINEERING MANAGER UPON REQUEST.

FOR VALVE BOXES ALONG FIRE SPRINKLER LINES THE LID SHALL BE LABELED "FIRE".

CORROSION PROTECTION SHALL BE COVERED IN SUBSECTION 204.2 OF THESE STANDARDS AND SPECIFICATIONS.

FINAL ELEVATION OF VALVE BOXES SHALL BE LEFT TO THE DISCRETION OF THE DEVELOPMENT ENGINEERING MANAGER

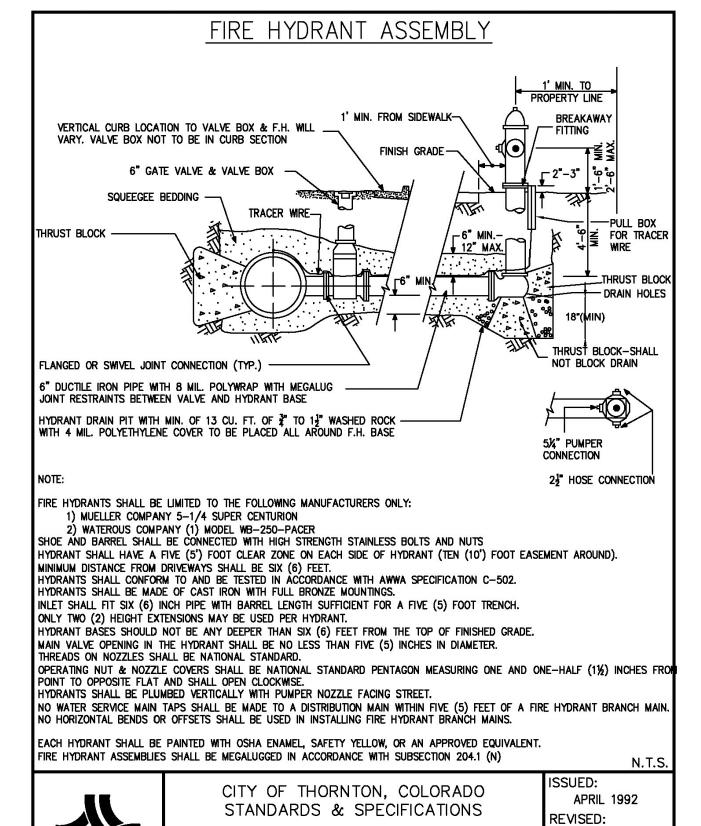
VALVE BOXES WHICH HAVE SHIFTED DURING BACKFILL OPERATIONS AND ARE NO LONGER PLUMB, SHALL BE RE-EXCAVATED AND RE-ALIGNED TO TH SATISFACTION OF THE DEVELOPMENT ENGINEERING MANAGER.

FOR GREENBELT AREA APPLICATION, REFER TO DETAIL 200-7

CITY OF THORNTON, COLORADO STANDARDS & SPECIFICATIONS GATE VALVE AND VALVE BOX

APRIL 2010 REVISED:

DRAWING NO. 200-6B

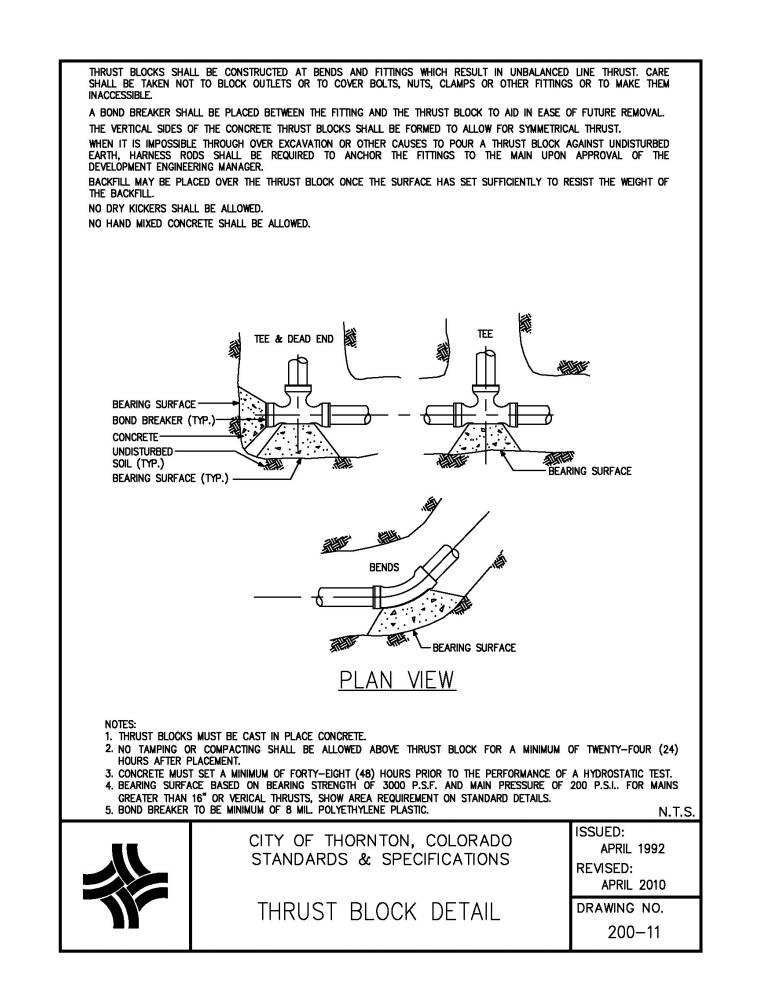


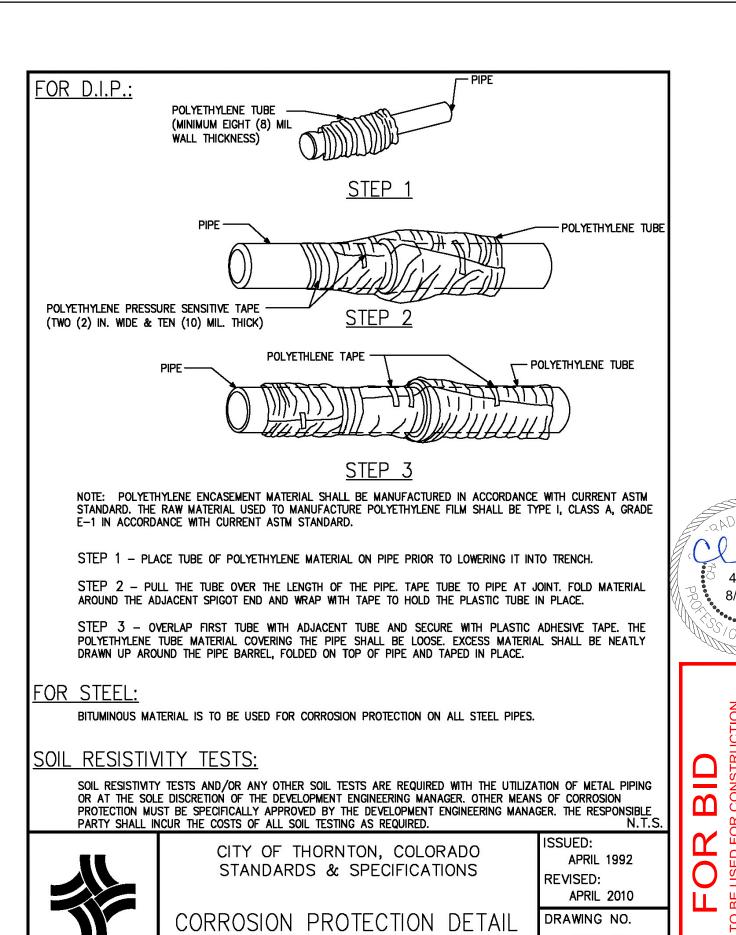
FIRE HYDRANT ASSEMBLY DETAIL

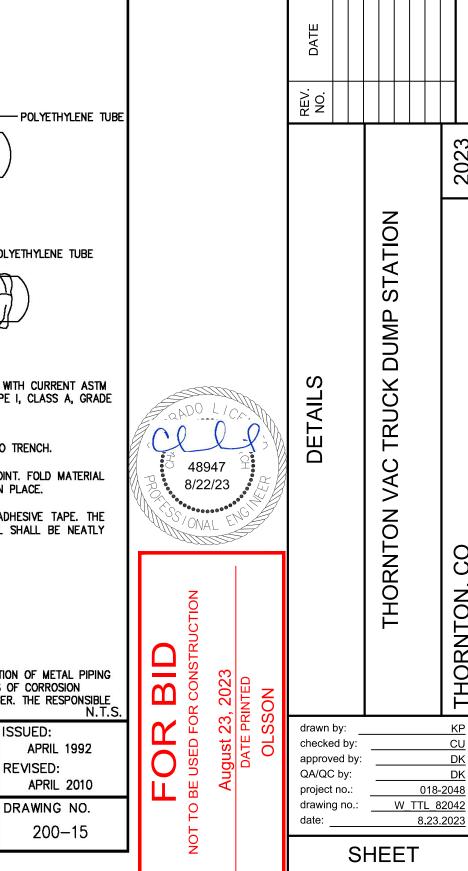
APRIL 2010

200-10

DRAWING NO.

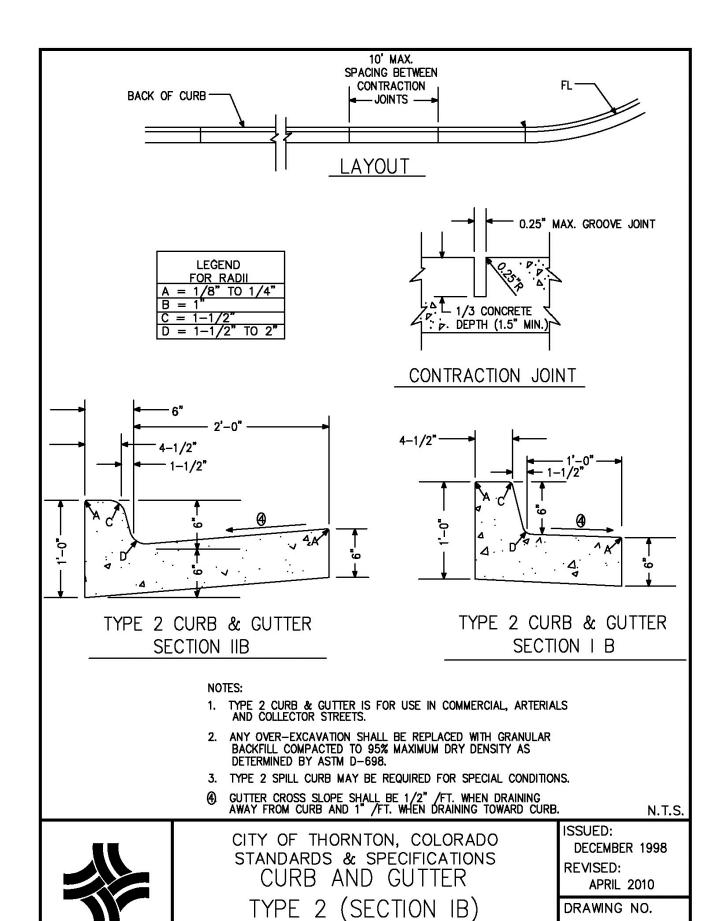






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RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL OR VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT HOWEVER THE RESPONSIBILIT OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.



TYPE 2 (SECTION IIB)

500-8A

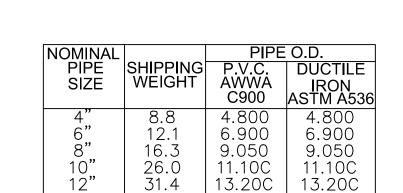
MECHANICAL JOINT RESTRAINING GLANDS FOR P.V.C. OR D.I. PIPE.

GLANDS SHALL BE COLOR CODED: P.V.C — C 900 RED DUCTILE IRON BLACK

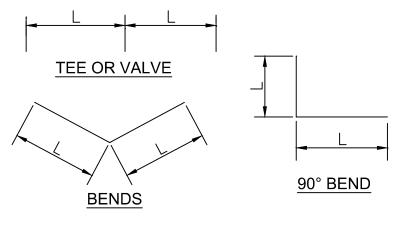
D.I.P. OR C-900

P.V.C. GLANDS 2000 MEG-A-LUG OR 1500 UNI-FLANGE OR APPROVED EQUAL D.I. GLANDS 1100 MEG-A-LUG OR 1400 UNI-FLANGE OR APPROVED EQUAL

FOR INSTALLATION ON C-900 PVC OR DUCTILE IRON PIPE USE AS RECEIVED AND INSTALL PER INSTRUCTIONS.



(D.I.P. OR C—900)



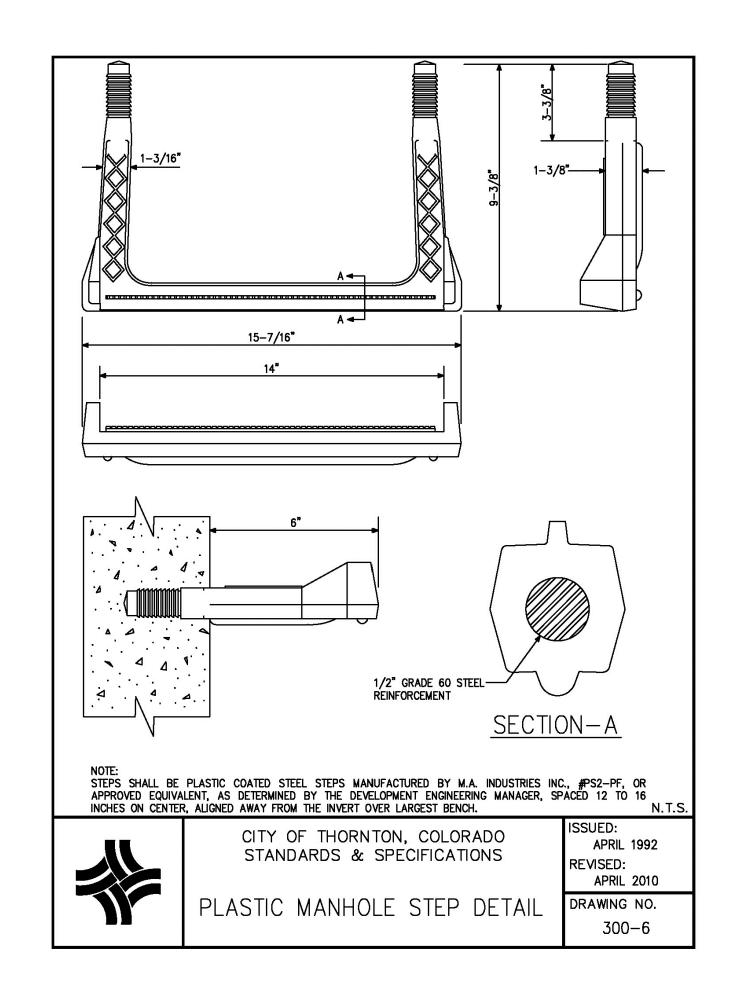
ROD DIAMETER, GRADE AND LENGTH OF RESTRAINED PIPE

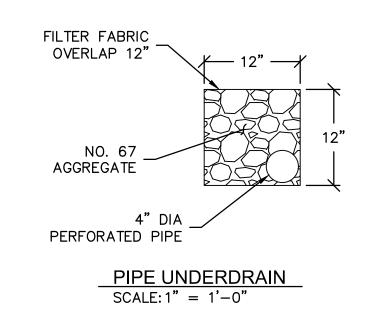
PIPE SIZE	4"			6"			8"		
FITTING	О	L	G	D	L	G	D	L	G
PLUG, TEE OR 90° BEND	3/4"	30'	M.S.	3/4"	45'	M.S.	3/4"	60'	M.S.
45° BEND	3/4"	9	M.S.	3/4"	13'	M.S.	3/4"	18'	M.S.
22-1/2° BEND	3/4"	1'	M.S.	3/4"	5	M.S.	3/4"	6'	M.S.
11-1/4° BEND		_	_	_	_	_	3/4"	3'	M.S.

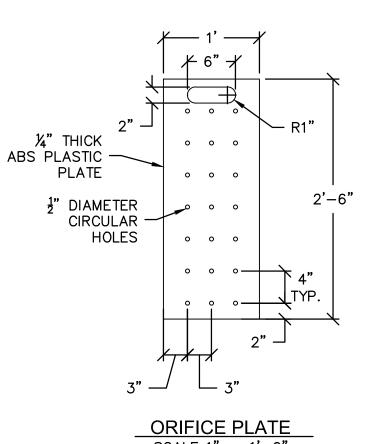
- LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM BENDS.
- CLAMPS AND RODS SHALL BE EXTENDED TO NEXT PIPE.

 D = DIAMETER, L = LENGTH, G = GRADE, M.S. = MILD STEEL, H.S. = HIGH STRENGTH STEEL.
- MINIMUM 6 0' OF CROUND COVER IS REQUIRED
- 4. MINIMUM 6.0' OF GROUND COVER IS REQUIRED. 5. BASED ON 200 P.S.I., INTERNAL PRESSURE.
- . M.S.=MILD STEEL ROD, A.S.T.M. STANDARD DESIGNATION A-36.
- H.S.=HIGH STRENGTH ROD, A.S.T.M. STANDARD DESIGNATION A-193, GRADE B-7.
- 3. NUTS SHALL BE A.S.T.M., STANDARD DESIGNATION A-307, GRADE A OR B, HEXAGON HEAVY SERIES.
- 9. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER, AND IS NOT NECESSARILY THE LENGTH OF THE RODS.
- 10. LENGTH OF RESTRAINED PIPE TABLE IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.

DETAIL - MECHANICAL JOINT RESTRAINING RING AND RODDING NOT TO SCALE









FOR BID

NOT TO BE USED FOR CONSTRUCTION

August 23, 2023

DATE PRINTED

OLSSON

OF SOOI

1525 Raleigh Street, Suite

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<u> </u>					2023
REV. NO					
DATE					
REVISIONS DESCRIPTION					REVISIONS

THORNTON VAC TRUCK DUMP STATION

drawn by: KP
checked by: CU
approved by: DK
QA/QC by: DK
project no.: 018-2048
drawing no.: W TTL 82042

SHEET 10 of 10