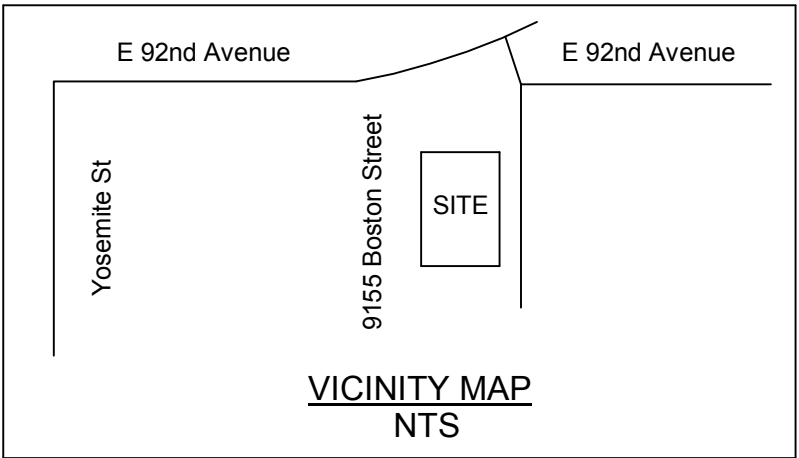


# CRYSTAL PACKAGING, INC.

## Request for Conditional Use Permit (CUP)

### 9155 BOSTON STREET HENDERSON, CO 80640

Wardel Industrial District, Lot 2  
Parcel 0172122006008



Land Use Summary				
Total and Proposed Building and Parking Areas				
Item	Existing (Sq. Ft.)	Proposed (Sq. Ft.)	% +/-	Note
Building Internal Sq. Ft.	63,744	No change	0	Approved Permit is for Tenant Finish with no change in structure footprint or elevations.
Building Occupancy, S-2	As above	46,996	(26%)	
Building Occupancy, H-3	None	16,748	100%	
Parking	10,530	No change	0	
Zoning	I-3			
Building Lot Coverage	70,915=23.53%	No change	0	Includes Dock Bay Overhang.
Lot Coverage-Landscape	27,063=8.98%	No change	0	
Lot Coverage-Asphalt Paving	43,476=14.42%	No change	0	
Lot Coverage-Concrete Coverage	49,739=16.50%	No change	0	
Rail Area Coverage	17,615=5.84%	No change	0	This area may change with a rail expansion in the future. See Site Plan for details.
Gravel/Soil Parking Coverage	39,793=13.20%	0	(100%)	
Crushed Asphalt Parking Coverage	0	39,793=13.20%	100%	Area to be used for working space for temporarily parking bottle and box trailers.
Unimproved Coverage	55,871=17.53%	No change	0	This area may change with a rail expansion in the future.
Lot Total	301,435	No change	0	
Lot Coverage	208,807	248,601	13%	Lot coverage includes the addition of the crushed asphalt parking area.
Estimated # of Employees	20	50	250%	
Number of Fixed Seats	0	0	0	

Off-Street Parking Calculations				
Area	Sq. Ft	Specific Use Type	Rate	Minimum Off-Street Parking
South Warehouse Building	43,846	Production, ...handling of goods	1/1000 sq. ft	43.846
North <u>Windshield Wash</u> Building	16,748	As above	As above	16.748
Office	1,800	Office	1/300 sq. ft.	6
Lab	1,350	Testing Laboratory	1/500 sq. ft.	2.7
Per Table VIII in LDC Sec. 21-7233, Total Off-Street Spaces is 69.294.				

### Sheet Index - CUP

- 1 Cover Sheet (Updated 11/12/19)
- 2 CS101\_191112 - Site and Utility Plan
- 3-10 ESC Plan C3.0 - C3.6
- 11-13 Landscape Plan L0.0, L1.09 and L1.1
- 15-17 Irrigation Plan IR 1.1 - 1.3

11/12/2019

Above Ground Storage Tank Development Summary		
Current Tank Location	11,000 Gal. fiberglass AST	None Present
Future Tank	As above, stainless steel with foundation modification.	5,000 Gal. stainless steel with foundation.
Increase in volume	0 Gal.	5,000 Gal.
All other ASTs remain unchanged.		

#### LANDSCAPE CALCULATIONS

AREAS OF REQUIRED LANDSCAPING	AREA	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	16,555 SF	1 TREE PER 1200 SF OF LANDSCAPING + 25% UPGRADE	18 TREES	18 TREES
REQUIRED SHRUBS	16,555 SF	1 SHRUB PER 300 SF OF LANDSCAPING + 25% UPGRADE	69 SHRUBS	69 SHRUBS

PARKING LOT REQUIREMENTS	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	1 TREE PER 30 LF OF PARKING LOT DRIVEWAY	280 LF TOTAL 10 TREES REQUIRED	10 TREES (8 PROPOSED 2 EXISTING)

RIGHT OF WAY REQUIREMENTS	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	1 TREE PER 40 LF OF SIDEWALK LENGTH	370 LF TOTAL 10 TREES REQUIRED	12 TREES (8 PROPOSED 4 EXISTING)

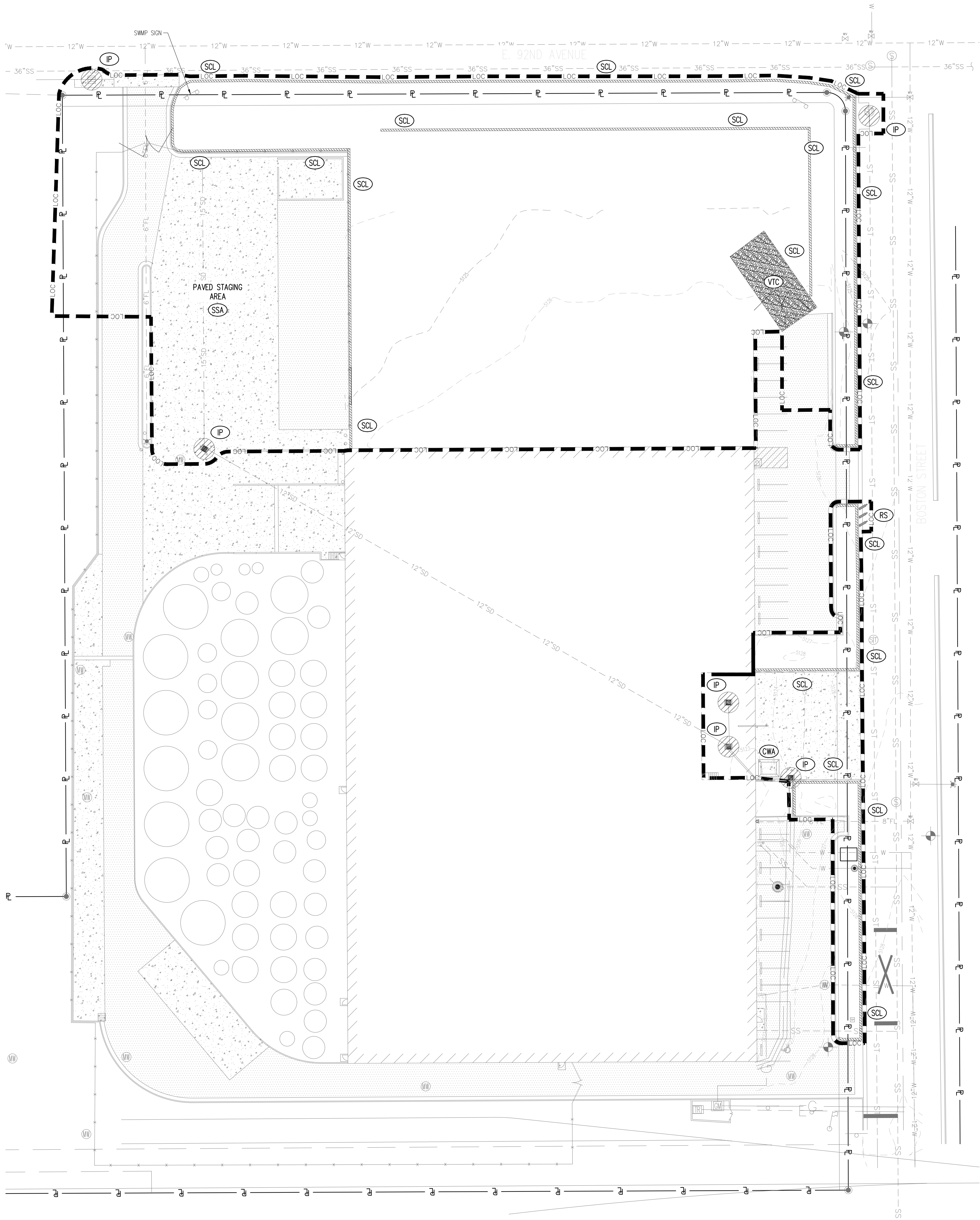
LANDSCAPE REQUIREMENT	REQUIREMENT AREA / %	REQUIREMENT MET
PLANTING COVERAGE	75% OF PLANTING AREA COVERED (WITHIN 5 YEARS)	X
TURF	50% MAXIMUM OF PLANTING TO BE TURF	X (NO TURF - 20% SEED)
MULCH	2 TYPES OF MULCH REQUIRED	X

no.	date	by	ckd	description	Landscape Architect:	Civil engineer:	Owner:
		S			<b>Galloway</b>	<b>BURNS McDONNELL</b>	<b>Crystal</b>
					6162 S. Willow Drive, Suite 320 Greenwood Village, CO 80111 303.770.8864 GallowayUS.com	9785 MAROON CIRCLE SUITE 400 CENTENNIAL, CO 80112	9155 BOSTON STREET HENDERSON, CO 80640

PREPARED BY :

CITY COUNCIL CERTIFICATE:  
Approved by the City Council of Commerce City, this  
\_\_\_\_ day of \_\_\_\_\_, A.D. \_\_\_\_\_  
City Signature \_\_\_\_\_





EROSION CONTROL LEGEND

- Property Line
- Existing Storm Sewer
- Limits of Construction
- Vehicle Tracking Control
- Inlet Protection
- Rock Socks
- Sediment Control Log
- Portable Toilet
- Stabilized Staging Area
- Concrete Washout Area

NOTE:  
1. THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.  
2. SEDIMENT CONTROL LOG AND INLET PROTECTION NOT SHOWN TO BE REMOVED ON THIS PLAN MUST REMAIN THROUGH FINAL STABILIZATION. INSPECTIONS MUST CONTINUE ON A MONTHLY BASIS THROUGH FINAL PERMIT TERMINATION.



6162 S. Willow Drive, Suite 320  
Greenwood Village, CO 80111  
303.770.8884  
GallowayUS.com

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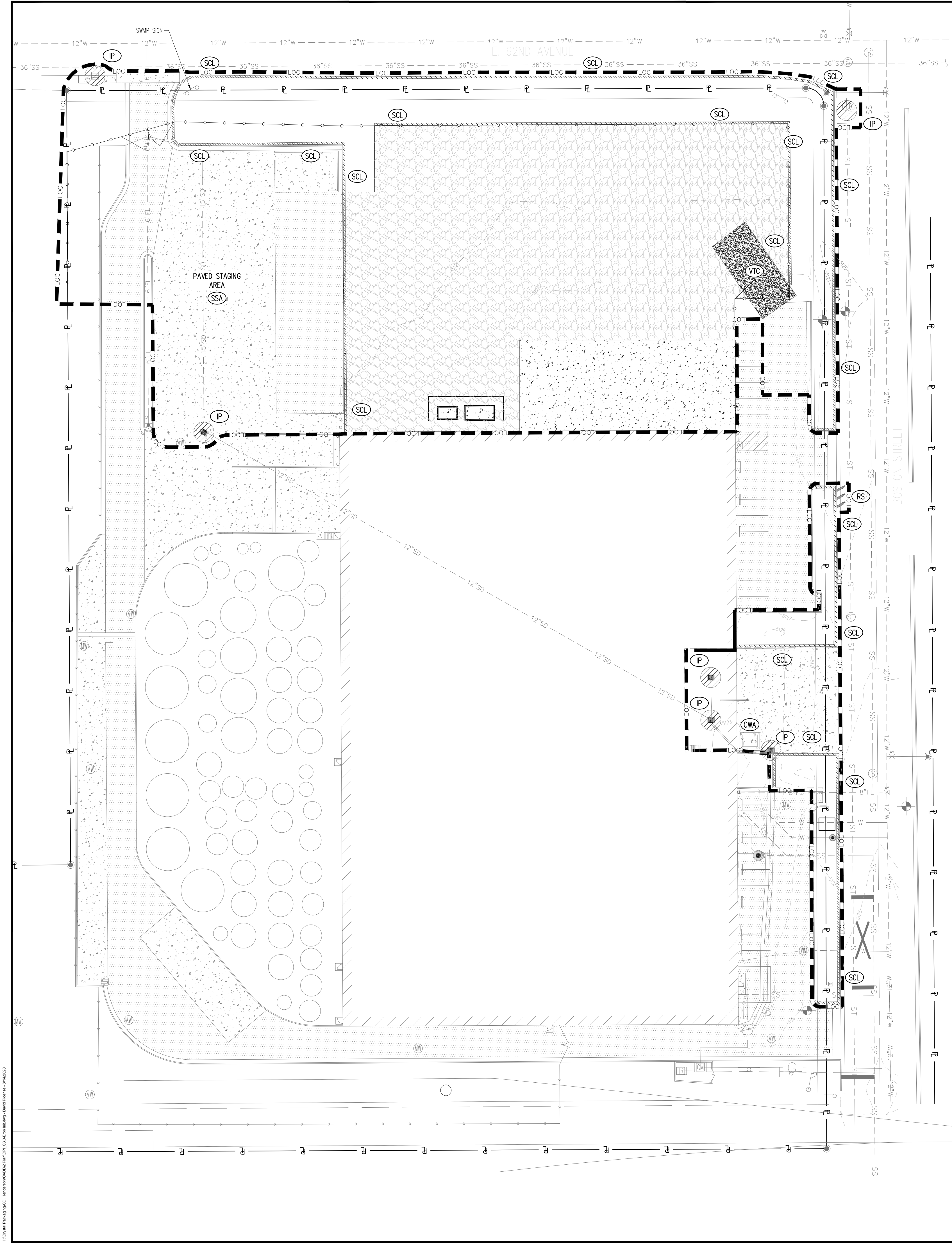
CRYSTAL PACKAGING  
CONDITIONAL USE PERMIT - LANDSCAPE PLANS  
SE CORNER OF BOSTON STREET & E. 92ND AVENUE  
HENDERSON, COLORADO

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Project No:	CP1000001
Drawn By:	EVR
Checked By:	ARK
Date:	03/20/2019

EROSION CONTROL  
PLAN - INITIAL

C3.0



EROSION CONTROL LEGEND

- P — PROPERTY LINE
- ST — EXISTING STORM SEWER
- ▨ PROPOSED ASPHALT PAVEMENT
- ▨ PROPOSED CRUSHED ASPHALT
- LOC --- LIMITS OF CONSTRUCTION
- ▨ VTC VEHICLE TRACKING CONTROL
- IP INLET PROTECTION
- RS ROCK SOCKS
- SCL SEDIMENT CONTROL LOG
- PT PORTABLE TOILET
- SSA STABILIZED STAGING AREA
- ▨ LS LANDSCAPING
- SM PERMANENT SEEDING AND MULCH
- CWA CONCRETE WASHOUT AREA

NOTE:  
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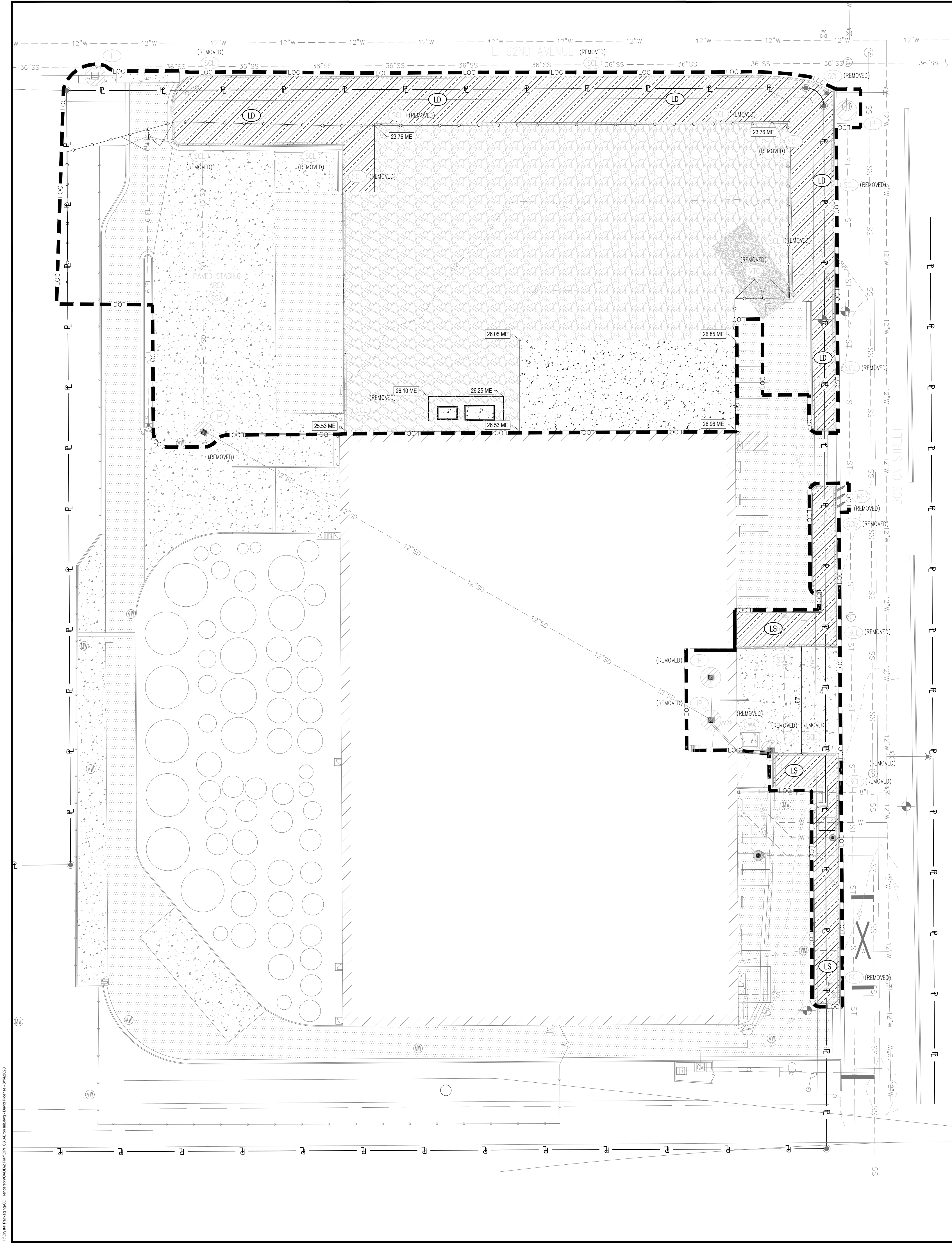
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Project No:	CP1000001
Drawn By:	EVR
Checked By:	ARK
Date:	03/20/2019

EROSION CONTROL  
PLAN - INTERIM

C3.1



EROSION CONTROL LEGEND

- PROPERTY LINE
- EXISTING STORM SEWER
- PROPOSED ASPHALT PAVEMENT
- PROPOSED 4" THICK CRUSHED ASPHALT
- PROPOSED CONCRETE PAD
- LIMITS OF CONSTRUCTION
- VEHICLE TRACKING CONTROL
- INLET PROTECTION
- ROCK SOCKS
- SEDIMENT CONTROL LOG
- PORTABLE TOILET
- STABILIZED STAGING AREA
- LANDSCAPING
- CONCRETE WASHOUT AREA

GRADING LEGEND

- PROPOSED SPOT ELEVATION
- MATCH EXISTING ELEVATION

NOTE:

- THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.
- SEDIMENT CONTROL LOG AND INLET PROTECTION NOT SHOWN TO BE REMOVED ON THIS PLAN MUST REMAIN THROUGH FINAL STABILIZATION. INSPECTIONS MUST CONTINUE ON A MONTHLY BASIS THROUGH FINAL PERMIT TERMINATION.
- ADD 5100 TO ALL SPOT ELEVATIONS.

Galloway

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CONDITIONAL USE PERMIT - LANDSCAPE PLANS

SE CORNER OF BOSTON STREET & E. 92ND AVENUE  
HENDERSON, COLORADO

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Project No:	CP1000001
Drawn By:	EVR
Checked By:	ARK
Date:	03/20/2019

GRADING AND EROSION  
CONTROL PLAN - FINAL

C3.2

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Project No: CP100001  
Drawn By: EVR  
Checked By: ARK  
Date: 03/20/2019

EROSION CONTROL  
DETAILS

**C3.3**

### EROSION AND SEDIMENT CONTROL (ESC) GENERAL NOTES

- GRADING PLAN IS FOR ROUGH GRADING ONLY. CHANGES MAY BE NECESSARY TO BRING PLANS INTO CONFORMANCE WITH APPROVED DRAINAGE AND SITE PLAN.
- A WATER TRUCK SHALL BE KEPT ON-SITE TO CONTROL WIND EROSION AND DUST.
- ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE PROPERTY LIMITS DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR.
- NO GRADING SHALL TAKE PLACE IN ANY DELINEATED FLOOD HAZARD AREA UNTIL THE FINAL DRAINAGE PLAN HAS BEEN APPROVED AND ALL APPROPRIATE PERMITS HAVE BEEN OBTAINED.
- ANY CONSTRUCTION DEBRIS OR MUD TRACKING IN THE PUBLIC RIGHT-OF-WAY RESULTING FROM THIS DEVELOPMENT WILL BE REMOVED IMMEDIATELY BY THE CONTRACTOR UPON WRITTEN NOTICE BY THE CITY. FAILURE TO REMOVE THE MUD OR DEBRIS BY THE CONTRACTOR WITHIN 24 HOURS SHALL CAUSE THE CITY TO STOP ALL WORK UNTIL THE SITUATION IS RESOLVED.
- WHEN REQUIRED, A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE), WATER QUALITY DIVISION, STORMWATER DISCHARGE PERMIT SHALL BE OBTAINED AND A COPY SHALL BE SUBMITTED TO THE CITY OF COMMERCE CITY DEPARTMENT OF PUBLIC WORKS.
- AREAS DISTURBED BY GRADING SHALL BE MULCHED AND RESEEDED WITH NATIVE VEGETATION OR AS APPROVED ON THE PLAN.
- THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR SAFETY CONDITIONS ON AND ADJACENT TO THE SITE 24 HOURS A DAY, SEVEN DAYS A WEEK.
- CONTRACTOR SHALL CONTACT UTILITY NOTIFICATION CENTER FOR THE LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. (811 or 1-800-922-1987)
- THE CITY ENGINEER'S SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE CITY OF COMMERCE CITY PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH THE CITY'S STORMWATER QUALITY CONTROL CRITERIA. THE CITY ENGINEER, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.
- THE ADEQUACY OF THIS ESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER.
- ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY, COMMERCE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE APPROVED PLANS.
- THE PLACEMENT OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN ACCORDANCE WITH THE CITY APPROVED PLANS.
- ANY VARIATION IN MATERIAL, TYPE OR LOCATION OF EROSION AND SEDIMENT CONTROL BMPs FROM THE CITY APPROVED PLANS WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF THE CITY OF COMMERCE CITY ENGINEERING DIVISION.
- AFTER THE ESC PLAN HAS BEEN APPROVED, THE CONTRACTOR MAY INSTALL THE INITIAL-STATE EROSION AND SEDIMENT CONTROL BMPs INDICATED ON THE ACCEPTED ESC PLAN.
- THE FIRST BMP TO BE INSTALLED ON THE SITE SHALL BE CONSTRUCTION FENCE, MARKERS, OR OTHER APPROVED MEANS OF DEFINING THE LIMITS OF CONSTRUCTION, INCLUDING CONSTRUCTION LIMITS ADJACENT TO STREAM CORRIDORS AND OTHER AREAS TO BE PRESERVED.
- AFTER INSTALLATION OF THE INITIAL-STATE EROSION AND SEDIMENT CONTROL BMPs, THE PERMITTEE SHALL CALL THE PUBLIC WORKS AT 303-289-8150 TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE A MINIMUM OF THREE BUSINESS DAYS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.
- THE ESC MANAGER SHALL BE CERTIFIED IN STORMWATER MANAGEMENT AND EROSION CONTROL AND DOCUMENTATION SHALL BE PROVIDED TO THE CITY.
- THE OWNER OR OWNER'S REPRESENTATIVE, THE ESC MANAGER, THE GENERAL CONTRACTOR, AND THE GRADING SUBCONTRACTOR, IF DIFFERENT FROM THE GENERAL CONTRACTOR, MUST ATTEND THE PRECONSTRUCTION MEETING. IF ANY OF THE REQUIRED PARTICIPANTS FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE INSTALLATION OF THE INITIAL BMPs ARE NOT APPROVED BY THE CITY ESC INSPECTOR, THE APPLICANT WILL HAVE TO PAY A RESPECIFICATION FEE. ADDRESS ANY PROBLEMS WITH BMP INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION. THE CITY STRONGLY ENCOURAGES THE APPLICANT TO HAVE THE ENGINEER OF RECORD AT THE PRECONSTRUCTION MEETING.
- CONSTRUCTION SHALL NOT BEGIN UNTIL THE CITY ESC INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL BMPs AND THE GRADING PERMIT IS OBTAINED FROM PUBLIC WORKS.
- THE ESC MANAGER SHALL STRICTLY ADHERE TO THE APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE CITY OF COMMERCE CITY ENGINEERING DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE ENGINEERING DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED IN ANY ADDITIONAL AREAS OF CONSTRUCTION.
- NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.
- A COPY OF THE GRADING PERMIT AND APPROVED PLANS SHALL BE ON SITE AT ALL TIMES.
- THE ESC MANAGER SHALL BE RESPONSIBLE FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH THE CITY FOR ALL MATTERS PERTAINING TO THE GRADING PERMIT. THE ESC MANAGER SHALL BE PRESENT AT THE SITE THE MAJORITY OF THE TIME AND SHALL BE AVAILABLE THROUGH A 24-HOUR CONTACT NUMBER.
- THE ESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED ONTO ADJACENT PAVED AREAS, PAVED AREAS, INCLUDING STREETS, ARE TO BE KEPT CLEAN THROUGHOUT BUILD-OUT AND SHALL BE CLEANED WITH A STREET SWEEPER OR SIMILAR DEVICE AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE CITY'S ESC INSPECTOR. STREET WASHING IS NOT ALLOWED. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
- THE APPROVED PLANS MAY REQUIRE CHANGES OR ALTERATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE THROUGH THE CITY APPROVED ACCESS POINTS. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL ACCESS POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE COMMERCE CITY ENGINEERING DIVISION.
- THE ESC MANAGER SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER AND COMMERCE CITY ENGINEERING DIVISION FOR ANY PROPOSED CHANGES.
- NO PERMANENT EARTH SLOPES GREATER THAN 3:1 SHALL BE ALLOWED.
- ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE ESC MANAGER. THE ESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
- SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY THE COMMERCE CITY ENGINEERING DIVISION.
- ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, INCLUDING BUT NOT LIMITED TO, SURFACE WATER, GROUND WATER AND DRY GULLIES OR STORM SEWER LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE CDPEH PER CRS 25-6-401, AND COMMERCE CITY. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT AS WELL AS THE CDPEH. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER.
- THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.
- COMMERCE CITY DOES NOT ALLOW HAY BALES AS A FORM OF EROSION AND SEDIMENT CONTROL.
- ONCE THE SITE HAS REACHED FINAL STABILIZATION, A FINAL INSPECTION SHALL BE SCHEDULED WITH THE CITY'S ESC INSPECTOR. A CERTIFICATE OF FINANCIAL VIOLATION WILL NOT BE ISSUED AND/OR THE GRADING BOND WILL NOT BE RELEASED UNTIL THE CITY'S ESC INSPECTOR APPROVES FINAL STABILIZATION.

#### BMP LEGEND

DETAIL NO.	SHEET NO.	BMP	DESCRIPTION
1	2	CD	CHECK DAM
2	2	CB	COMPOST BLANKET
3	2	CFB	COMPOST FILTER BERM
4	3	CWA	CONCRETE WASHOUT AREA
5	3	CF	CONSTRUCTION FENCE
6	3	CM	CONSTRUCTION MARKERS
7	4	DW	DEWATERING
8	4	DD	DIVERSION DITCH
9	5	ECB	EROSION CONTROL BLANKET
10	6	IP	INLET PROTECTION
11	7	RCD	REINFORCED CHECK DAM
12	7	RRB	REINFORCED ROCK BERM
13	7	RRC	RRB FOR CULVERT PROTECTION
14	8	SB	SEDIMENT BASIN
15	8	SCL	SEDIMENT CONTROL LOG
16	9	ST	SEDIMENT TRAP
17	10	SM	SEEDING AND MULCHING
18	11	SF	SILT FENCE
19	11	SSA	STABILIZED STAGING AREA
20	11	SR	SURFACE ROUGHENING
21	12	TSD	TEMPORARY SLOPE DRAIN
22	12	TSC	TEMPORARY STREAM CROSSING
23	13	TER	TERRACING
24	13	VTC	VEHICLE TRACKING CONTROL
25	13	VW	VIC WITH WHEEL WASH
		LOC	ROCK AND RIPRAP GRADATIONS
		LOC	LIMITS OF CONSTRUCTION

<b>COMPUTER FILE INFORMATION</b> Creation Date: 03/10/2016 Initials: CJC Last Modification Date: 5/4/2016 Initials: CJC Full Path: WWW.C3GOV.COM Drawing Name: \$FILESS Scale: \$SCALESHORTS Units: ENGLISH	<b>APPROVAL</b> 05-27-16 DATE CITY ENGINEER	<b>CITY OF COMMERCE CITY</b> Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150	<b>EROSION &amp; SEDIMENT CONTROL</b> ENGINEERING CONSTRUCTION STANDARDS DETAIL NO. 800-01 Sheet No. 1 of 14
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### CONCRETE WASHOUT AREA INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATIONS OF CONCRETE WASHOUT AREA
- THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
- VEHICLE TRACKING CONTROL (DETAIL 24) IS REQUIRED AT THE ACCESS POINT.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRIGS.
- EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

### CONCRETE WASHOUT AREA MAINTENANCE NOTES

- THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
- AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
- WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
- INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

### CONSTRUCTION FENCE INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS)
  - LOCATION AND LENGTH OF FENCE OR LINE OF MARKERS
- CONSTRUCTION FENCE OR MARKERS INDICATED ON INITIAL ESC PLAN SHALL BE INSTALLED PRIOR TO OTHER BMPs AND ANY LAND-DISTURBING ACTIVITIES.
- STEEL TEE POSTS SHALL BE UTILIZED FOR SUPPORT OF CONSTRUCTION FENCE. MAXIMUM SPACING FOR TEE POSTS SHALL BE 15'.

### CONSTRUCTION FENCE MAINTENANCE NOTES

- ANY DAMAGED FENCE OR MARKERS SHALL BE REPAIRED ON A DAILY BASIS.
- FENCE OR MARKERS SHALL BE REMOVED AT THE END OF CONSTRUCTION, IF ANY DISTURBED AREA EXISTS AFTER FENCE REMOVAL, IT SHALL BE DRILL SEEDDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

### CONCRETE WASHOUT AREA

4

<b>COMPUTER FILE INFORMATION</b> Creation Date: 03/10/2016 Initials: CJC Last Modification Date: 5/4/2016 Initials: CJC Full Path: WWW.C3GOV.COM Drawing Name: \$FILESS Scale: \$SCALESHORTS Units: ENGLISH	<b>APPROVAL</b> 05-27-16 DATE CITY ENGINEER	<b>CITY OF COMMERCE CITY</b> Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150	<b>EROSION &amp; SEDIMENT CONTROL</b> ENGINEERING CONSTRUCTION STANDARDS DETAIL NO. 800-03 Sheet No. 3 of 14
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### COMPOST BLANKET AND COMPOST FILTER BERM

NOTE: NO CONCENTRATED FLOWS

PROPER SOIL PREPARATION AND SURFACE ROUGHENING WHEN APPROPRIATE

COMPOST BLANKET NOTES:

- SEE PLAN VIEW FOR AREA OF COMPOST BLANKET.
- MAY BE USED IN PLACE OF STRAW MULCH OR EROSION CONTROL BLANKET IN AREAS WHERE ACCESS IS DIFFICULT DUE TO LANDSCAPING OR OTHER OBJECTS OR IN AREAS WHERE A SMOOTH TURF GRASS FINISH IS DESIRED.
- SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL.
- SHALL BE PROHIBITED IN AREAS OF POSSIBLE CONCENTRATED FLOW.
- SOIL PREPARATION SHALL BE COMPLETE PER THE SPECIFICATIONS OUTLINED IN THESE CRITERIA PRIOR TO APPLICATION.
- WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES MAY BE COMBINED AND BLOWN WITH THE PNEUMATIC BLOWER.
- MAYBE APPLIED UTILIZING PNEUMATIC BLOWER, OR BY HAND.
- SEEDING SHALL BE DRILLED PRIOR TO THE APPLICATION OF COMPOST OR SEED.
- COMPOST FILTER BERM SHALL BE UTILIZED ON SLOPES WITH A MAXIMUM SPACING OF 15 FEET FOR THE REQUIREMENTS FOUND IN THE COMPOST FILTER BERM SECTION.
- THE ESC MANAGER SHALL INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
- COMPOST USED IN THE APPLICATION OF THE COMPOST BLANKET SHALL BE A CLASS I COMPOST AS DEFINED BY THE FOLLOWING PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS:

COMPOST FILTER BERM NOTES:

- SEE PLAN VIEW FOR LENGTH OF COMPOST FILTER BERM.
- SHALL BE APPLIED TO ALL SLOPES RECEIVING A COMPOST BLANKET AT 15' INCREMENTS.
- FILTER BERMS SHALL RUN PARALLEL TO THE CONTOUR.
- FILTER BERMS SHALL BE A MINIMUM OF 1' H x 2' W.
- FILTER BERMS SHALL BE APPLIED UTILIZING PNEUMATIC BLOWER, OR BY HAND.
- SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL.
- SHALL BE PROHIBITED IN AREAS OF POSSIBLE CONCENTRATED FLOW.
- SOIL PREPARATION SHALL BE COMPLETE PER THE SPECIFICATIONS OUTLINED IN THESE CRITERIA PRIOR TO APPLICATION.
- WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES SHALL TAKE PLACE PRIOR TO APPLICATION.
- SEEDING SHALL BE DRILLED BEFORE THE APPLICATION OF COMPOST OR SEED MAY BE COMBINED AND BLOWN WITH THE PNEUMATIC BLOWER.
- THE GESC MANAGER SHALL INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
- COMPOST USED IN THE APPLICATION OF THE COMPOST BLANKET SHALL BE A CLASS I COMPOST AS DEFINED BY THE FOLLOWING PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS:

PARAMETERS	CLASS I COMPOST FOR COMPOST BLANKET	CLASS I COMPOST FOR COMPOST FILTER BERM
MINIMUM STABILITY INDICATOR	STABLE TO VERY STABLE	STABLE TO VERY STABLE
SOLUBLE SALTS	MAXIMUM Solubility	MAXIMUM Solubility
PH	6.5 - 8.5	6.5 - 8.5
AG INDEX	> 10	> 10
MATURITY INDICATOR EXPRESSED AS PERCENTAGE OF GERMINATION/VIOR	> 10	> 10
MATURITY INDICATOR EXPRESSED AS AMMONIA NITRATE N RATIO	< 4	< 4
MATURITY INDICATOR EXPRESSED AS CARBON TO NITROGEN RATIO	20:1	20:1
TESTED FOR CLOSTRIDIA	YES/NEGATIVE RESULT	YES/NEGATIVE RESULT
MOISTURE CONTENT	25-45 % OF DRY WEIGHT	25-45 % OF DRY WEIGHT
ORGANIC MATTER CONTENT	25-45 % OF DRY WEIGHT	25-45 % OF DRY WEIGHT
PARTICLE SIZE DISTRIBUTION	1" (25mm) 100% PASSING 3/4" (19mm) 95% TO 100% PASSING 3/8" (9.5mm) 90% TO 100% PASSING #20 TO 35% PASSING	1" (25mm) 100% PASSING 3/4" (19mm) 95% TO 100% PASSING 3/8" (9.5mm) 90% TO 100% PASSING #20 TO 35% PASSING
PRIMARY, SECONDARY NUTRIENTS, TRACE ELEMENT	STA + CLOSTRIDIA	STA + CLOSTRIDIA
TESTING AND TEST REPORT SUBMITTAL REQUIREMENTS	MUST REPORT	MUST REPORT
ORGANIC MATTER PER CUBIC YARD	MUST REPORT	MUST REPORT
CHEMICAL CONTAMINANTS	MUST REPORT	MUST REPORT
MINIMUM MANUFACTURING/PRODUCTION REQUIREMENTS	MUST REPORT	MUST REPORT
RISK FACTOR RELATING TO PLANT GERMINATION AND HEALTH	LOW	LOW

NOTE: CLOSTRIDIA IS THE COMMON NAME OF A HERBICIDE THAT KILLS BROAD-LEAVED WEEDS SUCH AS DANDELIONS, CLOVER, AND TRIFOLIUM.

COMPOST BLANKET 1

COMPOST FILTER BERM 2

### EROSION & SEDIMENT CONTROL

ENGINEERING CONSTRUCTION STANDARDS

DETAIL NO. 800-02

Sheet No. 2 of 14

### ALTERNATIVE FOR DRAINING POND ALREADY FILLED WITH WATER

LOWEST SUBGRADE ELEVATION TO BE DEWATERED

### DEWATERING SUMP FOR SUBMERSIBLE PUMP - DETAIL

### SETTLING BASIN SURFACE AREA

### DEWATERING PUMP DISCHARGE LINE

### STABILIZED FLOW PATH TO OUTFALL OR RECEIVING WATERS

### BASIN OUTLET - SECTION

### SUMP DISCHARGE SETTLING BASIN - DETAIL

### DIVERSION DITCH INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF DIVERSION DITCH
  - TYPE OF DITCH (UNLINED, ECB LINED, PLASTIC LINED OR RIPRAP LINED)
  - LENGTH OF EACH TYPE OF DITCH
  - DEPTH, "D", AND WIDTH, "W", DIMENSIONS
  - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE DETAIL 9)
  - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP "D50"
- SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2-YEAR FLOW RATE OF 10 CFS.
- DIVERSION DITCHES INDICATED ON INITIAL ESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
- FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF DETAIL 9.
- IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

### DIVERSION DITCH MAINTENANCE NOTES

- THE ESC MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
- DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR, IF APPROVED BY THE CITY, LEFT IN PLACE.
- IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

### UNLINED - DETAIL

LONGITUDINAL SLOPE 0.5% TO 0.5%

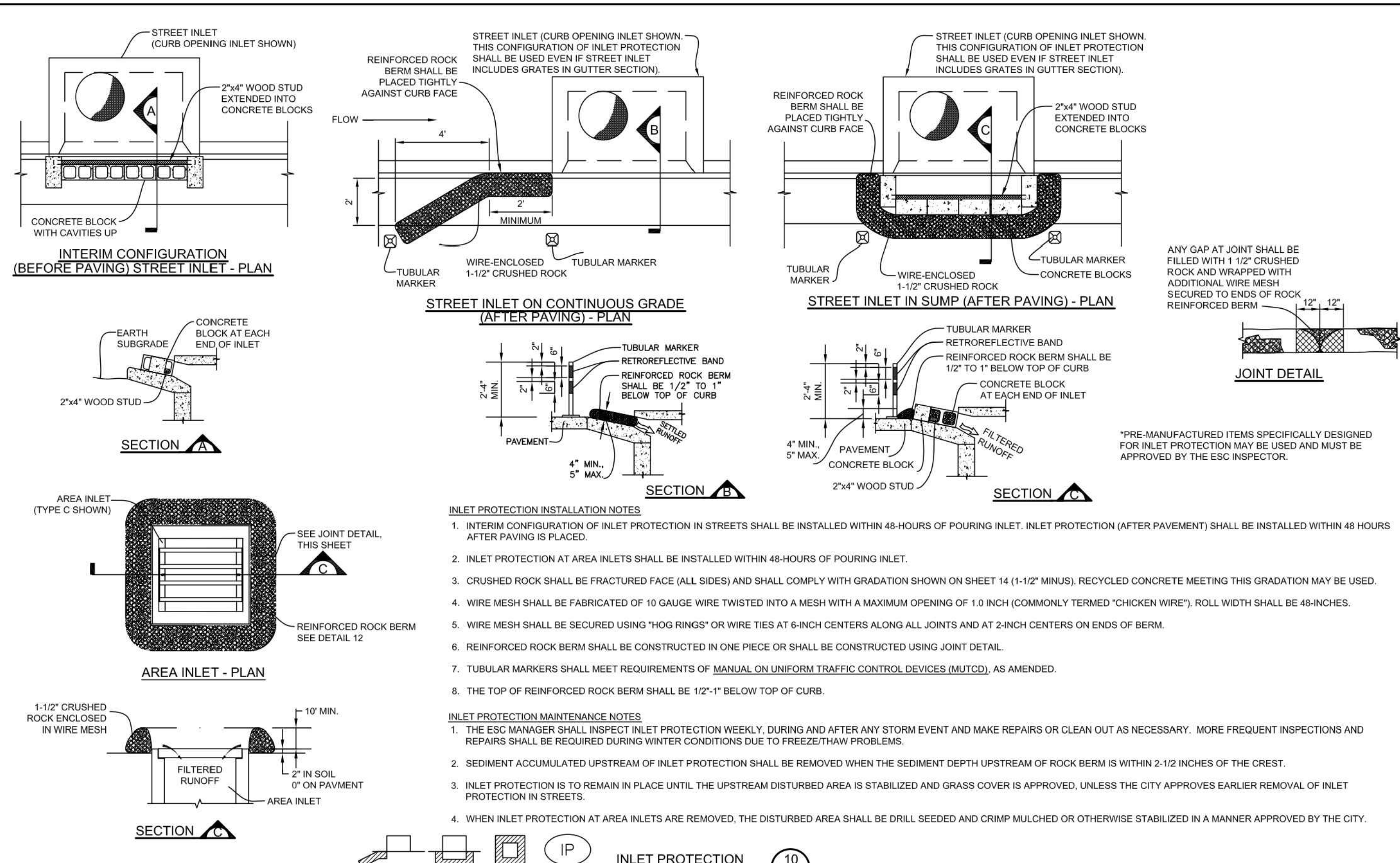
### EROSION CONTROL BLANKET (ECB) LINED - DETAIL

LONGITUDINAL SLOPE 0.5% TO 0.5%

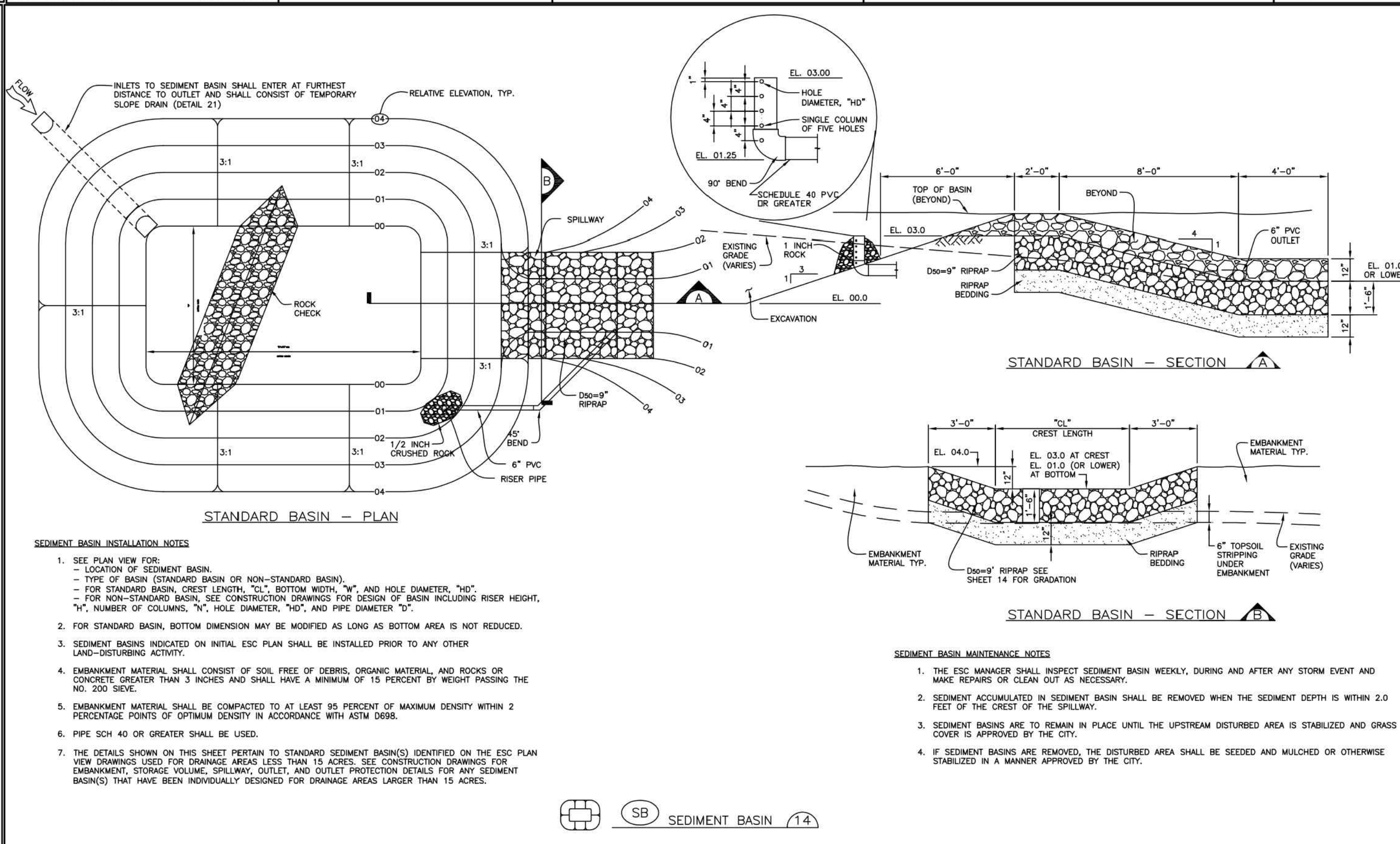
### PLASTIC LINED - DETAIL

LONGITUDINAL SLOPE 0.5% TO 0.5%

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COMPUTER FILE INFORMATION		APPROVAL		CITY OF COMMERCE CITY		EROSION & SEDIMENT CONTROL		DETAIL NO.	
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Last Modification Date: 5/4/2016 Initials: CJC									
Full Path: WWW.C3GOV.COM									
Drawing Name: \$FILES\$									
Scale: \$Scales\$ Units: ENGLISH						ENGINEERING CONSTRUCTION STANDARDS		Sheet No. 6 of 14	



COMPUTER FILE INFORMATION		APPROVAL		CITY OF COMMERCE CITY		EROSION & SEDIMENT CONTROL		DETAIL NO.	
Creation Date: 03/10/2016		Initials: CJC		 CITY OF COMMERCE CITY Department of Public Works 6622 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8100		800-08		8 of 14	
Last Modification Date: 5/4/2016		Initials: CJC							
Full Path: \\WWW\CSGOV\COM									
Drawing Name: \$FILELESS									
Scale: \$SCALE\$FSH05S		 CITY ENGINEER		05-27-16		DATE			
Units: FPMG I/SI						ENGINEERING CONSTRUCTION STANDARDS		Sheet No.	

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HENDERSON, COLORADO

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Project No: CP1000001  
Drawn By: EVR  
Checked By: ARK  
Date: 03/20/2019EROSION CONTROL  
DETAILS

C3.5

<b>SEDIMENT CONTROL LOG INSTALLATION NOTES</b> <ol style="list-style-type: none"><li>SEE PLAN VIEW FOR:<ul style="list-style-type: none"><li>LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.</li></ul></li><li>SEDIMENT CONTROL LOGS INDICATED ON INITIAL ESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.</li><li>SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR, OR COCONUT FIBER.</li><li>NOT FOR USE IN CONCENTRATED FLOW AREAS SUCH AS ROADSIDE DITCHES.</li><li>THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2'.</li></ol>		<b>SEDIMENT TRAP INSTALLATION NOTES</b> <ol style="list-style-type: none"><li>SEE PLAN VIEW FOR:<ul style="list-style-type: none"><li>LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.</li></ul></li><li>SEDIMENT TRAPS INDICATED ON INITIAL ESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.</li><li>SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.</li><li>RIPRAP OUTLET SHALL BE CONSTRUCTED WITH D=6" RIPRAP WITH A MINIMUM OVERFLOW OF 6".</li><li>THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.</li><li>THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL BE MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.</li></ol>	
<b>SEDIMENT CONTROL LOG MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>THE ESC MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.</li><li>SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 2" THE HEIGHT OF THE CREST OF LOG.</li><li>SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION, IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.</li></ol>		<b>SEDIMENT TRAP MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>THE ESC MANAGER SHALL INSPECT SEDIMENT TRAPS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.</li><li>SEDIMENT ACCUMULATED UPSTREAM OF RIPRAP SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 2" THE HEIGHT OF THE RIPRAP OUTLET STRUCTURE.</li><li>SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVERAGE IS APPROVED BY THE CITY.</li><li>WHEN SEDIMENT TRAPS ARE REMOVED THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR STABILIZED IN A MANNER APPROVED BY THE CITY.</li></ol>	
<b>COMPUTER FILE INFORMATION</b> Creation Date: 03/10/2016 Initials: CJC Last Modification Date: 5/4/2016 Initials: CJC Full Path: WWW.C3GOV.COM Drawing Name: \$FILESS Scale: \$SCALESHORTS Units: ENGLISH		<b>APPROVAL</b> CITY ENGINEER DATE 05-27-16 CITY OF COMMERCE CITY Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150	
<b>EROSION &amp; SEDIMENT CONTROL</b>		<b>DETAIL NO. 800-09</b>	
<b>ENGINEERING CONSTRUCTION STANDARDS</b>		Sheet No. 9 of 14	

<b>SILT FENCE INSTALLATION NOTES</b> <ol style="list-style-type: none"><li>SEE PLAN VIEW FOR:<ul style="list-style-type: none"><li>LOCATION AND LENGTH OF FENCE.</li></ul></li><li>ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND, WITH "JUMPING JACK", OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.</li><li>SILT FENCE GEOTEXTILE SHALL MEET THE FOLLOWING REQUIREMENTS:<ul style="list-style-type: none"><li>6-TO 12-GALLONS PER MINUTE PER SQUARE FOOT FLOW CAPACITY.</li><li>90 LB. TENSILE STRENGTH PER ASTM D4622</li><li>UV DESIGN AT 500 HRS MIN. 70% STRENGTH RETAINED PER ASTM D 4355.</li></ul></li><li>SILT FENCE INDICATED ON INITIAL ESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.</li></ol>		<b>STABILIZED STAGING AREA MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>THE ESC MANAGER SHALL INSPECT THE STABILIZED STAGING AREA WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.</li><li>ESC MANAGER SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.</li><li>STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.</li><li>ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.</li><li>THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE CITY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.</li></ol>	
<b>SILT FENCE MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>THE ESC MANAGER SHALL INSPECT SILT FENCE WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.</li><li>SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.</li><li>SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.</li></ol>		<b>SURFACE ROUGHENING INSTALLATION NOTES</b> <ol style="list-style-type: none"><li>SURFACE ROUGHENING SHALL BE PROVIDED ON ALL FINISHED GRADES (SLOPES AND "FLAT" AREAS) WITHIN 2 DAYS OF COMPLETION OF FINISHED GRADE (FOR AREAS NOT RECEIVING TOPSOIL) OR WITHIN 2 DAYS OF TOPSOIL PLACEMENT.</li><li>AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD IS TO BE PLACED WITHIN 7-DAYS OF FINISHED GRADING DO NOT NEED TO BE SURFACE ROUGHENED.</li><li>DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.</li></ol>	
<b>SURFACE ROUGHENING MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>THE ESC MANAGER SHALL INSPECT THE SURFACE ROUGHENING WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.</li><li>VEHICLES AND EQUIPMENT SHALL GENERALLY BE CONFINED TO ACCESS DRIVES AND SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.</li><li>IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.</li><li>IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROVE DEPTH AND SMOOTH OVER ANY RILL EROSION.</li></ol>		<b>TERMINATION OF RIPRAP LINED SLOPE DRAIN - DETAIL</b> 	
<b>COMPUTER FILE INFORMATION</b> Creation Date: 03/10/2016 Initials: CJC Last Modification Date: 5/4/2016 Initials: CJC Full Path: WWW.C3GOV.COM Drawing Name: \$FILESS Scale: \$SCALESHORTS Units: ENGLISH		<b>APPROVAL</b> CITY ENGINEER DATE 05-27-16 CITY OF COMMERCE CITY Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150	
<b>EROSION &amp; SEDIMENT CONTROL</b>		<b>DETAIL NO. 800-11</b>	
<b>ENGINEERING CONSTRUCTION STANDARDS</b>		Sheet No. 11 of 14	

<b>SEEDING AND MULCHING INSTALLATION NOTES</b> <ol style="list-style-type: none"><li>SEE PLAN VIEW FOR:<ul style="list-style-type: none"><li>AREA OF SEEDING AND MULCHING.</li><li>TYPE OF SEED MIX (PERMANENT, TEMPORARY, OR LOW-GROWTH).</li></ul></li><li>ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINOURED, JOHNSON GRASS, KNAF WEED AND LEAFY SPURGE.</li><li>THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO THE CITY UPON REQUEST.</li><li>DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT:</li><li>IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO CONTRACTOR AND FORWARDED TO THE CITY INSPECTOR.</li><li>THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE: POUNDS OF SEED (X PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).</li><li>PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY THE CITY.</li><li>ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). HAIL, ROADS AND OTHER COMPACTED AREAS SHALL BE LOOSENEED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.</li><li>SOIL IS TO BE THOROUGHLY LOOSENEED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDED. THE TOP 6 INCHES OF THE SEED BED SHALL BE FREE OF ROCKS GREATER THAN 4 INCHES AND SOIL CLODS GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENEED SHALL BE REJECTED.</li><li>SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH. ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW, AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. OF STRAW PER ACRE.</li><li>IF THE PERMITTEE DEMONSTRATES TO THE CITY THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.</li><li>SEEDING AND MULCHING SHALL BE COMPLETED WITHIN 30 DAYS OF INITIAL EXPOSURE OR 7 DAYS AFTER GRADING IS SUBSTANTIALLY COMPLETE IN A GIVEN AREA (AS DEFINED BY THE CITY). THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.</li><li>MULCH SHALL BE APPLIED WITHIN 24 HOURS OF SEEDING.</li><li>TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.</li></ol>		<b>SEEDING AND MULCHING MAINTENANCE NOTES</b> <ol style="list-style-type: none"><li>SEEDING AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.</li><li>REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:<ol style="list-style-type: none"><li>THREE (3) PLANTS PER SQUARE FOOT WITH A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE CITY APPROVED MIX.</li><li>NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FOOT BY TWO-FOOT OR EQUIVALENT).</li><li>FREE OF ERODED AREAS.</li><li>FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.</li></ol></li><li>REQUIRED COVERAGE FOR TURF GRASS AREAS SHALL BE DEFINED AS FOLLOWS:<ol style="list-style-type: none"><li>AT LEAST 80% VEGETATIVE COVER OF GRASS SPECIES PLANTED.</li><li>NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FOOT BY TWO-FOOT OR EQUIVALENT).</li><li>FREE OF ERODED AREAS.</li><li>FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.</li></ol></li><li>RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE CITY.</li></ol>	
<b>COMPUTER FILE INFORMATION</b> Creation Date: 03/10/2016 Initials: CJC Last Modification Date: 5/4/2016 Initials: CJC Full Path: WWW.C3GOV.COM Drawing Name: \$FILESS Scale: \$SCALESHORTS Units: ENGLISH		<b>APPROVAL</b> CITY ENGINEER DATE 05-27-16 CITY OF COMMERCE CITY Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150	
<b>EROSION &amp; SEDIMENT CONTROL</b>		<b>DETAIL NO. 800-10</b>	
<b>ENGINEERING CONSTRUCTION STANDARDS</b>		Sheet No. 10 of 14	

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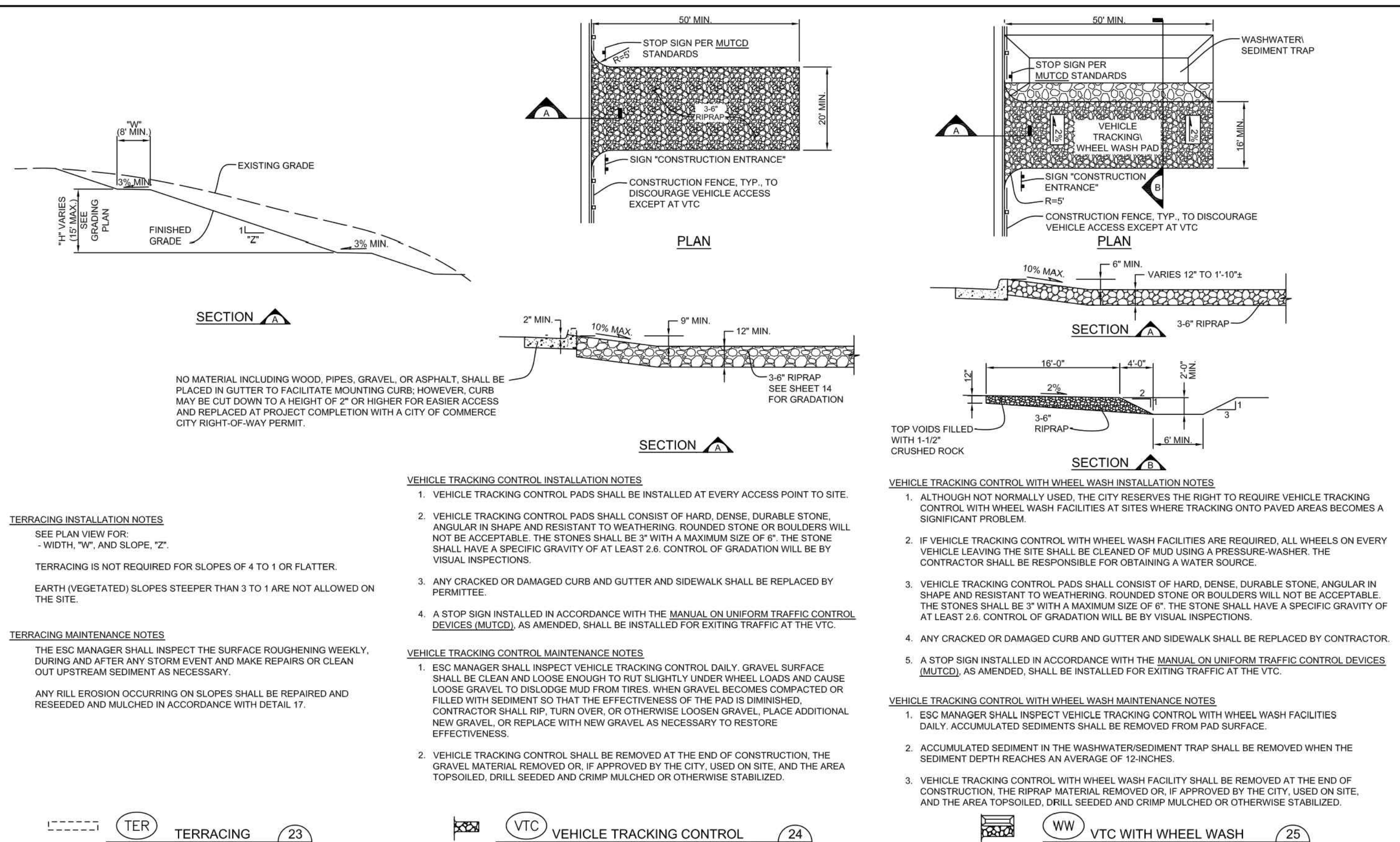
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HENDERSON, COLORADO

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Project No:	CPI000001
Drawn By:	EVR
Checked By:	ARK
Date:	03/20/2019

## EROSION CONTROL DETAILS

# C3.6



D50 MEDIAN STONE SIZE (INCHES)	% OF MATERIAL SMALLER THAN TYPICAL STONE	TYPICAL STONE EQUIVALENT DIAMETER (INCHES)	TYPICAL STONE WEIGHT (POUNDS)
6	70 - 100	12	85
	50 - 70	9	35
	35 - 50	6	10
	2 - 10	2	0.4
9	70 - 100	15	180
	50 - 70	12	85
	35 - 50	9	35
	2 - 10	3	1.3
12	70 - 100	21	440
	50 - 70	18	275
	35 - 50	12	85
	2 - 10	4	3
18	100	30	1280
	50 - 70	24	650
	35 - 50	18	275
	2 - 10	6	10
24	100	42	3500
	50 - 70	33	1700
	35 - 50	24	650
	2 - 10	9	35

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	CLASS A
3"	100
1 1/2"	20 - 90
NO. 4	0 - 20
NO. 200	0 - 3
MATCHES SPECIFICATIONS FOR CDOT CLASS A FILTER MATERIAL, AND UFGD TYPE 1 BEDDING. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

MATCHES SPECIFICATIONS FOR NO. 4  
COARSE AGGREGATE FOR CONCRETE PER  
AASHTO M43. ALL ROCK SHALL BE  
FRACTURED FACE, ALL SIDES.

COMPUTER FILE INFORMATION		APPROVAL		CITY OF COMMERCE CITY		EROSION & SEDIMENT CONTROL		DETAIL NO. <b>800-14</b>	
Creation Date: 03/10/2016 Initials: CJC		 CITY ENGINEER DATE 05-27-16		 Department of Public Works 8602 Rosemary St. Commerce City, CO 80022 Ph: 303-289-8150		<b>ENGINEERING CONSTRUCTION STANDARDS</b>		Sheet No. 14 of 14	
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**A. MINIMUM PLANT SIZE REQUIREMENTS AND SOIL PREPARATION**  
MINIMUM PLANT SIZE REQUIREMENTS ARE 2-INCH DIAMETER (CALIPER) FOR DECIDUOUS TREES, 1.5-INCH DIAMETER FOR ORNAMENTAL TREES AND 6-FOOT HEIGHT FOR EVERGREEN TREES. MINIMUM SIZE REQUIREMENTS FOR SHRUBS IS 5 GALLON CONTAINER; ORNAMENTAL GRASSES 1 GALLON CONTAINER; PERENNIALS AND GROUND COVER 2.25 POTS. PLANTS SHOULD BE MIXED APPROXIMATELY 50% EVERGREEN AND 50% DECIDUOUS (TREE LAWN AREAS SHALL BE DECIDUOUS SHADE TREES). MINIMUM SOIL PREPARATION FOR PLANTING SHALL BE 5 CUBIC YARDS OF ORGANIC SOIL AMENDMENT TILLED TO A DEPTH OF 6-INCHES FOR EVERY 1,000 SF OF LANDSCAPE AREA.

THE PLANNING DIVISION HAS IDENTIFIED SPECIFIC DECIDUOUS TREE SPECIES TO BE PLANTED WITHIN TREE LAWN AREAS. ALL TREES CHOSEN FOR TREE LAWN APPLICATIONS MUST BE SELECTED FROM THE APPROVED PLANT LIST.

POROUS FABRIC MUST BE USED IN PLANTED BEDS. PLASTIC WEED BARRIERS ARE PROHIBITED

PLASTIC OR FIBERGLASS EDGING IS FAVORABLE TO METAL. HOWEVER, METAL EDGING MAY BE USED PROVIDED IT HAS ROLLOVER TOP OR A PROTECTIVE CAP.

THE DEVELOPER SHALL ENSURE THAT THE LANDSCAPE PLAN IS CLOSELY COORDINATED WITH PLANS PREPARED BY OTHER CONSULTANTS SO THAT THE PROPOSED GRADING, STORM DRAINAGE, OR OTHER CONSTRUCTION DOES NOT CONFLICT WITH OR PRECLUDE THE INSTALLATION AND MAINTENANCE OF LANDSCAPE ELEMENTS AS DESIGNATED ON THE LANDSCAPE PLAN.

ALL LANDSCAPE AREAS AND PLANT MATERIALS MUST BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. IRRIGATION SYSTEM DESIGN, INSTALLATION, OPERATION, AND MAINTENANCE SHALL CONFORM TO THE REQUIREMENTS OF THE SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD). APPROVAL OF THIS LANDSCAPE PLAN DOES NOT CONSTITUTE APPROVAL FROM THE SACWSD.

THE DEVELOPER, HIS SUCCESSORS, AND ASSIGNS, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF ALL LANDSCAPING MATERIALS SHOWN OR INDICATED ON THE APPROVED LANDSCAPE PLAN, INCLUDING THE LANDSCAPING WITHIN THE RIGHT-OF-WAY.

LANDSCAPING SHALL BE CONTINUOUSLY MAINTAINED INCLUDING NECESSARY WATERING, WEEDING, PRUNING, PEST CONTROL, AND REPLACEMENT OF DEAD OR DISEASED PLANT MATERIAL AS SET FORTH IN THE APPROVED SITE PLAN (A TREE MUST REPLACE A TREE OR A SHRUB MUST REPLACE A SHRUB). ANY REPLACEMENT SHALL OCCUR IN THE NEXT PLANTING SEASON, BUT IN NO CASE SHALL REPLACEMENT EXCEED 1 YEAR.

THE APPROVED LANDSCAPE PLAN SHALL BE ON FILE IN THE PLANNING DIVISION. ALL LANDSCAPING WILL BE INSTALLED AS DELINEATED ON THE PLAN PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY.

NO VEHICLE PARKING IS ALLOWED IN ANY LANDSCAPE TREATMENT AREA

WITHIN THE SIGHT DISTANCE TRIANGLE, NO SHRUBS, GROUNDCOVER, BOULDERS, BERMS, FENCES, WALLS, OR OTHER MATERIALS CONSTITUTING VISUAL OBSTRUCTIONS SHALL EXCEED A HEIGHT OF 3 INCHES FROM THE GUTTER FLOWLINE. TREES PLANTED WITHIN THE SIGHT DISTANCE TRIANGLES, AT SUFFICIENT MATURITY, SHALL BE TRIMMED TO A HEIGHT OF 8 FEET ABOVE THE GUTTER FLOWLINE. TREES SHALL BE PLANTED A MINIMUM OF 10 FEET FROM LIGHT OR UTILITY POLES.

ALL AREAS OF THE LOT NOT PAVED OR FORMALLY LANDSCAPED SHALL BE SEEDED WITH NATIVE GRASSES.



1. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL, BY THE TIME OF FINAL INSPECTION. THE ENTIRE IRRIGATION SYSTEM SHALL BE INSTALLED BY A QUALIFIED IRRIGATION CONTRACTOR.
2. THE IRRIGATION SYSTEM WILL HAVE APPROPRIATE BACKFLOW PREVENTION DEVICES INSTALLED TO PREVENT CONTAMINATION OF THE WATER SOURCE IF APPLICABLE.
3. ALL NON-TURF/SEED PLANTED AREAS WILL BE DRIP IRRIGATED. TURF SOD/SEED SHALL RECEIVE POP-UP SPRAY IRRIGATION FOR HEAD TO HEAD COVERAGE.
4. ALL PLANTS SHARING SIMILAR HYDROZONE CHARACTERISTICS SHALL BE PLACED ON A VALVE DEDICATED TO PROVIDE THE NECESSARY WATER REQUIREMENTS SPECIFIC TO THAT HYDROZONE.
5. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE, TO CONSERVE WATER BY USING THE FOLLOWING DEVICES AND SYSTEMS: MATCHED PRECIPITATION RATE TECHNOLOGY ON ROTOR AND SPRAY HEADS (WHEREVER POSSIBLE), RAIN SENSORS, AND SMART MULTI-PROGRAM COMPUTERIZED IRRIGATION CONTROLLERS FEATURING SENSORY INPUT CAPABILITIES.

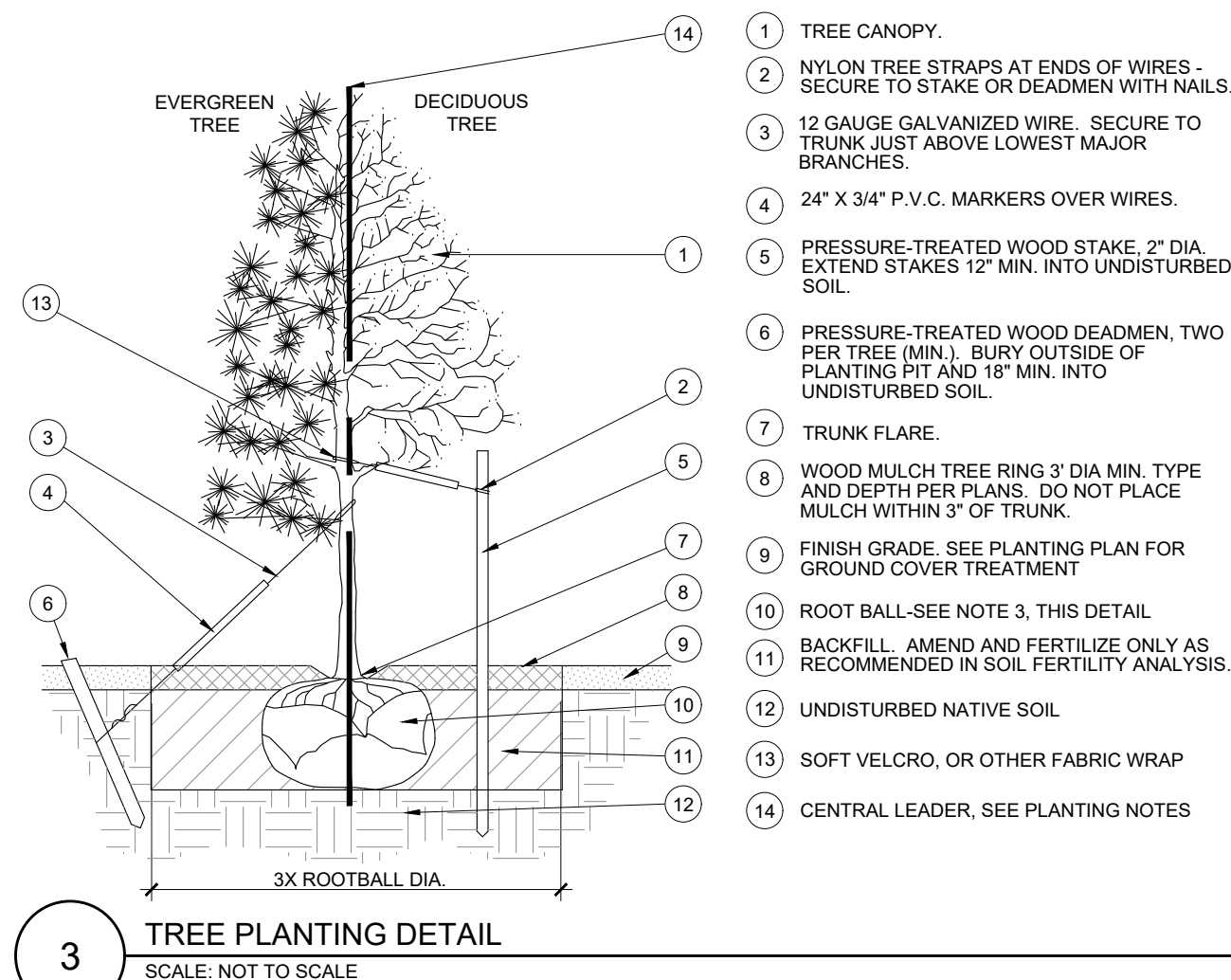
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOIL, SEEDED AREAS, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNERS ACCEPTANCE. THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
2. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A NEAT, CLEAN, AND HEALTHY CONDITION FOR A PERIOD OF 90 DAYS. THIS SHALL INCLUDE PROPER PRUNING, MOVING AND AERATION OF LAWNS, WEEDING, REPLACEMENT OF MULCH, REMOVAL OF LITTER, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. IRRIGATION SHALL BE MAINTAINED IN PROPER WORKING ORDER. THE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEMS IN PROPER WORKING ORDER, SITE SPECIFICALLY, DURING WINTER, TO AVOID FREEZE DAMAGE ON PLANTINGS. THE 90 DAYS SHOULD BEGIN AFTER ACCEPTANCE OF THE WORK.
3. DURING THE LANDSCAPE MAINTENANCE PERIOD, THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURE IN LANDSCAPE AREAS. LANDSCAPE AREAS WHICH SETTLE AND CREATE THE POTENTIAL FOR DAMAGE SHALL BE REPAIRED TO ELIMINATE PONDING POTENTIAL AND BLEND IN WITH THE SURROUNDING GRADES. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GEOTECHNICAL REPORT, THE GRADING PLANS, THESE NOTES, AND THE SPECIFICATIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.

AREAS OF REQUIRED LANDSCAPING	AREA	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	16,555 SF	1 TREE PER 1200 SF OF LANDSCAPING + 25% UPGRADE	18 TREES	18 TREES
REQUIRED SHRUBS	16,555 SF	1 SHRUB PER 300 SF OF LANDSCAPING + 25% UPGRADE	69 SHRUBS	69 SHRUBS

PARKING LOT REQUIREMENTS	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	1 TREE PER 30 LF OF PARKING LOT DRIVEWAY	280 LF TOTAL 10 TREES REQUIRED	10 TREES (6 PROPOSED 2 EXISTING)

RIGHT OF WAY REQUIREMENTS	FORMULA	TOTAL QTY. REQUIRED	TOTAL QTY. PROVIDED
REQUIRED TREES	1 TREE PER 40 LF OF SIDEWALK LENGTH	370 LF TOTAL 10 TREES REQUIRED	12TREES (8PROPOSED 4 EXISTING)

LANDSCAPE REQUIREMENT	REQUIREMENT AREA / %	REQUIREMENT MET
PLANTING COVERAGE	75% OF PLANTING AREA COVERED (WITHIN 5 YEARS)	X
TURF	50% MAXIMUM OF PLANTING TO BE TURF	X (NO TURF - 20% SEED)
MULCH	2 TYPES OF MULCH REQUIRED	X



1. ALL WORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES, STANDARDS, AND SPECIFICATIONS.
2. LANDSCAPE DESIGN IS DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN TAKEOFFS AND QUANTITY CALCULATIONS. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE LANDSCAPE LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN SHALL TAKE PRECEDENCE AND NOTIFY THE LANDSCAPE ARCHITECT OF THESE DISCREPANCIES. NOT TO THE LANDSCAPE ARCHITECT'S SURPRISE, SOME PLANT LOCATIONS MAY BE PROPOSED FOR CITY CONSIDERATION AT THE CONSTRUCTION DOCUMENT STAGE TO RESPOND TO MARKET AND FIELD CONDITIONS. HOWEVER, THERE SHALL BE NO REDUCTION IN THE NUMBER AND SIZE OF MATERIALS.
3. CONTRACTOR SHALL MAKE HIMSELF AWARE OF THE LOCATIONS OF EXISTING AND PROPOSED UTILITIES, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES AND/OR ANY INJURY TO ANY PERSON. THIS DRAWING IS PART OF A COMPLETE SET OF CONTRACT DOCUMENTS. UNDER NO CIRCUMSTANCES SHOULD THIS PLAN BE USED FOR CONSTRUCTION PURPOSES WITHOUT EXAMINING ALL LOCATIONS OF UTILITIES ON SITE AND REVIEW ALL RELATED PLANS AND DOCUMENTS.
4. ALL UTILITY EASEMENTS SHALL REMAIN UNOBTSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR MAINTENANCE EQUIPMENT.
5. THE CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE ANY EXISTING PLANTS INDICATED AS "TO REMAIN". ANY SUCH PLANTS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH THE SAME SPECIES, SIZE AND QUANTITY AT THE CONTRACTOR'S OWN EXPENSE, AND AS ACCEPTABLE TO THE OWNER. REFER TO THE TREE PROTECTION NOTES ON THE PLANS (AS APPLICABLE).
6. LANDSCAPE CONTRACTOR SHALL EXAMINE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE GENERAL CONTRACTOR IN WRITING OF UNSATISFACTORY CONDITIONS. IF SITE CONDITIONS OR PLANT AVAILABILITY REQUIRE CHANGES TO THE PLAN, THEN AN APPROVAL WILL BE OBTAINED FROM THE CITY. DO NOT PROCEED UNTIL CONDITIONS HAVE BEEN CORRECTED.
7. ALL CONSTRUCTION DEBRIS AND MATERIAL SHALL BE REMOVED AND CLEANED UP PRIOR TO INSTALLATION OF TOPSOIL, TREES, SHRUBS, AND TURF.
8. FOR ALL INFORMATION ON SURFACE MATERIAL OF WALKS, DRIVES, AND PARKING LOTS, SEE THE SITE PLAN. SEE PHOTOMETRIC PLAN FOR FREE STANDING LIGHTING INFORMATION.
9. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT ONE WEEK PRIOR TO BEGINNING CONSTRUCTION.
10. WINTER WATERING SHALL BE AT THE EXPENSE OF THE CONTRACTOR UNTIL SUCH TIME AS FINAL ACCEPTANCE IS RECEIVED.
11. LANDSCAPE CONSTRUCTION PRACTICES, WORKMANSHIP, AND ETHICS SHALL, BE IN ACCORDANCE WITH INDUSTRY STANDARDS SET FORTH IN THE CONTRACTORS HANDBOOK PUBLISHED BY THE COLORADO LANDSCAPE CONTRACTORS ASSOCIATION.
12. LANDSCAPE AND IRRIGATION WORK SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY.

FINISH GRADING AND SOIL PREPARATION

13. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN FINISH GRADES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE GEOTECHNICAL REPORT. SOILS OF POOR DRAINAGE CHARACTERISTICS SHALL BE REGRADED TO BLEND WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GEOTECHNICAL REPORT, THE GRADING PLANS, THESE NOTES, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND OWNER.
14. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, IT IS RECOMMENDED THAT THE CONTRACTOR SHALL HAVE SOIL SAMPLES TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY FOR THE FOLLOWING: GENERAL SOIL FERTILITY, PH ORGANIC MATTER CONTENT, SALINITY, LIMES, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT. EACH SAMPLE SUBMITTED SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL. CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): GENERAL SOIL PREPARATION AND BACKFILL MIXES, PRE-PLANT FERTILIZER APPLICATIONS, AND ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
15. THE CONTRACTOR SHALL RECOMMEND INSTALLATION OF SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT FOR THE SOIL OWNER'S REPRESENTATIVE CONSIDERATION.
16. AT A MINIMUM, ALL TOPSOIL SHALL BE AMENDED WITH NITROGEN STABILIZED ORGANIC AMENDMENT QUANTITY AT A RATE OF 5.0 CUBIC YARDS AND AMMONIUM PHOSPHATE 16-20-0 AT A RATE OF 15 POUNDS PER THOUSAND SQUARE FEET OF LANDSCAPE AREA. COMPOST SHALL BE MECHANICALLY INTEGRATED INTO THE TOP 6" OF SOIL BY MEANS OF ROTOTILLAGE AFTER CROSS-SPRING, GROUND COVER & PERENNIAL BED AREAS SHALL BE AMENDED AT A RATE OF 8 CUBIC FEET PER THOUSAND SQUARE FEET OF NITROGEN STABILIZED ORGANIC AMENDMENT AND 10 LBS. OF 12-12-12 FERTILIZER PER CU YD., ROTOTILLED TO A DEPTH OF 8". NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED FOR ORGANIC AMENDMENTS.

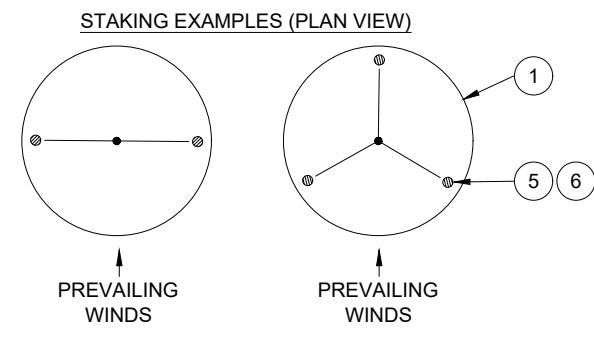
USE COMMERCE CITY TREE PROTECTION NOTICES (IF AVAILABLE). TREE PROTECTION NOTES BELOW SHALL BE USED FOR FURTHER INTEGRATION.

2. "PROTECTED ZONE": FOR EXISTING TREES: BEFORE BEGINNING ANY DEMOLITION OR CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND ALL EXISTING TREES WITHIN THE CONSTRUCTION ZONE THAT ARE TO BE SAVED. THE FENCE SHALL BE INSTALLED NO CLOSER TO THE TREE THAN THE EDGE OF THE TREE'S PROTECTED ZONE. THE ZONE IS DEFINED AS THE AREA BEGINNING FIVE FEET OUTSIDE OF THE TREE'S DRILLPILE AND EXTENDING TOWARDS THE TREE (OR AS FAR AWAY FROM THE TRUNK AS PRACTICABLE). THE FENCING SHALL BE OF A MATERIAL AND HEIGHT ACCEPTED TO THE LANDSCAPE ARCHITECT. ALL CONTRACTORS AND THEIR CREWS SHALL NOT BE ALLOWED INSIDE THIS "PROTECTED ZONE" NOR SHALL ANY MATERIAL BE ALLOWED TO STORE OR DUMP FOREIGN MATERIALS WITHIN THIS AREA. NO WORK OF ANY KIND, INCLUDING TRENCHING, SHALL BE ALLOWED WITHIN THE PROTECTED ZONE EXCEPT AS DESCRIBED ABOVE. THE FENCING SHALL REMAIN AROUND EACH TREE TO BE SAVED UNTIL THE COMPLETION OF CONSTRUCTION OPERATIONS.

3. TEMPORARY MULCH: TO ALLEVIATE SOIL COMPACTION IN ANTICIPATED AREAS OF HIGH CONSTRUCTION TRAFFIC, AND ONLY WHEN FENCING CANNOT BE SET FIVE FEET OUTSIDE OF THE DRILLPILE, THE CONTRACTOR SHALL INSTALL A LAYER OF MULCH, 9"-12" THICK OVER ALL EXPOSED EARTH FROM THE TREE TRUNK TO 5' OUTSIDE OF THE DRILLPILE. THIS LAYER SHALL BE MAINTAINED AT ALL TIMES. WHEN CONSTRUCTION OPERATIONS ARE COMPLETED, THE MULCH SHALL BE REDISTRIBUTED THROUGHOUT ALL PLANTING AREAS IN A 3" THICK "PERMANENT" MULCH LAYER.

4. NECESSARY WORK: WHEN IT BECOMES NECESSARY TO ENTER THE "PROTECTED ZONE", SUCH AS FOR FINE GRADING, IRRIGATION INSTALLATION, AND PLANTING OPERATIONS, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE FOLLOWING RULES:

- A. EVERY EFFORT SHALL BE MADE TO PRESERVE THE EXISTING GRADE AROUND PROTECTED TREES IN AS WIDE AN AREA AS POSSIBLE.
- B. TRENCHING WITHIN THE PROTECTED ZONE OF EXISTING TREES SHALL BE PERFORMED BY HAND, AND WITH EXTREME CARE NOT TO SEVER ROOTS 1-1/2" IN DIAMETER AND LARGER. WHERE ROOTS 1-1/2" IN DIAMETER AND LARGER ARE ENCOUNTERED, THE CONTRACTOR SHALL TUNNEL UNDER SAID ROOTS. EXPOSED ROOTS THAT HAVE BEEN TUNNELED UNDER SHALL BE WRAPPED IN WEET BURLAP AND KEPT MOIST WHILE THE TRENCH IS OPEN.
- C. WHERE ROOTS 1-1/2" IN DIAMETER OR LARGER MUST BE CUT DUE TO EXTENSIVE GRADE CHANGES, THOSE ROOTS MUST BE EXPOSED BY HAND DIGGING AND CUT CLEANLY. RAGGED CUTS GENERALLY DO NOT HEAL PROPERLY, AND MAY LEAVE THE TREE OPEN TO PESTS AND PATHOGENS.
- D. WHERE TRENCHING NEAR TREES HAS ALREADY OCCURRED FROM PREVIOUS CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL REPAIR AND REGRADE THE TRENCHES DURING CONSTRUCTION OPERATIONS TO THE PREVIOUSLY-CREATED TRENCHES, WHILE ADHERING TO THE CONDITIONS SET FORTH IN 3B.



17. ALL DECIDUOUS TREES SHALL HAVE FULL, WELL-SHAPED HEADS/LI EVERGREENS SHALL BE UNSHEARED AND FULL TO THE CROWN, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
18. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ANY PLANT DETERMINED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT SHALL BE THE SOLE JUDGE AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
19. ALL TREES SHALL BE GUYED AND WOOD STAKED AS PER DETAILS. NO T-STAKES SHALL BE USED FOR TREES.
20. ALL PLANT MATERIALS SHALL BE TRUE TO TYPE, SIZE, SPECIES, QUALITY, AND FREE OF INJURY, BROKEN ROOT BALLS, PESTS, AND DISEASES, AS WELL AS CONFORM TO THE MINIMUM REQUIREMENTS DESCRIBED IN THE "AMERICAN STANDARD FOR NURSERY STOCK". FOLLOW GREENCO TREE PLANTING RECOMMENDATIONS FOR MINIMUM QUALITY REQUIREMENTS FOR TREES.
21. ALL TREE AND SHRUB BED LOCATIONS ARE TO BE STAKED OUT ON SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
22. ALL TREES PLANTED ADJACENT TO PUBLIC AND/OR PEDESTRIAN WALKWAYS SHALL BE PRUNED CLEAR OF ALL BRANCHES BETWEEN GROUND AND A HEIGHT OF EIGHT (8) FEET FOR THAT PORTION OF THE PLAN LOCATED OVER THE SIDEWALK AND/OR ROAD.
23. RTF TALL FESCUE HAS BEEN APPROVED IN MANY JURISDICTIONS AS A LOW-MODERATE HYDROZONE PLANT MATERIAL. INSTALL AND MAINTAIN IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
24. ALL PLANT MATERIAL SHALL NOT BE PLANTED PRIOR TO INSTALLATION OF TOSPOIL.
25. ALL PLANT BEDS SHALL BE CONTAINED WITH STEEL EDGER. STEEL EDGER IS NOT REQUIRED ALONG CURBS, WALKS OR BUILDING FOUNDATIONS. ALL EDGING SHALL OVERLAP AT JOINTS A MINIMUM OF 6-INCHES, AND SHALL BE FASTENED WITH A MINIMUM OF 4 PINS PER EACH 10 FOOT SECTION. THE TOP OF ALL EDGING MATERIAL SHALL BE A ROLLED TOP AND 1/2 INCH ABOVE THE FINISHED GRADE OF ADJACENT LAWN OR MULCH AREAS. COLOR: BLACK.
26. THE DEVELOPER, HIS SUCCESSOR, OR ASSIGNEE SHALL BE RESPONSIBLE FOR ESTABLISHING AND CONTINUING A REGULAR PROGRAM OF MAINTENANCE FOR ALL LANDSCAPED AREAS. SEE LANDSCAPE GUARANTEE AND MAINTENANCE NOTE.
27. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ALL FIRE HYDRANTS.
28. LANDSCAPE CONTRACTOR TO SUBMIT SAMPLES OF MISCELLANEOUS LANDSCAPING MATERIALS TO THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION, I.E., MULCH, EDGER, LANDSCAPE FABRIC, ETC.

29. AFTER ALL PLANTING IS COMPLETE, THE CONTRACTOR SHALL INSTALL A MINIMUM 4" THICK LAYER OF MULCH AS SPECIFIED IN THE PLANTING LEGEND. A 4" THICK RING OF DOUBLE SHREDED CEDAR BARK MULCH AROUND ALL PLANT MATERIAL. IN WHICH BEDS ARE SHOWN ON THE PLANS. WOOD MULCH RINGS SIZE SHALL BE THE CONTAINER SIZE OF THE SHRUBS, PERENNIALS, AND ORNAMENTAL GRASSES. TREE RING SIZE SHALL BE GREEN INDUSTRIES OF COLORADO INDUSTRIAL STANDARD WIDTH.

30. ALL MULCH SHALL BE HARVESTED IN A SUSTAINABLE MANNER FROM A LOCAL SOURCE.

31. INSTALL DEWITT PRO-SOIL BARRIER FABRIC UNDER ALL ROCK MULCH SHRUB BEDS SPECIFIED ON THE PLANS ONLY. NO LANDSCAPE FABRIC SHALL BE USED IN WOOD MULCH AREAS. NO PLASTIC WEED BARRIERS SHALL BE SPECIFIED.

32. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING IN THE LANDSCAPE AREA AFTER MULCH HAS BEEN INSTALLED.

33. ALL PLANTING AREAS WITH LESS THAN 4:1 A GRADIENT SHALL RECEIVE A LAYER OF MULCH, TYPE AND DEPTH PER PLANS. SUBMIT 1 CUBIC FOOT SAMPLE OF MULCH (ONE SAMPLE PER TYPE) TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. THE MULCH SHALL BE SPREAD EVENLY THROUGHOUT ALL PLANTING AREAS EXCEPT SLOPES 4:1 OR STEEPER, OR AS OTHERWISE DEVOTED ON THE PLAN. ABSOLUTELY NO EXPOSED GROUND SHALL REMAIN IN AREAS TO RECEIVE MULCH AFTER MULCH HAS BEEN INSTALLED.

34. ALL PLANTING AREAS ON SLOPES OVER 4:1 SHALL RECEIVE COCONUT FIBER EROSION CONTROL NETTING FROM ROLLS. NETTING SHALL BE RCT-12S, AS MANUFACTURED BY NORTH AMERICAN GREEN (OR EQUAL). INSTALL AND STAKE PER MANUFACTURER'S SPECIFICATIONS. SEE ALSO THE CIVIL ENGINEER'S EROSION CONTROL PLAN.

POTENTIAL CONFLICTS: THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARBORIST SHOULD ANY POTENTIAL CONFLICTS ARISING BETWEEN THESE SPECIFICATIONS AND/OR LARGE ROOTS ENCOUNTERED IN THE FIELD, AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT TAKE ANY ACTION IN SUCH CONFLICTS WITHOUT THE ARBORIST'S WRITTEN APPROVAL. THE ARBORIST SHALL HAVE FINAL AUTHORITY OVER ALL METHODS NECESSARY TO HELP ENSURE THE PROTECTION AND SURVIVAL OF EXISTING TREES.

5. PRUNING: PRUNE ONLY THE TREES THAT ARE INDICATED ON THE PLANS AS REQUIRING PRUNING. PRUNE TREES ACCORDING TO INTERNATIONAL SOCIETY OF ARBORICULTURE / ANSI A300 STANDARDS.

- A. REMOVE ALL DEAD WOOD.
- B. PRUNE LIVE WOOD FOR HEALTH OR STRUCTURAL REASONS ONLY, INCLUDING THE NEED TO ELIMINATE DISEASED OR DAMAGED GROWTH, ELIMINATE STRUCTURALLY UNSOUND GROWTH, REDUCE THE POTENTIAL FOR WIND TOPPING OR WIND DAMAGE, OR TO MAINTAIN GROWTH WITHIN LIMITED SPACE. DO NOT REMOVE MORE THAN 25% OF ANY TREE'S LIVE FOLIAGE IN ANY ONE GROWING SEASON. PRUNE ONLY TO INTERNATIONAL SOCIETY OF ARBORICULTURE/ANSI A300 STANDARDS, AND ONLY UNDER THE DIRECT SUPERVISION OF A CERTIFIED ARBORIST.
- C. FINAL CUTS SHALL BE MADE JUST OUTSIDE THE SHOULDER RING AREA. EXTREMELY FLUSHED CUTS WHICH PRODUCE LARGE WOUNDS SHALL NOT BE MADE.
- D. ALL TRIMMING CUTS SHALL BE PERFORMED IN SUCH A MANNER AS TO PROMOTE THE NATURAL GROWTH AND SHAPE OF EACH TREE SPECIES.
- E. IMPROPER PRUNING METHODS INCLUDING, BUT NOT LIMITED TO, "TOPPING", "TIPPING", "HEADING BACK", "DEHORNING", AND "LIONTAILING" WILL NOT BE ALLOWED. THE CONTRACTOR SHALL PAY FOR ALL WORK NECESSARY TO CORRECT SUCH PRUNING WHEN PERFORMED BY HIS CREWS OR SUBCONTRACTORS.
- F. SHOULD THE CONTRACTOR REQUIRE MORE INFORMATION, THE CONTRACTOR SHALL CONTACT THE ISA AT (217) 355-9141 FOR A COPY OF THE ANSI A300 PRUNING STANDARDS. CONTRACTOR SHALL ADHERE TO THE METHODS AND PRACTICES SET FORTH IN THIS DOCUMENT.

6. LANDSCAPE AND IRRIGATION (NATIVE TREES ONLY): ANY FUTURE LANDSCAPE AND IRRIGATION SHOULD ADHERE TO THE FOLLOWING GUIDELINES:

- A. NO IRRIGATION OR PLANTING SHOULD OCCUR CLOSER THAN 8'-10" FROM THE TRUNK.
- B. WHERE IRRIGATION DOES OCCUR WITHIN THE PROTECTED ZONE, DRIP IRRIGATION SHOULD BE USED WHEREVER POSSIBLE. ADDITIONALLY, ONLY PLANTS WITH LOW WATER NEEDS SHOULD BE PLANTED WITHIN THE PROTECTED ZONE, SPACED FAR APART WHEN CLOSE TO THE TREE. PLANTS MAY BE SPACED CLOSER TOGETHER NEAR THE EDGE OF THE PROTECTED ZONE.

APPROVED BY THE DEPARTMENT OF COMMUNITY DEVELOPMENT OF THE CITY OF  
COMMERCE CITY, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D. \_\_\_\_\_

\_\_\_\_\_  
DEPARTMENT OF COMMUNITY  
DEVELOPMENT SIGNATURE

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# CRYSTAL PACKAGING CONDITIONAL USE PERMIT - LANDSCAPE PLANS

HOUSE CORNER OF BOSTON STREET & E. 92ND AVENUE  
HENDERSON COLORADO

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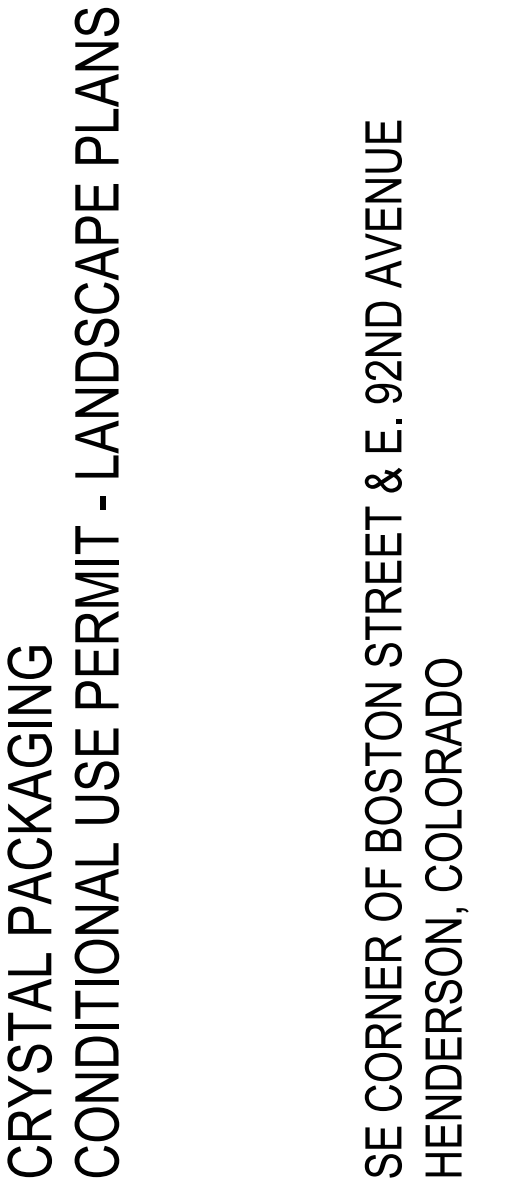
## LANDSCAPE NOTES &amp; DETAILS

# L0.0



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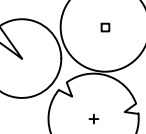







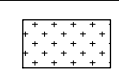
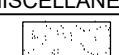

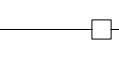

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Project No:	CPI000001
Drawn By:	
Checked By:	
Date:	03/20/2019

LANDSCAPE PLAN &  
LEGEND

L1.1

PLANTING LEGEND						
SYMBOL	ABBREV.	BOTANIC NAME	COMMON NAME	PLANTING SIZE	MATURE SIZE (HxW)	QUANTITY
<b>SHADE TREES</b>						
	ACPL	ACER PLATANOIDES "EMERALD QUEEN"	EMERALD QUEEN NORWAY MAPLE	2" CAL.	50' X 40'	4
	GLTR	GLEDITSIA TRICANTHOS "SKYLINE"	SKYLINE HONEYLOCUST	2" CAL.	50' X 30'	4
	QUAL	QUERCUS ALBA	WHITE OAK	2" CAL.	40' X 40'	3
<b>EVERGREEN TREES</b>						
	PIHE	PINUS HELDREICHII LEUCODERMIS	BOSNIAN PINE	6' HT.	30' X 15'	4
	PINI	PINUS NIGRA	AUSTRIAN PINE	6' HT.	50' X 20'	3
<b>SHRUBS</b>						
	BETH	BERBERIS THUNBERGII "ATROPURPUREA"	RED BARBERRY	5 GAL.	4' X 5'	9
	JUCH	JUNIPERUS CHINENSIS "BLUE POINT"	BLUE POINT (UPRIGHT) JUNIPER	5 GAL.	12' X 6"	4
	JUPR	JUNIPERUS PROCUMBENS "GREEN MOUND"	GREEN MOUND (SPREADING) JUNIPER	5 GAL.	1' X 8'	14
	PRBE	PRUNUS BESSEYI PAWNEE BUTTES	PAWNEE BUTTES SANDCHERRY	5 GAL.	1.5' X 6'	15
	RORU	ROSA RUGOSA	RUGOSA SHRUB ROSE	5 GAL.	6' X 5'	15
	SYRV	SYRINGA VIRGARIS	COMMON PURPLE LILAC	5 GAL.	6' X 5'	12
<b>WILDFLOWER SEED</b>						
	SEED	IRRIGATED WILDFLOWER SEED MIX	SEE SEED NOTES, SHEET L1.1	---	---	3,287 SF
<b>MISCELLANEOUS</b>						
	WOOD MULCH	3" DEPTH RECYCLED WOOD FIBER MULCH: MOCHA CHIP	IN PLANTING AREAS AS MARKED ON PLANS	---	---	1,688 SF
	ROCK MULCH	3" DEPTH: TAN COBBLE	ALL OTHER SHRUB BEDS	---	---	13,470 SF
	FENCE	6" CEDAR FENCE	6" HIGH CEDAR FENCE W/ 4" PICKETS	---	---	688 LF
	STEEL EDGING	BLACK STEEL EDGING	SEE PLANTING NOTES	---	---	312 LF

SEE SHEET L0.0 FOR PLANTING NOTES

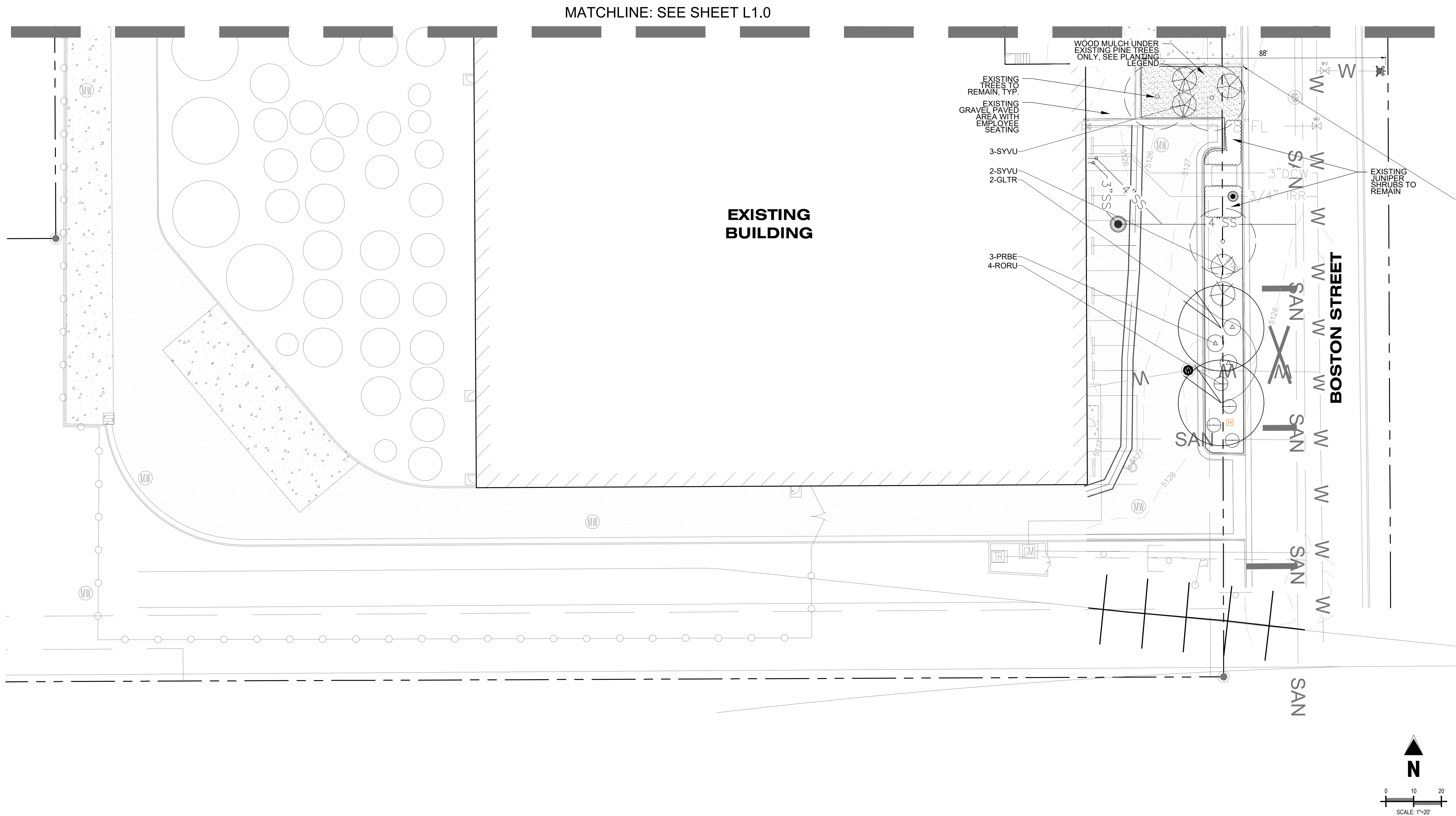


Diagram illustrating the layout of the 3-digit decimal number:

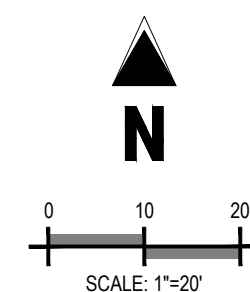
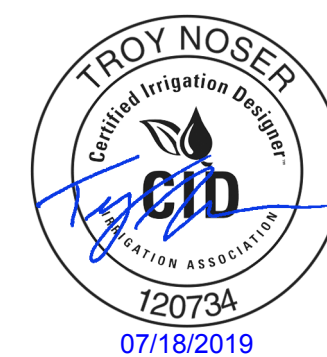
- Top digit: **X** (CONTROLLER STATION NUMBER)
- Bottom-left digit: **XX** (GALLONS PER MINUTE)
- Bottom-right digit: **XX** (VALVE SIZE)

IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, PROVIDE AND INSTALL SCH. 40 PVC SLEEVES FOR ALL CONTROLLER WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES.

1. IRRIGATION DESIGN IS NOT AN EXACT SCIENCE. IF IT BASED ON THEORIES, ASSUMPTIONS, AND/OR INFORMATION PROVIDED BY CIVIL MODEL/SUTLITES/IMMEDIATELY ENTITIES AND THUS DIAGRAMMATIC IN NATURE.
2. CONTRACTOR SHALL INSTALL MAINLINES 4"2" FROM PAVEMENT EDGE IN PLANTING AREAS, ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS AS INDICATED ON THESE PLANS.
3. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE AND VISIBLE IRRIGATION EQUIPMENT (CONTROLLERS, BACKFLOW PREVENTERS, METER PITS, ETC.) WITH THE OWNERS' AUTHORIZED REPRESENTATIVE PRIOR TO THE INSTALLATION. THE INSTALLATION OF THESE ITEMS SHALL BE INTEGRATED WITHIN DESIGNATED LANDSCAPE AREAS. FAILURE TO LOCATE THIS EQUIPMENT IN AN AREA DESIGNATED FOR THEM IN THE IRRIGATION CONTRACTOR BEING REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.
4. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE DRAWINGS. THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATIC & OPERATING WATER PRESSURE PRIOR TO CONSTRUCTION OF ANY COMPONENT OF THE IRRIGATION SYSTEM. AFTER FIELD VERIFICATION, THE IRRIGATION CONTRACTOR SHALL NOTIFY THE OWNER, OWNERS REPRESENTATIVE, LANDSCAPE ARCHITECT, & IRRIGATION DESIGNER OF THE PRESSURE READING FOR THE TAP.
5. ALL PRESSURIZED MAINLINES, VALVES, DRIP AND ROTOR AND SPRAY HEADS SHALL BE INSTALLED A MINIMUM OF 3' AWAY FROM ANY BUILDING FOUNDATION. IF THIS EQUIPMENT IS SHOWN WITHIN THE 3' OFFSET ON THESE PLANS, IT IS FOR THE PURPOSE OF GRAPHIC CLARITY ONLY.
6. REFER TO SHEET IR-1.3 FOR IRRIGATION NOTES AND IRRIGATION DETAILS.

1. THE LANDSCAPE CONTRACTOR IS REQUIRED TO CONTACT THE COUNTY PUBLIC WORKS DEPARTMENT, AND ANY OTHER PUBLIC OR PRIVATE AGENCY NECESSARY FOR UTILITY LOCATION PRIOR TO ANY CONSTRUCTION.
2. THIS DRAWING IS A PART OF A COMPLETE SET OF BID DOCUMENTS, SPECIFICATIONS, ADDITIONAL DRAWINGS, AND EXHIBITS. UNDER NO CIRCUMSTANCES SHOULD THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES WITHOUT EXAMINING ALL DRAWINGS, SPECIFICATIONS, AND EXHIBITS, AND REVIEWING ALL RELATED DOCUMENTS.
3. THE LOCATION OF THE ALL UNDERGROUND UTILITIES ARE LOCATED ON THE ENGINEERING DRAWINGS FOR THIS PROJECT. THE MOST CURRENT REVISION IS HERE IN MADE PART OF THIS DOCUMENT. UNDERGROUND UTILITIES EXIST THROUGHOUT THIS SITE AND MUST BE LOCATED PRIOR TO ANY CONSTRUCTION ACTIVITY. WHERE UNDERGROUND UTILITIES ARE NOT FIELD ADJUSTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPROVED BY A REPRESENTATIVE OF THE OWNER. NEITHER THE OWNER NOR THE LANDSCAPE ARCHITECT ASSUMES ANY RESPONSIBILITY WHATSOEVER, IN RESPECT TO THE CONTRACTORS ACCURACY IN LOCATING THE INDICATED PLANT MATERIAL, AND UNDER NO CIRCUMSTANCES SHOULD THESE PLANS BE USED WITHOUT REFERRING THE ABOVE MENTIONED DOCUMENTS.



VALVE NUMBER	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
VALVE SIZE	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	OPEN	OPEN
G.P.M.	3.1	4.6	8.2	8.0	7.3	1.9	1.7	0.3	OPEN	OPEN
OPERATION PSI	40	40	40	40	40	40	40	40	OPEN	OPEN
ZONE TYPE	ROTATOR	ROTATOR	ROTATOR	ROTATOR	ROTATOR	DRIP	DRIP	DRIP	OPEN	OPEN



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## IR1.1

SYMBOL	MANUF.	MODEL NO.	DESCRIPTION	REMARKS/DETAIL
<b>CONTROLLERS AND SENSORS</b>				
	HUNTER	I-CORE 10 STATION	IRRIGATION CONTROLLER TO BE A HUNTER IC-1000-M, WITHIN METAL VANDAL RESISTANT LOCKABLE PEDESTAL CABINET. IRRIGATION CONTROLLER TO BE LOCATED AS DIRECTED BY OWNER OR OWNERS REPRESENTATIVE.	DETAIL 1 / IR.13
	HUNTER	SOLAR-SYNC	ET/RAIN/FREEZE SENSOR - MOUNT PER DETAIL AND PLAN LOCATION	DETAIL 4 / IR.13
<b>POINT OF CONNECTION</b>				
	PER CITY OR WATER DISTRICT CODES AND STANDARDS		3/4" POINT OF CONNECTION. REFERENCE CIVIL PLANS FOR TAP LOCATION.	SEE P.O.C. DIAGRAM THIS SHEET
	PER CITY OR WATER DISTRICT CODES AND STANDARDS		IRRIGATION METHOD. REFERENCE CIVIL PLANS FOR METHOD LOCATION.	SEE P.O.C. DIAGRAM THIS SHEET
	FEBCO	MODEL 825YA	3/4" BACKFLOW PREVENTER.MOUNT IN GUARDS/HACK MODEL #CS-1 W/ FROST GUARD BAG MODEL #6G-1 FOR WINTERIZATION. SEE POINT OF CONNECTION SCHEMATIC DIAGRAMS	DETAIL 2 / IR.13
<b>VALVES</b>				
	HUNTER	IBV-101G-FS	3/4" MASTER VALVE	DETAIL 16 / IR.13
	HUNTER	FLOW-SYNC	3/4" HFS FLOW SENSOR WITH FCT SCHEDULE 40 RECEPTACLE TEE	DETAIL 12 / IR.13
	HUNTER	ICV-FS-ADJ	REMOTE CONTROL VALVE. SIZE PER PLAN. ADJUST PRESSURE REGULATOR BETWEEN 60-55PSI. GROUP VALVES TO FIT WITHIN WATER SCHEDULES/MAXIMIZE AVAILABLE GPMs.	DETAIL 3 / IR.13
	RAINBIRD	XCZ-100-PRB-COM (0.3-20 GPM)	DRIP CONTROL ZONE KITS (24 VAC-60HZ-IRRIGATION CONTRACTOR TO VERIFY DRIP ZONES PRESSURE REQUIREMENTS AND USE VALVE REGULATOR FOR HIGH PRESSURES. GROUP VALVES TO FIT WITHIN WATER SCHEDULES/MAXIMIZE AVAILABLE GPMs.	DETAIL 5 / IR.13
	HUNTER	HQ-44-LRC	1" QUICK COUPLER WITH LOCK	DETAIL 9 / IR.13
	HUNTER	AFV-B	AUTOMATIC FLUSH VALVE WITH BARB CONNECTION.	DETAIL 13 / IR.13
	WATTS	WGV-X	GATE VALVE. SEE POINT OF CONNECTION SCHEMATIC DIAGRAMS	DETAIL 7 / IR.13
	ANY APPROVED	ANY APPROVED	PVC BALL VALVE - SIZE PER MAINLINE SIZE	DETAIL 11 / IR.13
<b>MAIN LINE / LATERALS &amp; SLEEVES</b>				
	ANY APPROVED	PRESSURIZED PVC MAINLINE - 1-1/2" CLASS 200 PVC PIPE UNLESS OTHERWISE NOTED ON THE PLANS		DETAIL 10 / IR.13
	ANY APPROVED	LATERAL LINE - USE CLASS 200 PVC, SIZE 1"-INCH SIZE UNLESS OTHERWISE NOTED ON THE PLANTS. INSTALL ANTI-FREEZE DRAINS AT LOW POINTS.		DETAIL 10 / IR.13
	ANY APPROVED	IRRIGATION SLEEVE - SCHEDULE 40 PVC TWICE THE SIZE OF THE PIPE TO BE INSERTED, ONE SLEEVE PER PIPE		DETAIL 10 / IR.13
	ANY APPROVED	CONTROL WIRING SLEEVE - 2" SCHEDULE 40 PVC PIPE (SEE WIRING/SPlicing/SLEEVE NOTE, THIS SHEET)		DETAIL 10 / IR.13

SPRAY NOTES: 1. CONTRACTOR SHALL USE RADIUS REDUCTION SCREWS ON MP ROTATORS AS NECESSARY TO ACHIEVE APPROPRIATE RADII COVERAGE.			
<b>DRIP SYSTEM</b>			
LAYOUT 	RAINBIRD FOR LANDSCAPE BED AREAS - XBS-XXX	XERI BLACK STRIPE POLY TUBING (OR APPROVED EQUAL), CONNECTION TO PVC LATERAL PER CONTRACTOR, ATTACH TREE & SHRUB Drip EMITTERS PER THE EMITTER SCHEDULE BELOW. USE 3/4-INCH POLY TUBING SIZE UNLESS OTHERWISE NOTED. FLOWS IN GPM FOR LINE CHANGES SHALL BE: (3/4"-1 TO 7 GPM), (1"-8 TO 14 GPM), (1 1/2"-15 TO 35 GPM). INSTALL SEVERAL INLINE CHECK VALVES IN ZONES W/ LARGE ELEVATION DIFFERENCES. GROUP Drip CONTROLLER VALVES TOGETHER TO MAXIMIZE WATER WINDOWS.	DETAIL 8 / IR1.3
	HUNTER AFB-B	AUTOMATIC FLUSH VALVE WITH BARB CONNECTION.	DETAIL 13 / IR1.3
Drip EMITTER SCHEDULE	PROVIDE THE FOLLOWING Drip EMITTERS FOR EACH PLANT:	PLANTS, 1 GALLON AND SMALLER: 5 GALLON: UPRIGHT JUNIPERS: 10-15 GALLON: TREES, 1" TO 2-1/2" CALIPER: TREES, 3" TO 4" CALIPER:  1. XB-10PC - (1 GPH) EMITTER PER PLANT 2. XB-10PC - (2 GPH) EMITTERS PER PLANT 3. XB-10PC - (3 GPH) EMITTERS PER PLANT 4. XB-10PC - (4 GPH) EMITTERS PER TREE 7. XB-10PC - (7 GPH) EMITTERS PER TREE	-- --

IRRIGATION CONTROLLER 'A'										
VALVE NUMBER	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
VALVE SIZE	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	OPEN	OPEN
G.P.M.	3.1	4.6	8.2	8.0	7.3	1.9	1.7	0.3	OPEN	OPEN
OPERATION PSI	40	40	40	40	40	40	40	40	OPEN	OPEN
ZONE TYPE	ROTATOR	ROTATOR	ROTATOR	ROTATOR	ROTATOR	DRIP	DRIP	DRIP	OPEN	OPEN

[illegible]

**CAUTION**  
UTILITIES EXIST WITHIN CONSTRUCTION  
LIMITS. CONTRACTOR IS RESPONSIBLE FOR  
IDENTIFYING THEIR LOCATION PRIOR TO  
CONSTRUCTION.

## POINT OF CONNECTION 'A'

STATIC PRESSURE:          PSI TBD    SIZE OF TAP: 3/4"

USE 3/4" TAP INTO 12" WATERMAIN, SEE CIVIL SHEETS FOR LOCATION.

3/4" TAP TO COPER SERVICE FROM THE TAP THROUGH THE IRRIGATION BACKFLOW, TO THE MASTER VALVE. CONTRACTOR SHALL VERIFY LOCATION OF THE BURIED TAP AND FIELD VERIFY THE TAP LOCATION.

AUTHORIZED REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT.

SEE POINT OF CONNECTION DIAGRAM, THIS SHEET, FOR THE IRRIGATION SYSTEM EQUIPMENT CONFIGURATION.

THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATIC & OPERATING WATER PRESSURE PRIOR TO THE CONSTRUCTION. SEE GENERAL IRRIGATION NOTES.

IF THE WATER PRESSURE IN THE IRRIGATION SYSTEM EXCEEDS 100 PSI, THE IRRIGATION CONTRACTOR SHALL INSTALL A PRESSURE REDUCING / REGULATING VALVE TO MAINTAIN THE PRESSURE TO 80 PSI MAXIMUM. WHEN PRESSURE DROPS BELOW 65 PSI, THE IRRIGATION CONTRACTOR SHALL INSTALL A BOOSTER PUMP TO A MINIMUM PRESSURE OF 80 PSI.

## CONTROLLER NOTE

### CONTROLLER 'A'

- ONE (1) 10 STATION CONTROLLER. SEE LEGEND.
- TWO (2) OPEN STATIONS FOR FUTURE EXPANSION.
- STATION RUN ORDER SHALL MATCH PLANS.
- LOCATE CONTROLLER IN THE UTILITY CLOSET AS SPECIFIED ON THE BUILDING PLANS. VERIFY LOCATION WITH OWNER OR REPRESENTATIVE.
- 120 VAC POWER TO CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. HOOK-UP OF CONTROLLERS TO 120 VAC SHALL BE PERFORMED BY THE LANDSCAPE CONTRACTOR.
- CONDUIT FROM INSIDE THE BUILDING TO EXTERIOR IRRIGATION SYSTEM SHALL BE PROVIDED BY OTHERS.

### VALVE KEY DIAGRAM

The diagram shows a rectangular box divided into three sections. The top section contains a large 'X'. The bottom section is divided into two smaller boxes, each containing 'XX'. Three arrows point from the right side of the box to labels: the top arrow points to 'CONTROLLER STATION NUMB', the middle arrow points to 'GALLONS PER MINUTE', and the bottom arrow points to 'VALVE SIZE'. A fourth arrow points from the left side of the box to the 'XX' section.

## WIRING/SLEEVING NOTES

IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, PROVIDE AND INSTALL SCH. PVC SLEEVES FOR ALL CONTROLLER WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES.



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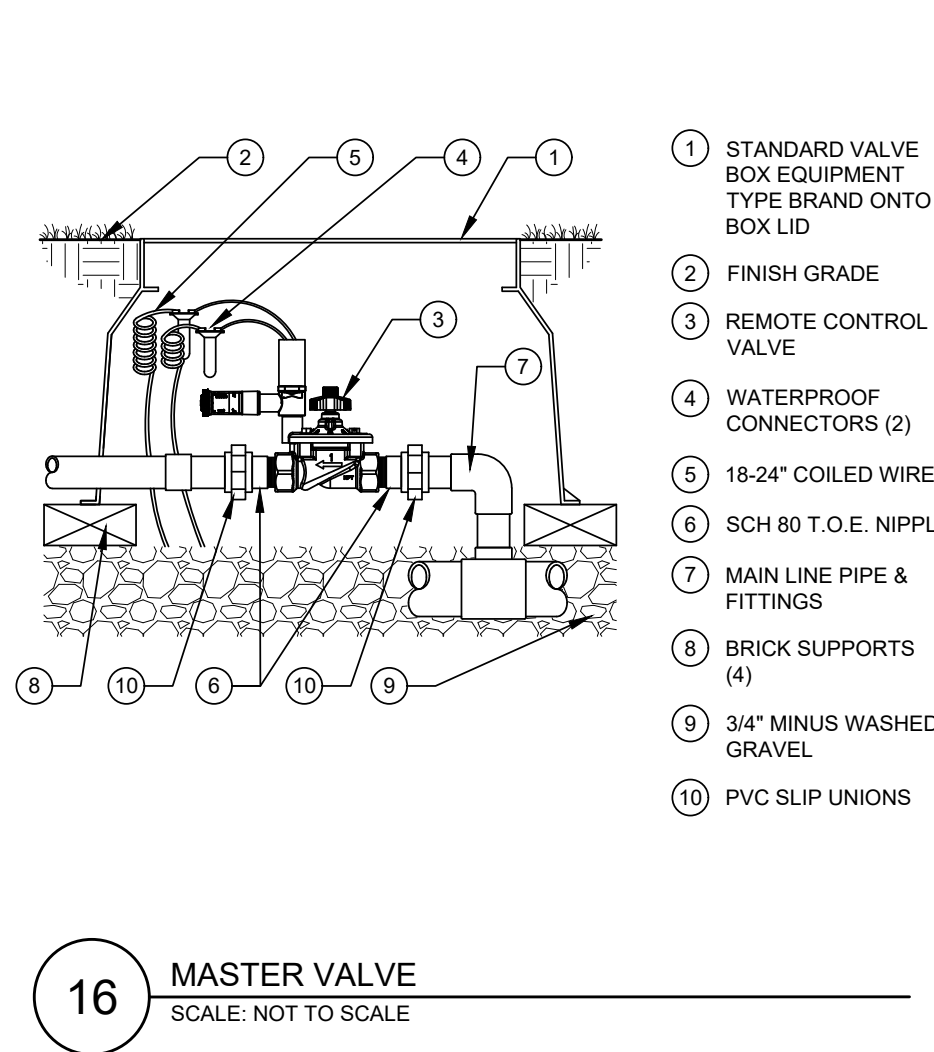
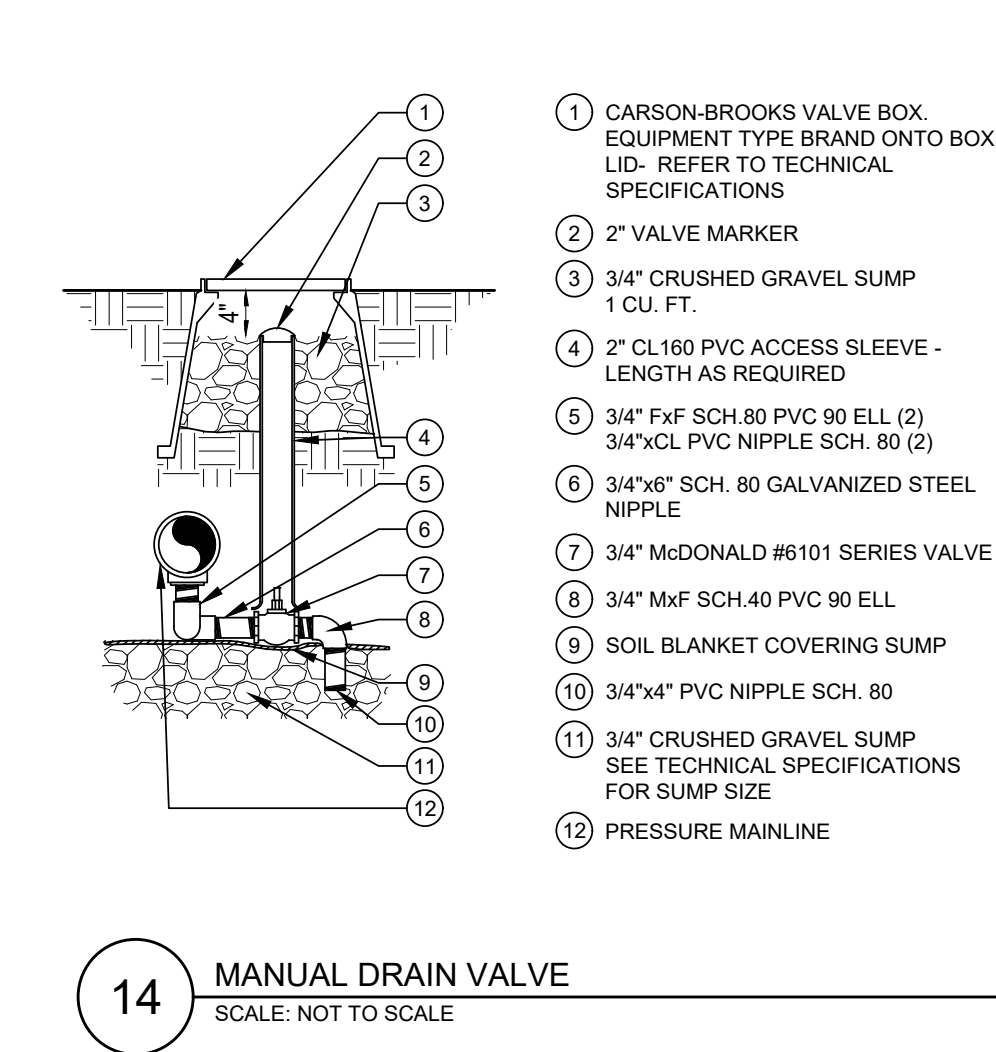
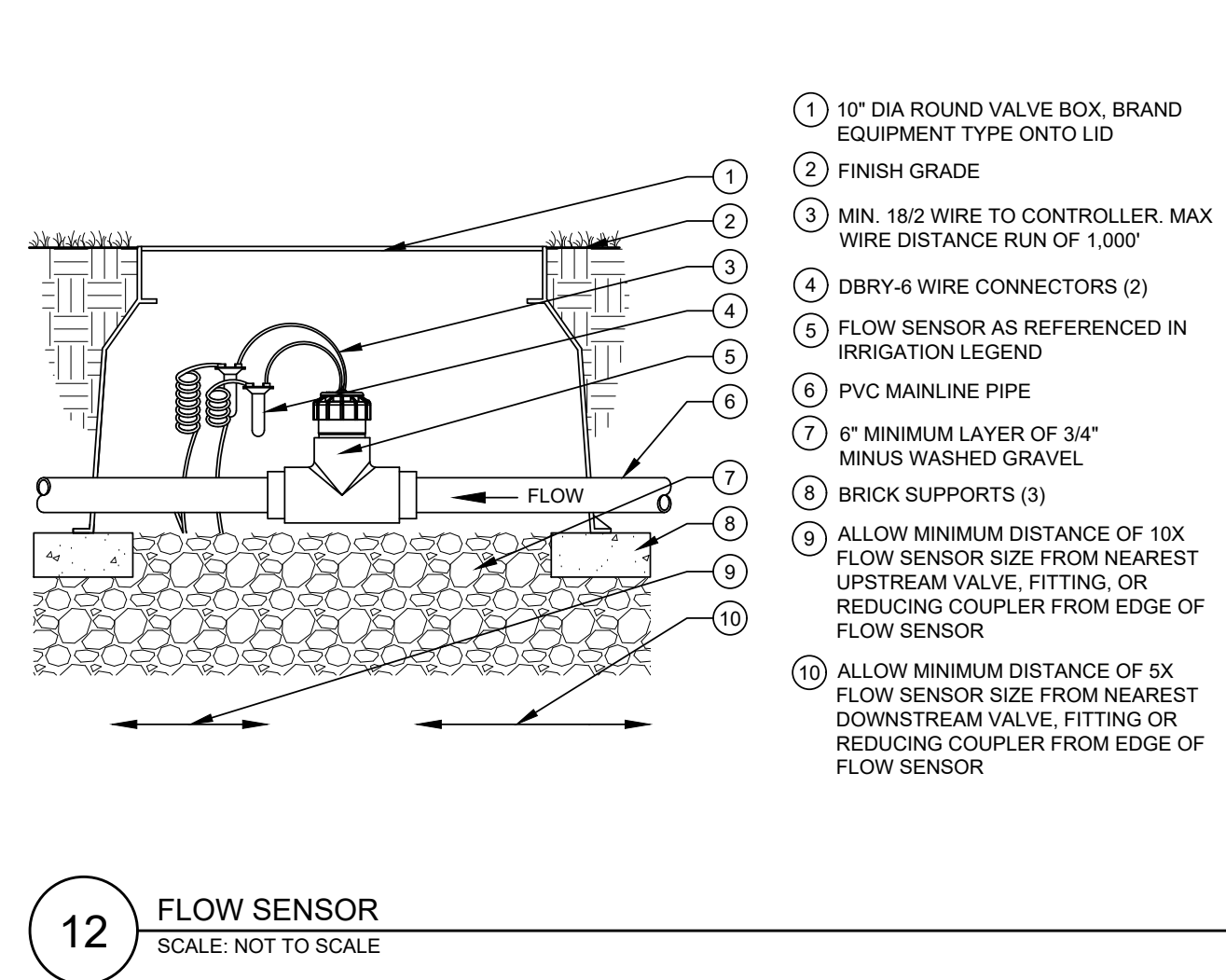
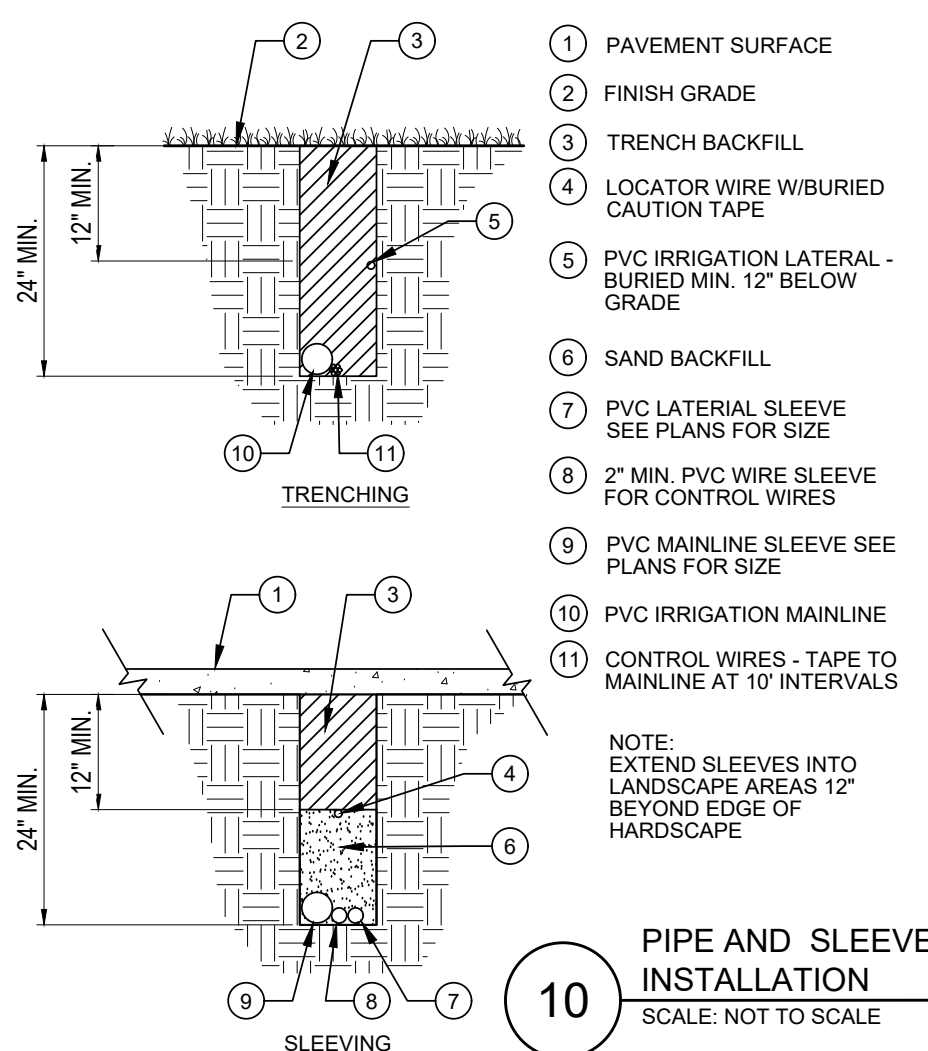
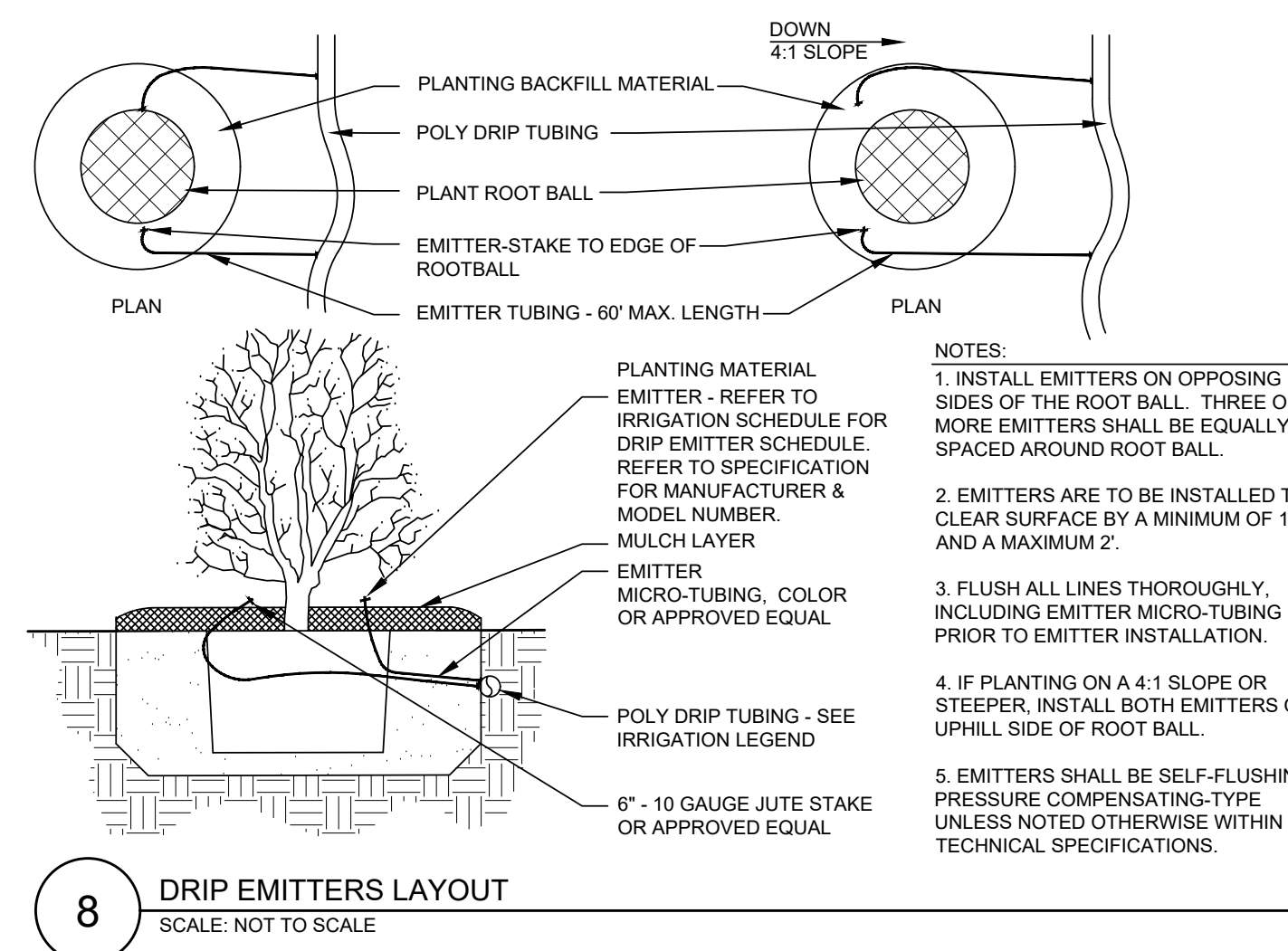
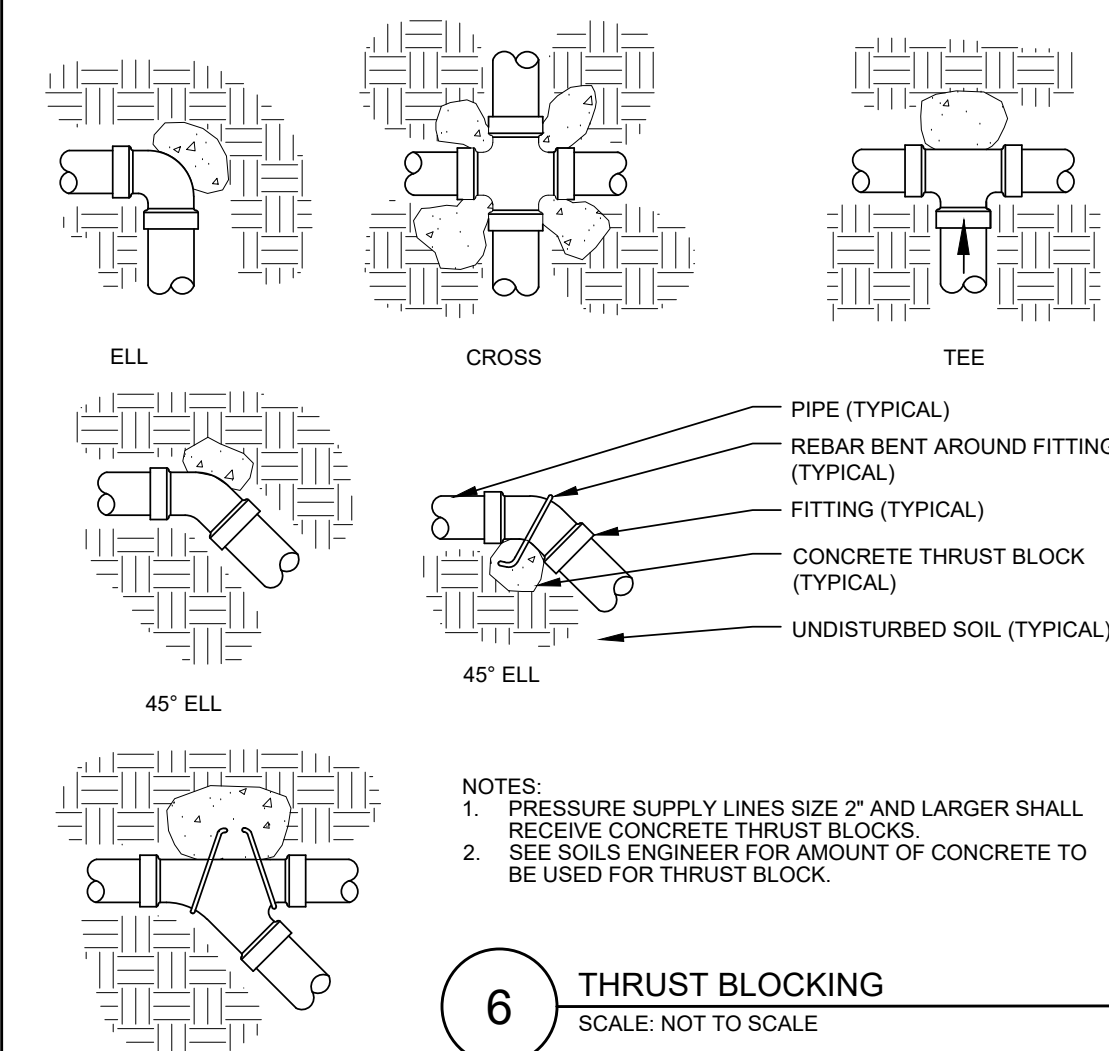
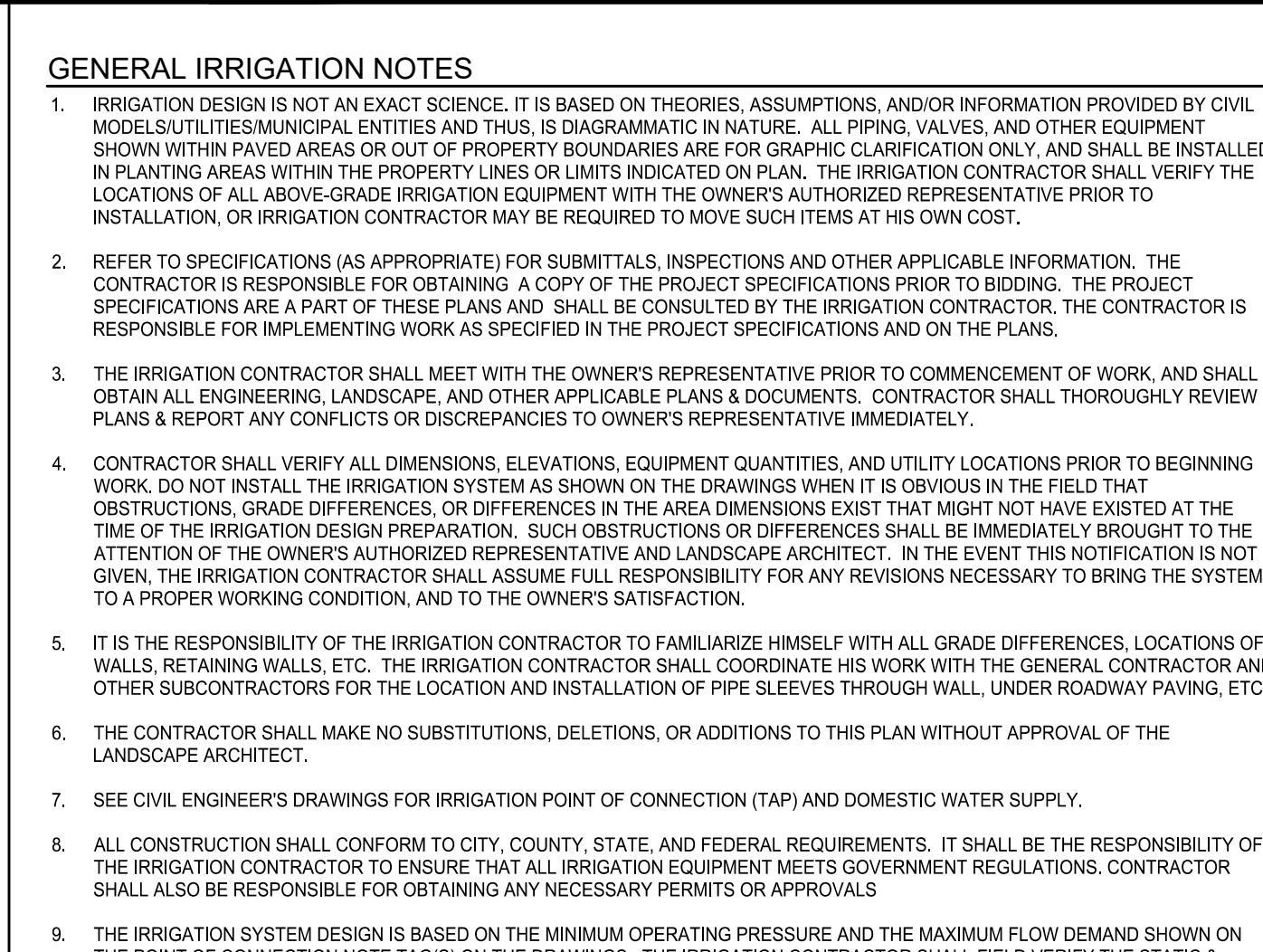
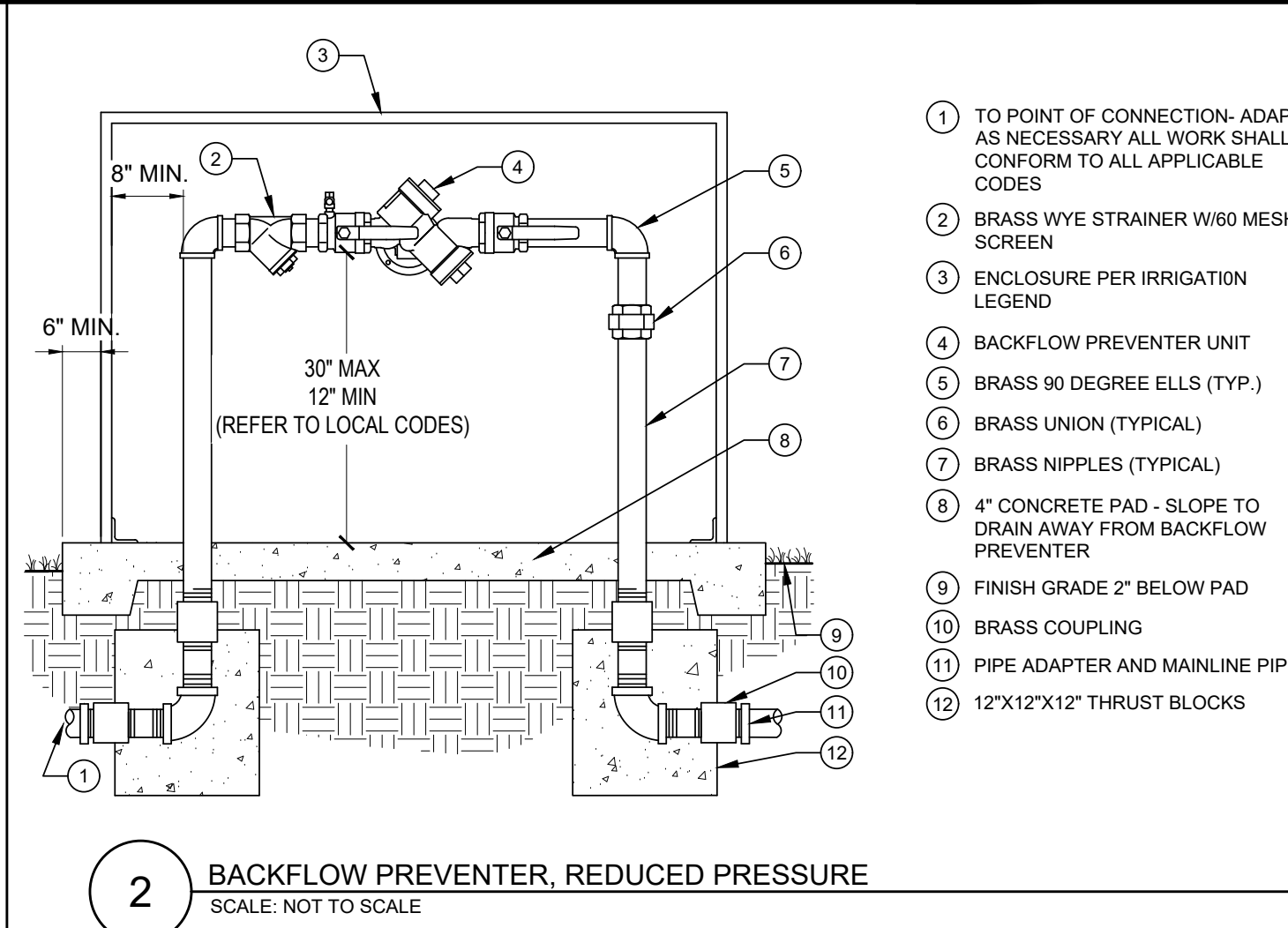
Project No:	CPI000001
Drawn By:	TDN
Checked By:	TDN
Date:	03/20/2019

IRRIGATION PLAN

## IR1.2

H:\Crystal Packaging\CO, Henderson\CAO D2 Plan\CPL\_R0.0.dwg - Troy Noser - 7/16/2019

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## GENERAL IRRIGATION NOTES

- IRRIGATION DESIGN IS NOT AN EXACT SCIENCE, IT IS BASED ON THEORIES, ASSUMPTIONS, AND/OR INFORMATION PROVIDED BY CIVIL MODELS, UTILITIES, MUNICIPAL ENTITIES AND THIS, IS DIAGRAMMATIC IN NATURE. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR GRAPHIC CLARIFICATION ONLY, AND SHALL BE INSTALLED IN UNPAVED AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATION OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.
- REFER TO SPECIFICATIONS (AS APPROPRIATE) FOR SUBMITTALS, INSPECTIONS AND OTHER APPLICABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE PROJECT SPECIFICATIONS PRIOR TO BIDDING. THE PROJECT SPECIFICATIONS ARE A PART OF THESE PLANS AND SHALL BE CONSULTED BY THE IRRIGATION CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WORK AS SPECIFIED IN THE PROJECT SPECIFICATIONS AND ON THE PLANS.
- THE IRRIGATION CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK, AND SHALL OBTAIN ALL NECESSARY INFORMATION FROM THE OWNER. THE IRRIGATION CONTRACTOR SHALL THOROUGHLY REVIEW PLANS AND SHALL REPORT ANY CONFLICTS OR DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, AND UTILITY LOCATIONS PRIOR TO BEGINNING WORK. DO NOT INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE EXISTED AT THE TIME OF THE IRRIGATION DESIGN PREPARATION. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT GIVEN, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY TO BRING THE SYSTEM TO A PROPER WORKING CONDITION, AND TO THE OWNER'S SATISFACTION.
- IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, RETAINING WALLS, ETC. THE IRRIGATION CONTRACTOR SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALL, UNDER ROADWAY PAVING, ETC.
- THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
- SEE CIVIL ENGINEER'S DRAWINGS FOR IRRIGATION POINT OF CONNECTION (TAP) AND DOMESTIC WATER SUPPLY.
- ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS
- THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE POINT OF CONNECTION NOTE TAG(S) ON THE DRAWINGS. THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATUS & LOCATION OF THE WATER PRESSURE MEASUREMENT POINT(S) AND THE PRESSURE DEMAND. THE CONTRACTOR SHALL FIELD VERIFY THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED OR PRESSURES HAVE GREATLY CHANGED PRIOR TO THE START OF THE IRRIGATION SYSTEM CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY FOR AN ALTERED OR A NEW SUB-IRRIGATION



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Date:	03/20/2019

IRRIGATION NOTES &amp; DETAILS

### IR1.3

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