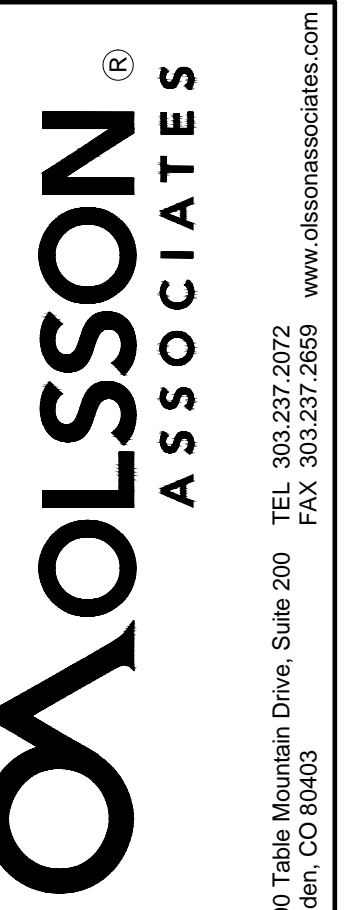
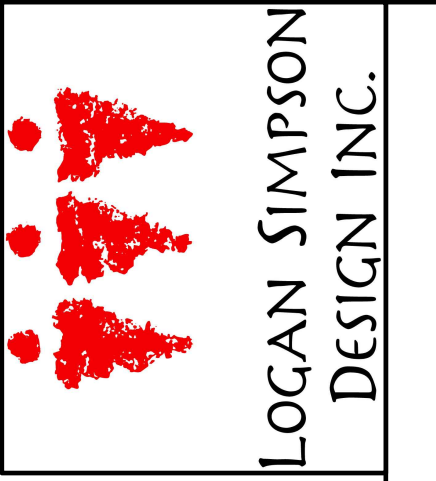


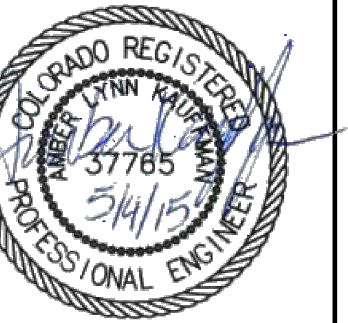
CITY OF FRUITA GENERAL NOTES:

- NOTES GIVEN HERE SHALL APPLY TO ALL SHEETS.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF FRUITA 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS REQUIRED TO PERFORM CONSTRUCTION WITHIN CITY RIGHT-OF-WAY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND IMPLEMENTING A TRAFFIC CONTROL PLAN FOR ALL CONSTRUCTION ACTIVITIES IN CITY RIGHT-OF-WAY. CONTACT THE PUBLIC WORKS DEPARTMENT AT 858-9558 TO ACQUIRE AN EXCAVATION IN RIGHT-OF-WAY PERMIT AND TO SUBMIT A TRAFFIC CONTROL PLAN.
- INSTALLATION OF NEW IMPROVEMENTS, INCLUDING MATERIALS, CONSTRUCTION, PERFORMANCE AND TESTING, SHALL BE IN STRICT ACCORDANCE WITH THE LATEST STANDARDS AND REQUIREMENTS ADOPTED BY THE CITY OF FRUITA. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF FRUITA. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE CITY OF FRUITA'S STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL FAMILIARIZE HIS/HERSELF WITH THE GEOTECHNICAL TESTING REQUIREMENTS OF THE CITY OF FRUITA. THE RESULTS OF THE REQUIRED TYPES OF TESTS AND NUMBERS OF PASSING TESTS SHALL BE FURNISHED TO THE CITY FOR VERIFICATION BEFORE FINAL ACCEPTANCE WILL BE GRANTED. ALL FAILING TESTS SHALL BE BROUGHT TO IMMEDIATE ATTENTION OF THE CITY ENGINEER OR HIS/HER REPRESENTATIVE, AND RETESTS SHALL BE PERFORMED UNTIL PASSING RESULTS ARE OBTAINED. ALL UTILITY LINES, INCLUDING SERVICE LINES FALLING WITHIN THE PUBLIC RIGHT-OF-WAY OR PUBLIC EASEMENTS SHALL BE TESTED.
- ONLY MATERIALS ON WHICH A PROCTOR TEST CAN BE PERFORMED AND ACCURATE NUCLEAR DENSITY TESTS CAN BE RUN ARE APPROVED UTILITY TRENCH BACKFILL UNLESS OTHERWISE APPROVED BY THE ENGINEER (FLOWABLE FILL IS ACCEPTABLE).
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE CITY ENGINEER IN ADVANCE OF REQUIRED INSPECTIONS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF SITE CONDITIONS ARE ENCOUNTERED WHICH ARE DIFFERENT THAN AS SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL NOTIFY THE ENGINEER IF SITE CONDITIONS ARE ENCOUNTERED IF SITE CONDITIONS WARRANT A CHANGE IN DESIGN FROM THAT SHOWN ON THESE DRAWINGS.
- ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE VERIFIED FROM APPROVED SUBDIVISION PLAT BEFORE CONSTRUCTION.
- LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR IS TO CONTACT AFFECTED UTILITY FOR SPECIFIC LOCATIONS BEFORE DIGGING.
- PRIOR TO BEGINNING INSTALLATION OF NEW UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL EXCAVATE (POTHOLE) EXISTING UTILITIES AT ALL CROSSING POINTS TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES TO ENSURE THAT THE CROSSING CAN BE MADE AS SHOWN ON THESE DRAWINGS.
- NO CONSTRUCTION WORK SHALL BE PERFORMED OUTSIDE OF THE PROJECT OWNER'S PROPERTY BOUNDARY EXCEPT WITHIN CONSTRUCTION EASEMENTS, PERPETUAL EASEMENTS, AND RIGHT-OF-WAY SHOWN ON THESE DRAWINGS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN LEGAL PERMISSION TO OCCUPY PROPERTY OTHER THAN THE PROJECT SITE IF THE CONTRACTOR DETERMINES THAT ACCESS IS REQUIRED. ANY DAMAGE TO PRIVATE FACILITIES OUTSIDE THESE LIMITS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
- ALL ROAD CUTS AND CONSTRUCTION ACTIVITIES WITHIN EXISTING ROAD RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCY CONTROLLING THE RIGHT-OF-WAY.
- ALL EXCESS MATERIAL FROM EITHER UTILITY OR STREET CONSTRUCTION INCLUDING VEGETATION, ROOTS, CONCRETE, ROCKS, OR OTHER DEBRIS SHALL BE HAULED FROM THE PROJECT BY THE CONTRACTOR. NO SEPARATE PAY.
- IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL CONSTRUCTION WORK IS ACCOMPLISHED IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- ALL QUANTITIES SHOWN ON THESE DRAWINGS ARE ESTIMATES PROVIDED AS AN AID TO BIDDER/CONTRACTOR ONLY. BIDDER/CONTRACTOR SHALL BE RESPONSIBLE FOR SCALING DRAWINGS TO VERIFY QUANTITIES PRIOR TO BIDDING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND PERMITTING THE STORM WATER MANAGEMENT PLAN FOR DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING AND MAILING THE APPLICATION, PAYING THE PERMIT FEE, PREPARING THE PLAN, IMPLEMENTING THE PLAN, PERFORMING INSPECTIONS AS REQUIRED AND PERFORMING ALL REQUIRED CLOSE OUT ACTIVITIES. CONTACT THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT/WATER QUALITY CONTROL DIVISION AT (303) 692-3500 FOR INFORMATION REGARDING THE STORM WATER MANAGEMENT PROGRAM.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ENSURING THAT THE WATER SERVICE LINES AND FIRE HYDRANT LEADS MEET THE MINIMUM BURIAL DEPTH ESTABLISHED BY THE ACCEPTING AGENCY FOR INSTALLATIONS CROSSING UNDERNEATH BORROW DITCHES, DRAINAGE SWALES, AND CANALS.
- ALL MATERIALS SHALL BE HANDLED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL HAVE ONE SIGNED COPY OF PLANS AT THE JOB SITE AT ALL TIMES.

# PLANS FOR DOWNTOWN STREETScape IMPROVEMENTS EAST ASPEN AVENUE FROM MULBERRY ST. TO PEACH ST. FRUITA, CO MESA COUNTY



4690 Table Mountain Drive, Suite 200 TEL 303.237.2072  
Golden, CO 80403 FAX 303.237.2659 www.olsonassociates.com



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Know what's below. Call before you dig. CALL 811 SEVENTY-TWO HOURS PRIOR TO DIGGING, GRADING OR EXCAVATING FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REV. NO.	DATE	REVISIONS DESCRIPTION	REVISIONS

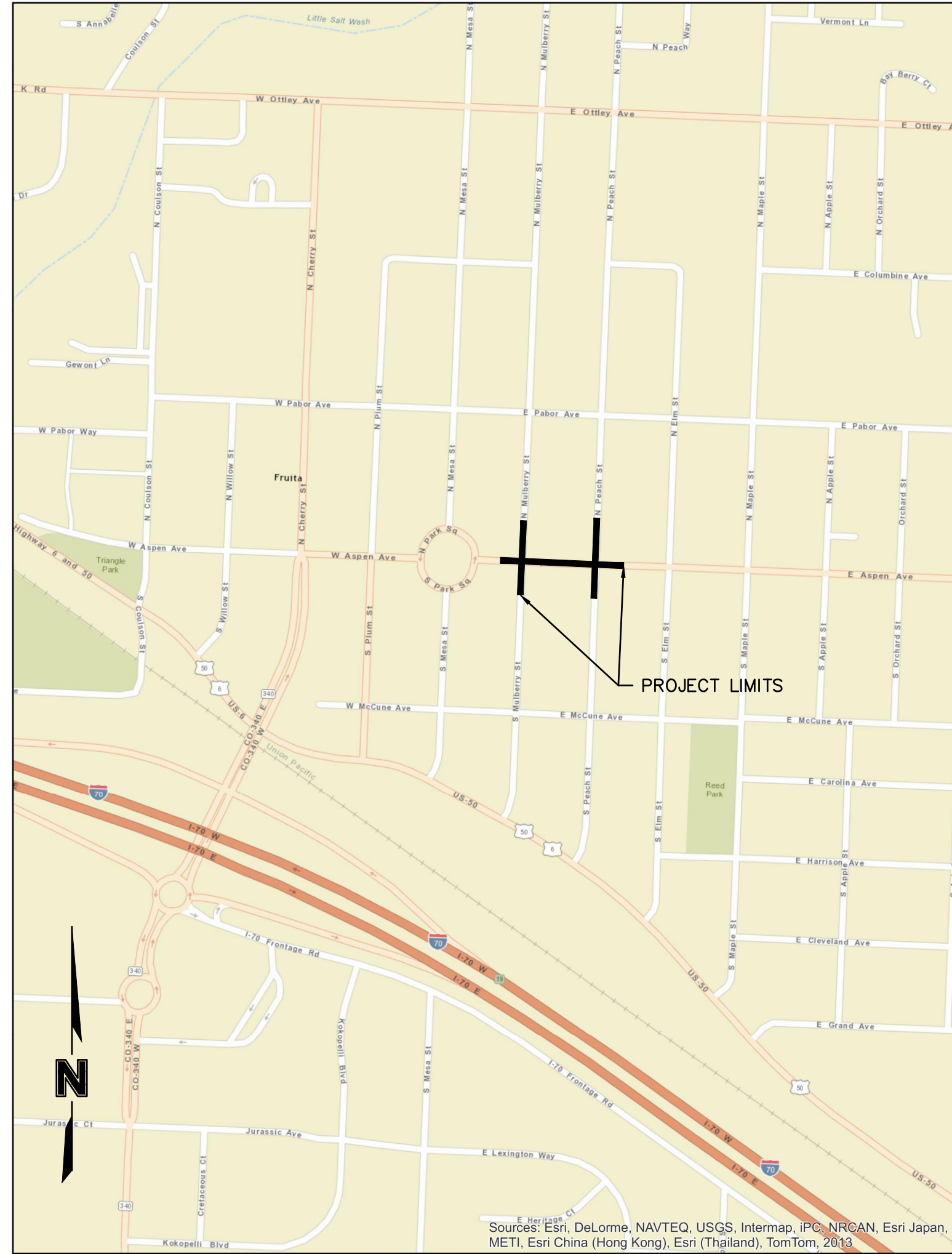
2015

COVER SHEET  
DOWNTOWN STREETScape IMPROVEMENTS  
FRUITA, CO

drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by: \_\_\_\_\_  
project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15

SHEET  
G1

Sheet List Table	
Sheet Number	Sheet Title
G1	COVER SHEET
G2	SURVEY CONTROL & ALIGNMENT DATA
G3	TYPICAL SECTIONS
G4	SUMMARY OF QUANTITIES
D1 - D2	DEMOLITION PLANS
PP1 - PP3	PLAN & PROFILE SHEETS
LS101 - LS104	STREETScape PLANS
SG1 - SG4	INTERSECTION GRADING DETAILS
SW1 - SW3	STORMWATER PLAN & PROFILE SHEETS
EL 1.1 - EL 1.2	ELECTRICAL SITE PLAN & DETAILS
SS1 - SS2	SIGNING AND STRIPING PLANS
EC1	EROSION CONTROL PLAN
DT1 - DT8	DETAILS
PS1 - PS10	PROJECT SPECIAL PROVISIONS



### VICINITY MAP

NOT TO SCALE

### LEGEND

- |      |                            |   |                            |
|------|----------------------------|---|----------------------------|
| ▲CTL | SURVEY CONTROL POINT       | ⊠ | TRAFFIC SIGNAL BOX         |
| ▲TBM | SURVEY BENCHMARK           | ⊙ | TRAFFIC SIGNAL MANHOLE     |
| ▲TBM | SURVEY TEMPORARY BENCHMARK | ⊙ | TRAFFIC SIGNAL POLE W/ ARM |
| ⊠    | GAS METER                  | ⊙ | TRAFFIC SIGNAL POLE        |
| ⊠    | GAS RISER                  | ⊠ | TRAFFIC SIGNAL CONTROL BOX |
| ⊠    | GAS MANHOLE                | ⊠ | TRAFFIC SIGNAL PEDESTAL    |
| ⊠    | GAS REGULATOR              | ⊠ | ELECTRIC MANHOLE           |
| ⊠    | TELEVISION PEDESTAL        | ⊠ | ELECTRIC METER             |
| ⊠    | FIBER BOX                  | ⊠ | ELECTRIC RISER             |
| ⊠    | FIBER PEDESTAL             | ⊠ | ELECTRIC BOX               |
| ⊠    | CABLE BOX                  | ⊠ | ELECTRIC CABINET           |
| ⊠    | CABLE VAULT                | ⊠ | ELECTRIC JUNCTION BOX      |
| ⊠    | TELEPHONE PEDESTAL         | ⊠ | SPRINKLER HEAD             |
| ⊠    | STORM MANHOLE              | ⊠ | SPRINKLER CONTROL VALVE    |
| ⊠    | STORM GRATE                | ⊠ | WATER METER PIT            |
| ⊠    | SANITARY MANHOLE           | ⊠ | FIRE HYDRANT               |
| ⊠    | YARD LIGHT                 | ⊠ | WATER METER                |
| ⊠    | LIGHT POLE                 | ⊠ | WATER VALVE                |
| ⊠    | POWER POLE                 | ⊠ | FLAG POLE                  |
| ⊠    | POWER POLE W/ LIGHT        | ⊠ | SIGN                       |
| ⊠    | GUY WIRE                   | ⊠ | BOLLARD                    |
| ⊠    | STUMP                      | ⊠ | WOOD POST                  |
| ⊠    | BUSH                       | ⊠ | STEEL POST                 |
| ⊠    | EVERGREEN TREE             | ⊠ | COLUMN                     |
| ⊠    | DECIDUOUS TREE             | ⊠ | BORE HOLE                  |

- |     |                                 |
|-----|---------------------------------|
| --- | SECTION LINE                    |
| --- | PROPERTY LINE                   |
| --- | CENTER LINE                     |
| --- | PROPOSED ROW LINE               |
| --- | EXISTING ROW LINE               |
| --- | UTILITY EASEMENT                |
| --- | EXISTING CONTOUR                |
| --- | EXISTING CONTOUR                |
| --- | PROPOSED MINOR CONTOUR          |
| --- | PROPOSED MAJOR CONTOUR          |
| --- | EXISTING TELEPHONE LINE         |
| --- | EXISTING SANITARY LINE          |
| --- | EXISTING STORM LINE             |
| --- | EXISTING GAS LINE               |
| --- | EXISTING WATER LINE             |
| --- | EXISTING CHAIN LINK FENCE       |
| --- | EXISTING OVERHEAD ELECTRIC      |
| --- | EXISTING PIPE LINE              |
| --- | GRADING LIMITS                  |
| --- | TEMPORARY CONSTRUCTION EASEMENT |
| --- | PROPOSED CHAIN LINK FENCE       |
| --- | PROPOSED WOOD PRIVACY FENCE     |
| --- | EXISTING TREELINE               |
| --- | CONSTRUCTION LIMITS             |

### ABBREVIATION TABLE

- |        |                                 |
|--------|---------------------------------|
| M.G.   | MATCH GRADE                     |
| P      | PAVEMENT                        |
| FG     | FINISHED GRADE                  |
| FL     | FLOW LINE                       |
| TC     | TOP OF CURB AT BACK OF CURB     |
| EP     | EDGE OF PAVEMENT                |
| R/W    | RIGHT OF WAY                    |
| TCE    | TEMPORARY CONSTRUCTION EASEMENT |
| PROP.  | PROPOSED                        |
| EXIST. | EXISTING                        |
| TYP.   | TYPICAL                         |
| (R)    | REMOVAL                         |
| CONST. | CONSTRUCT                       |
| TBM    | TEMPORARY BENCHMARK             |
| C.P.   | CONTROL POINT                   |
| D.N.D. | DO NOT DISTURB                  |
| U.I.P. | USE IN PLACE                    |
| ADJ.   | ADJUST                          |
| HMA    | HOT MIX ASPHALT                 |
| DIA.   | PIPE DIAMETER                   |
| T      | THICKNESS                       |

USER: stoney

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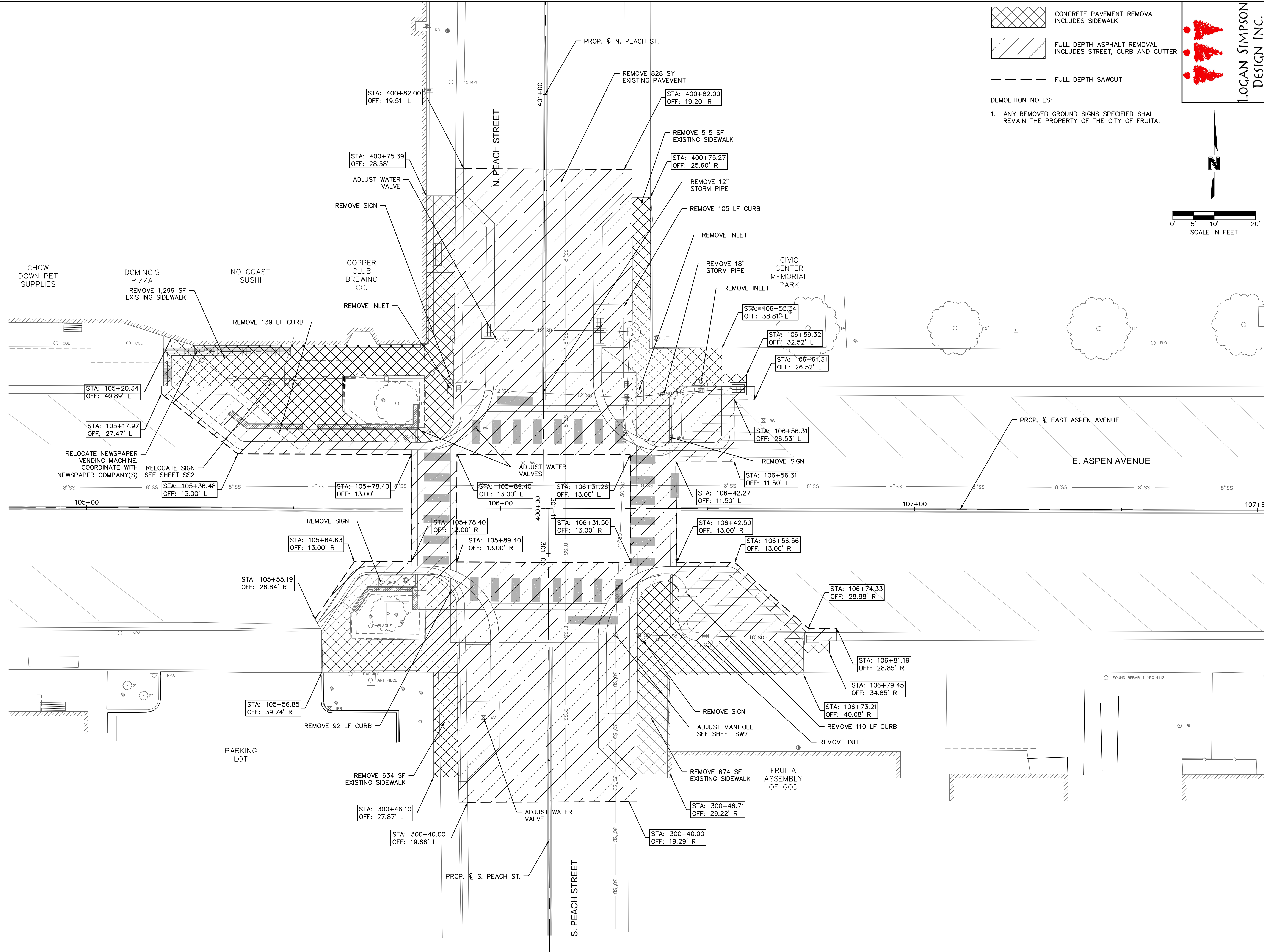








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 141169\_PSTM  
 L-SP-FRUITA STREETSCAPE

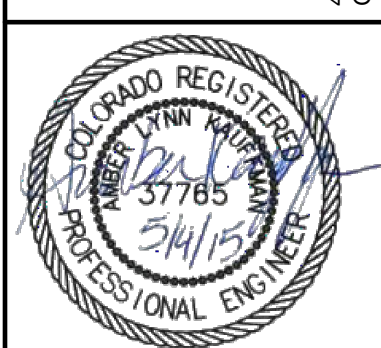


CONCRETE PAVEMENT REMOVAL INCLUDES SIDEWALK  
 FULL DEPTH ASPHALT REMOVAL INCLUDES STREET, CURB AND GUTTER  
 FULL DEPTH SAWCUT

DEMOLITION NOTES:  
 1. ANY REMOVED GROUND SIGNS SPECIFIED SHALL REMAIN THE PROPERTY OF THE CITY OF FRUITA.

SCALE IN FEET  
 0' 5' 10' 20'

LOGAN SIMPSON DESIGN INC.  
  
 OLSSON ASSOCIATES



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REV. NO.	DATE	REVISIONS DESCRIPTION

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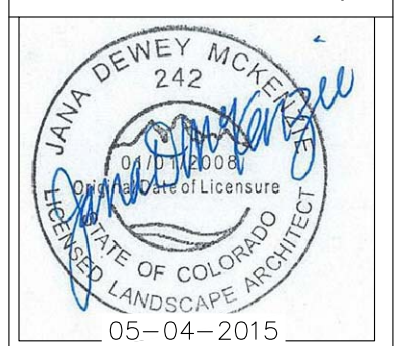
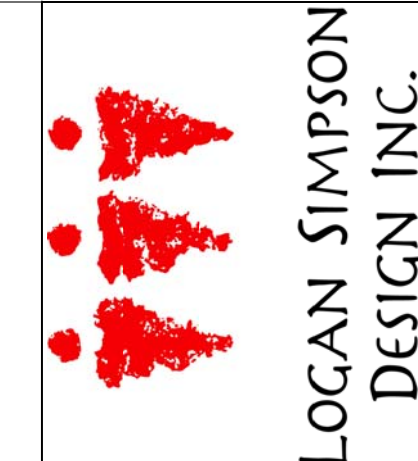




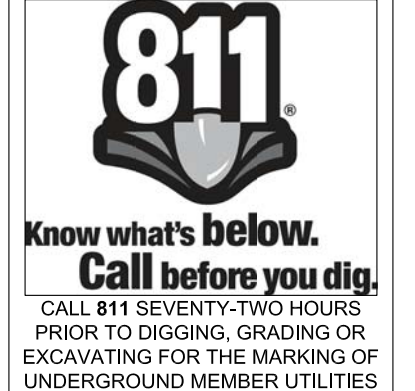








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REV. NO.	DATE	REVISIONS DESCRIPTION

**Streetscape Plans**

DOWNTOWN STREETScape IMPROVEMENTS

FRUITA, CO

2015

REVISIONS

drawn by: SS  
checked by: JM  
QA/QC by: JM  
project no.: 14-1169  
drawing no.:  
date: 05-04-15

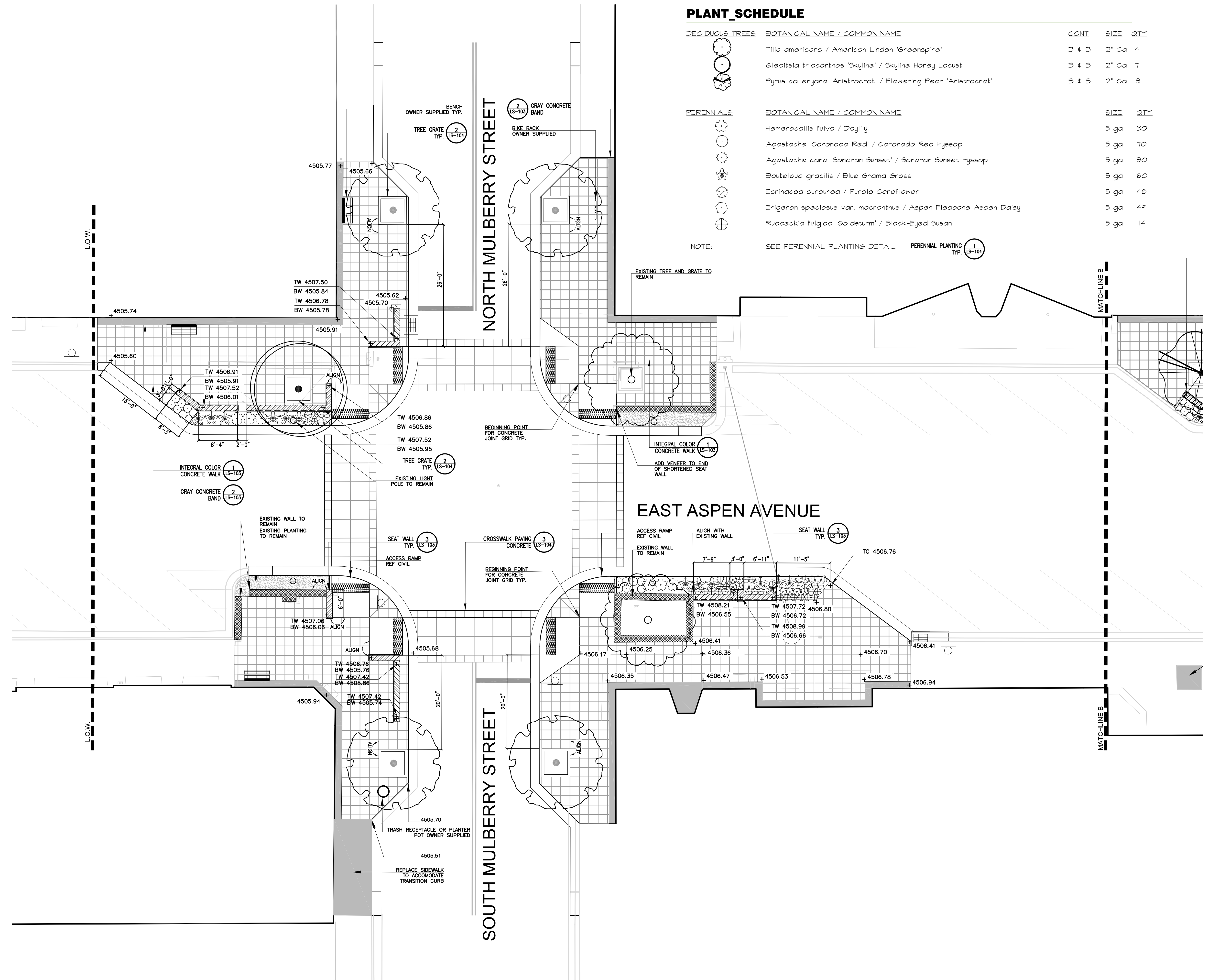
**PLANT SCHEDULE**

DECIDUOUS TREES	BOTANICAL NAME / COMMON NAME	CONT.	SIZE	QTY.
	<i>Tilia americana</i> / American Linden 'Greenspire'	B 4 B	2" Cal	4
	<i>Gleditsia triacanthos</i> 'Skyline' / Skyline Honey Locust	B 4 B	2" Cal	7
	<i>Pyrus calleryana</i> 'Aristocrat' / Flowering Pear 'Aristocrat'	B 4 B	2" Cal	3

PERENNIALS	BOTANICAL NAME / COMMON NAME	SIZE	QTY.
	<i>Hemerocallis fulva</i> / Daylily	5 gal	30
	<i>Agastache 'Coronado Red'</i> / Coronado Red Hyssop	5 gal	70
	<i>Agastache cana</i> 'Sonoran Sunset' / Sonoran Sunset Hyssop	5 gal	30
	<i>Bouteloua gracilis</i> / Blue Grama Grass	5 gal	60
	<i>Echinacea purpurea</i> / Purple Coneflower	5 gal	48
	<i>Erigeron speciosus</i> var. <i>macranthus</i> / Aspen Fleabane Aspen Daisy	5 gal	44
	<i>Rudbeckia fulgida</i> 'Goldsturm' / Black-Eyed Susan	5 gal	114

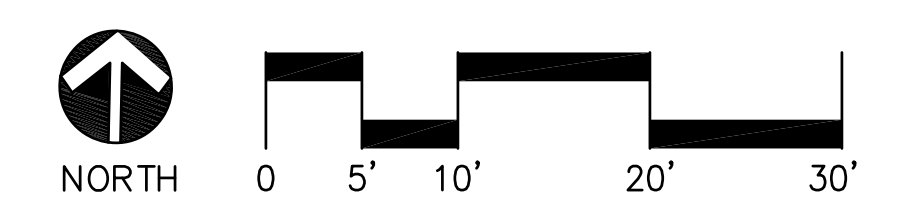
NOTE: SEE PERENNIAL PLANTING DETAIL PERENNIAL PLANTING TYP. (LS-104)

NOTES:  
IRRIGATION SYSTEM TO BE DESIGN BUILD IN THE FIELD  
ALL TREES TO RECEIVE DRIP IRRIGATION, ALL OTHER  
PLANT MATERIAL TO RECEIVE SPRAY IRRIGATION.



**LEGEND**

- INTEGRAL COLOR CONCRETE
- GRAY CONCRETE
- EXISTING WALL TO BE REMOVED
- EXISTING WALL TO REMAIN
- NEW SEAT WALL
- TREE GRATE-NEW
- EXISTING TREE TO REMAIN
- L.O.W. LIMIT OF WORK

















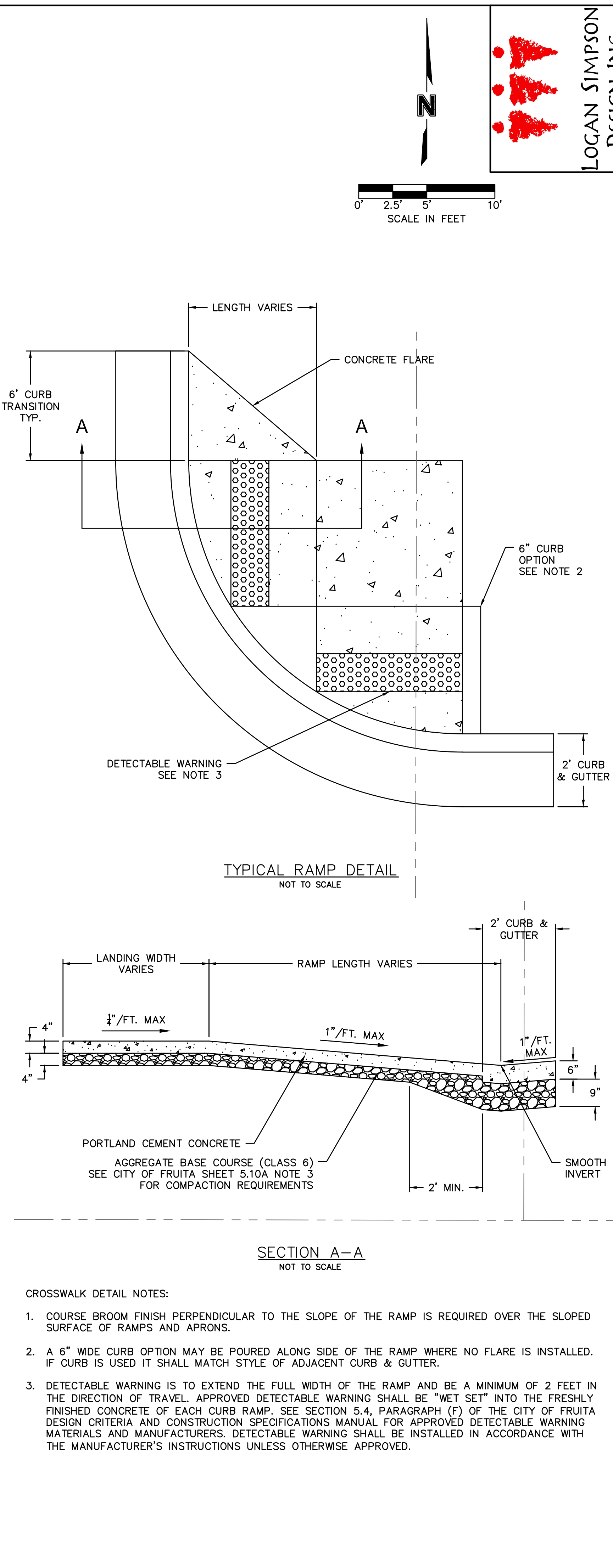
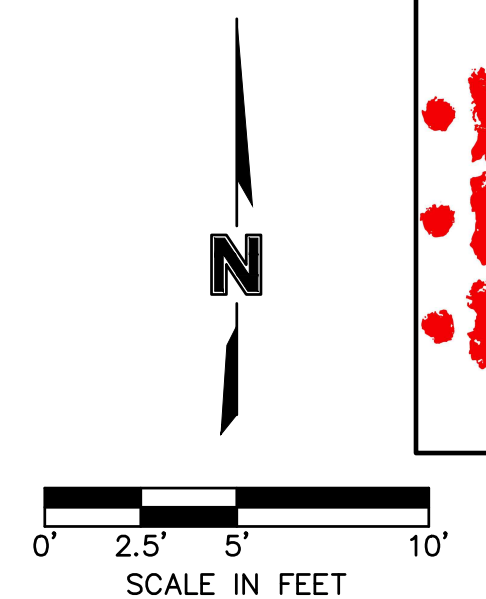
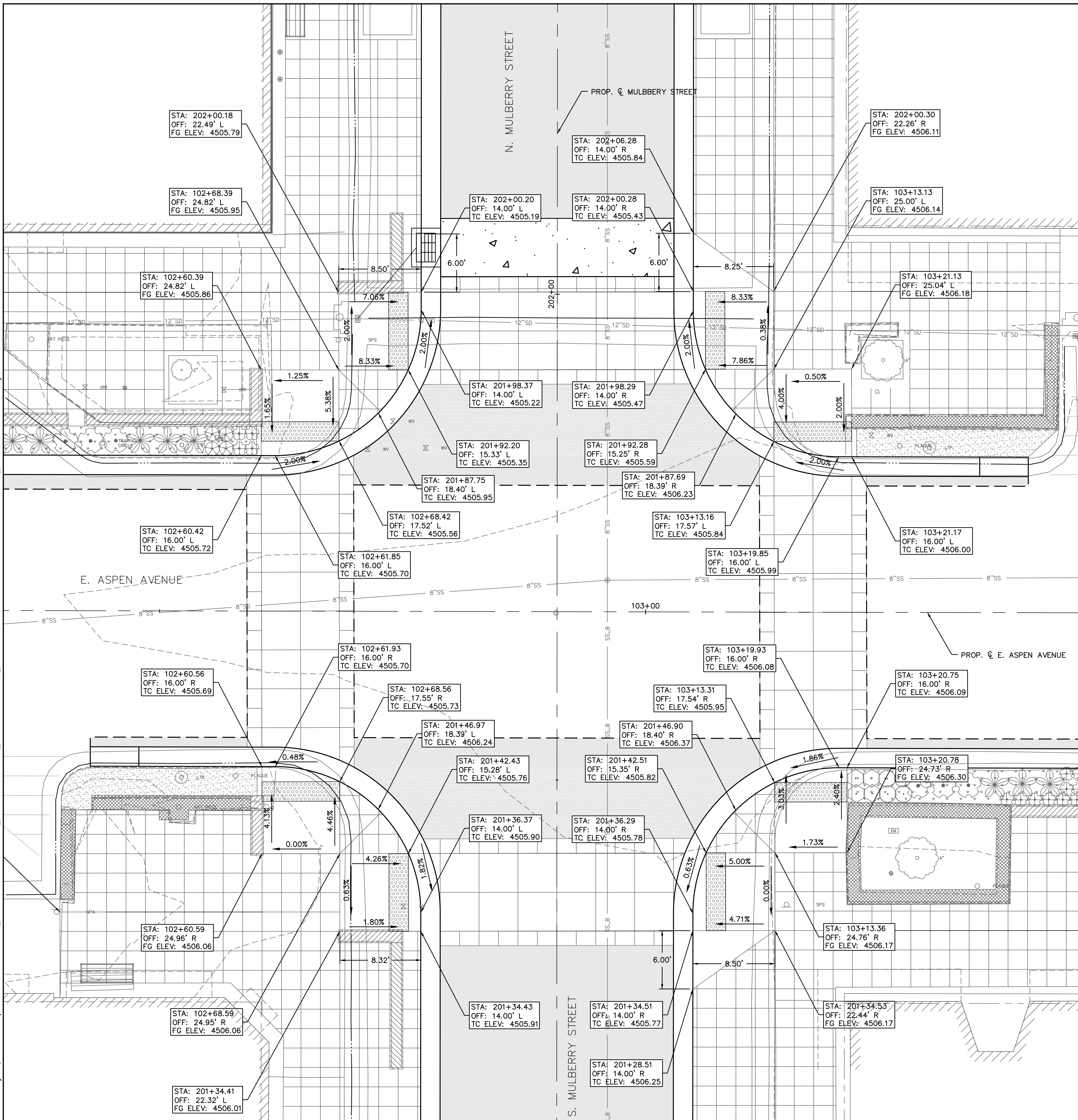








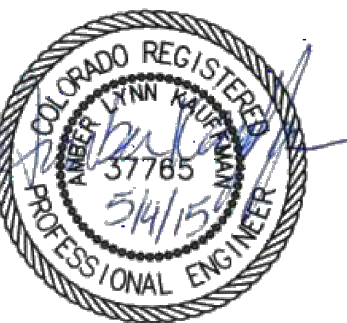
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- CROSSWALK DETAIL NOTES:
- COURSE BROOM FINISH PERPENDICULAR TO THE SLOPE OF THE RAMP IS REQUIRED OVER THE SLOPED SURFACE OF RAMPS AND APRONS.
  - A 6" WIDE CURB OPTION MAY BE POURED ALONG SIDE OF THE RAMP WHERE NO FLARE IS INSTALLED. IF CURB IS USED IT SHALL MATCH STYLE OF ADJACENT CURB & GUTTER.
  - DETECTABLE WARNING IS TO EXTEND THE FULL WIDTH OF THE RAMP AND BE A MINIMUM OF 2 FEET IN THE DIRECTION OF TRAVEL. APPROVED DETECTABLE WARNING SHALL BE "WET SET" INTO THE FRESHLY FINISHED CONCRETE OF EACH CURB RAMP. SEE SECTION 5.4, PARAGRAPH (F) OF THE CITY OF FRUITA DESIGN CRITERIA AND CONSTRUCTION SPECIFICATIONS MANUAL FOR APPROVED DETECTABLE WARNING MATERIALS AND MANUFACTURERS. DETECTABLE WARNING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS UNLESS OTHERWISE APPROVED.

LOGAN SIMPSON DESIGN INC.

**OLSSON ASSOCIATES**



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REVISIONS DESCRIPTION	DATE	REV. NO.

MULBERRY SIDEWALK GRADING DETAILS	FRUITA, CO
DOWNTOWN STREETSCAPE IMPROVEMENTS	2015

drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by:      
project no.: 14-1169  
drawing no.:      
date: 04-15-15

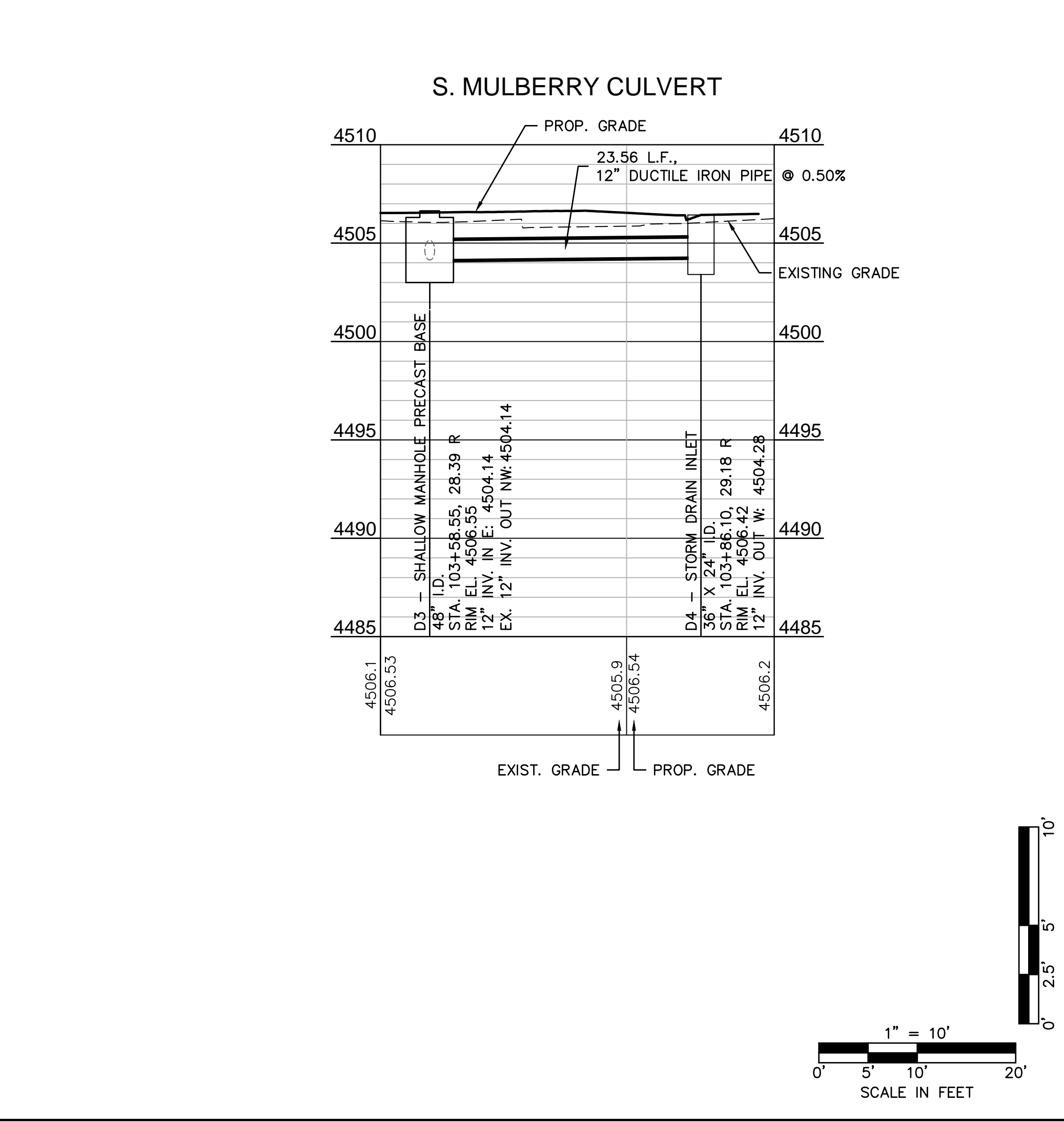
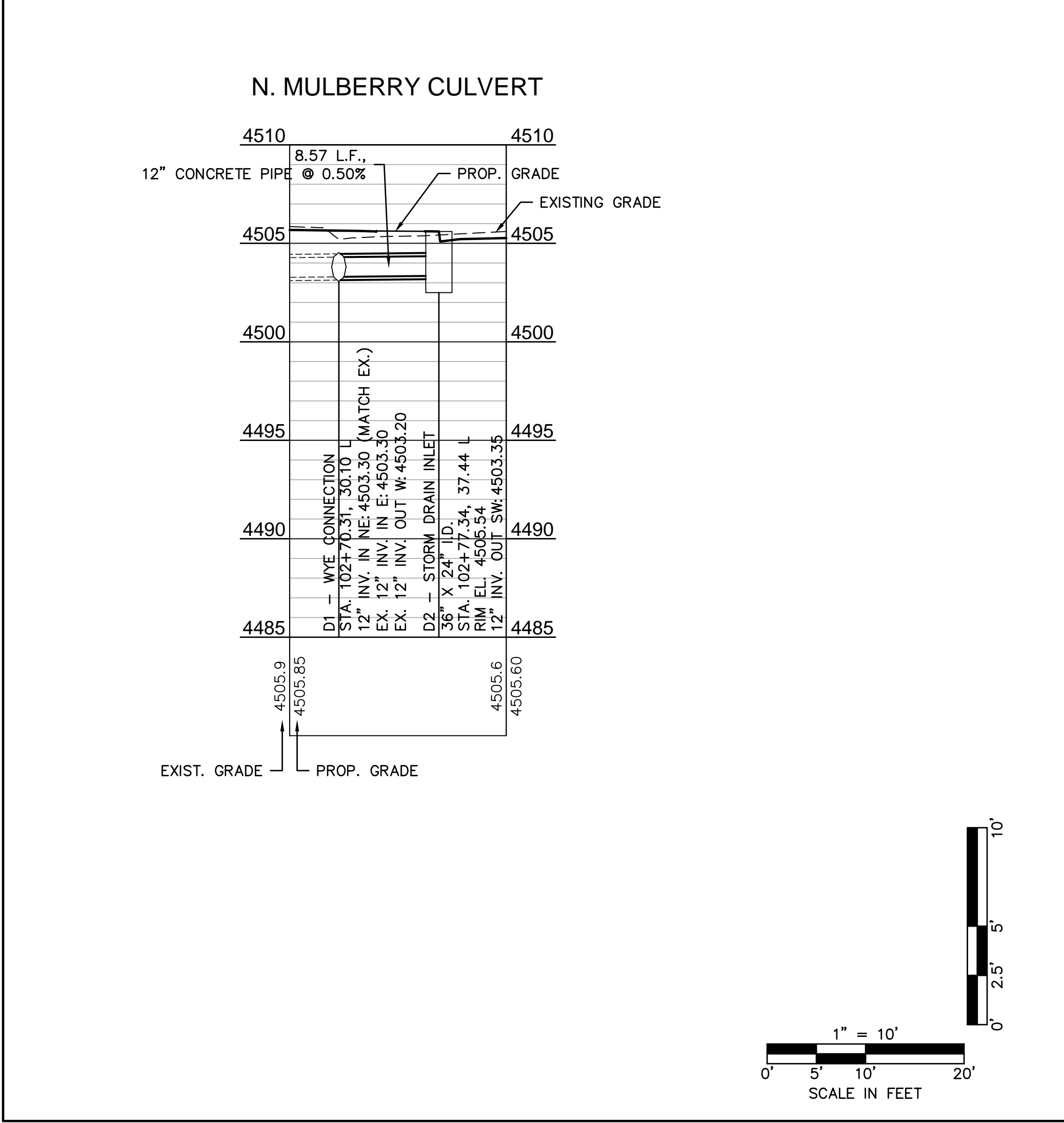
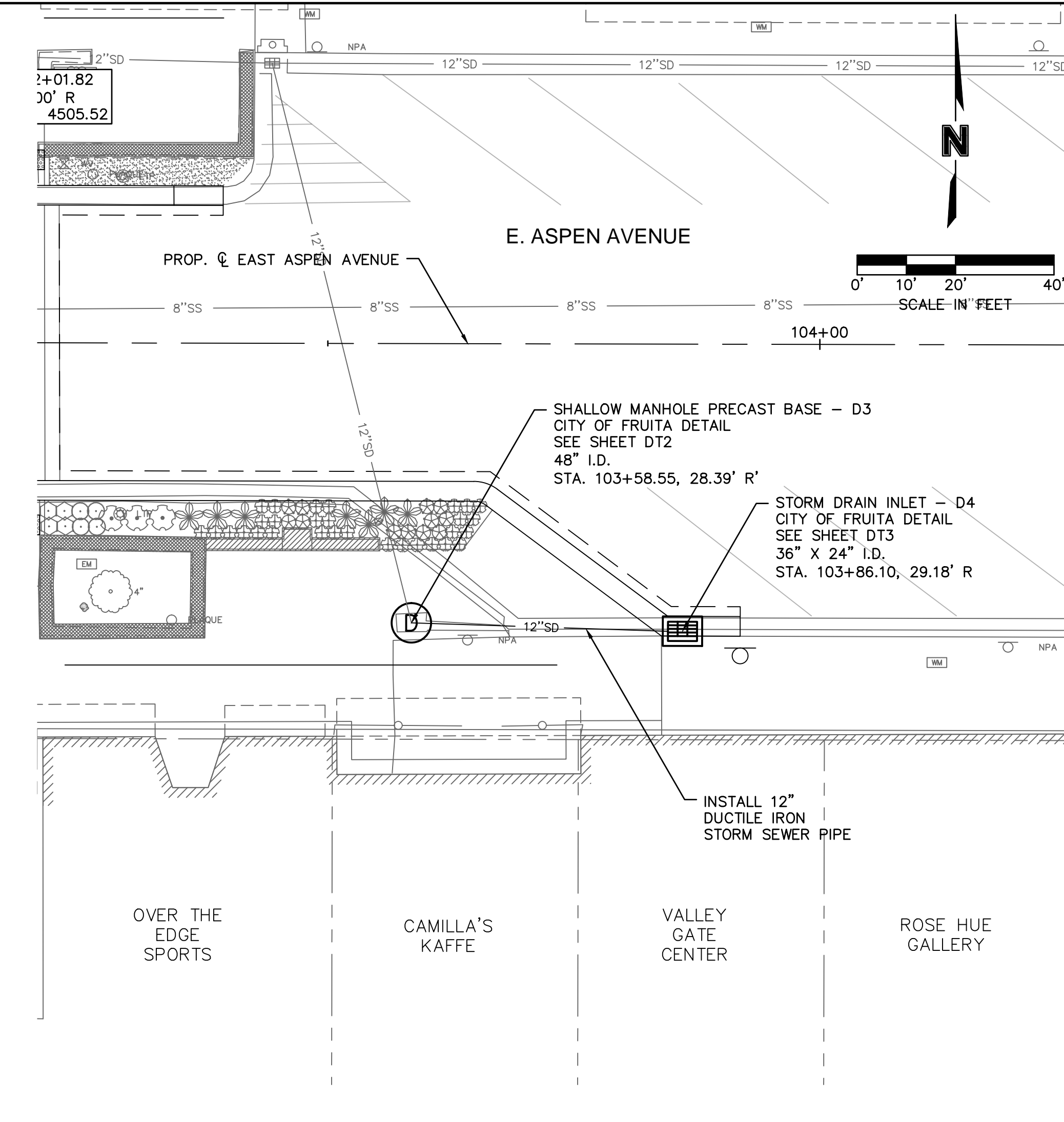
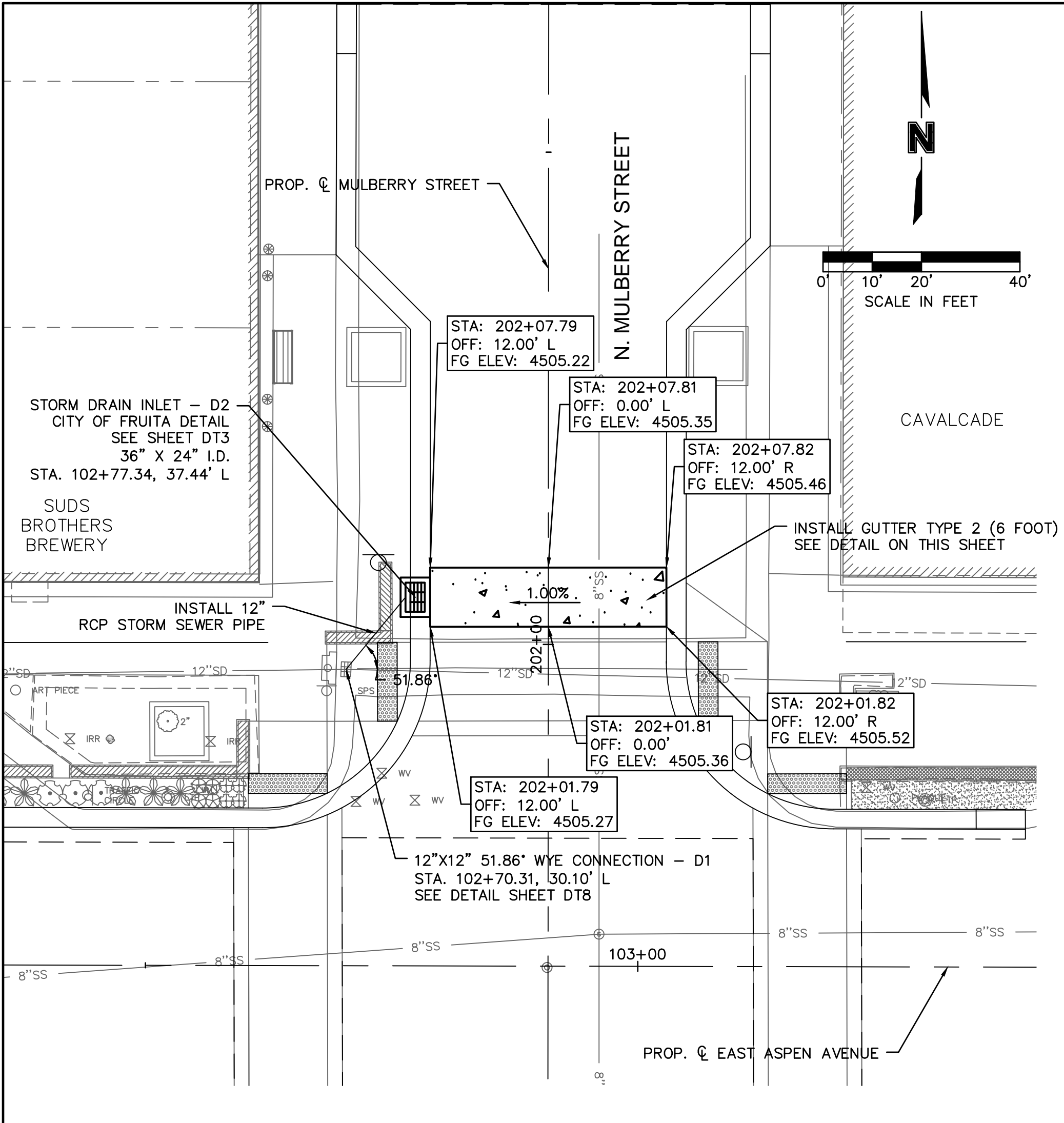
SHEET SG3



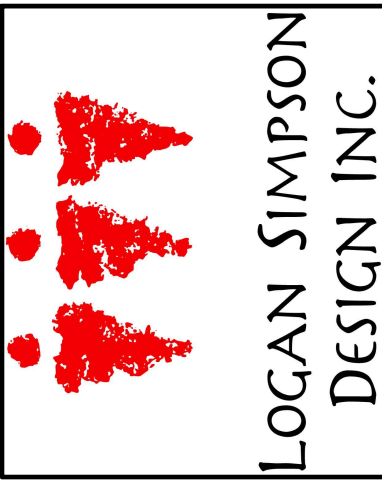
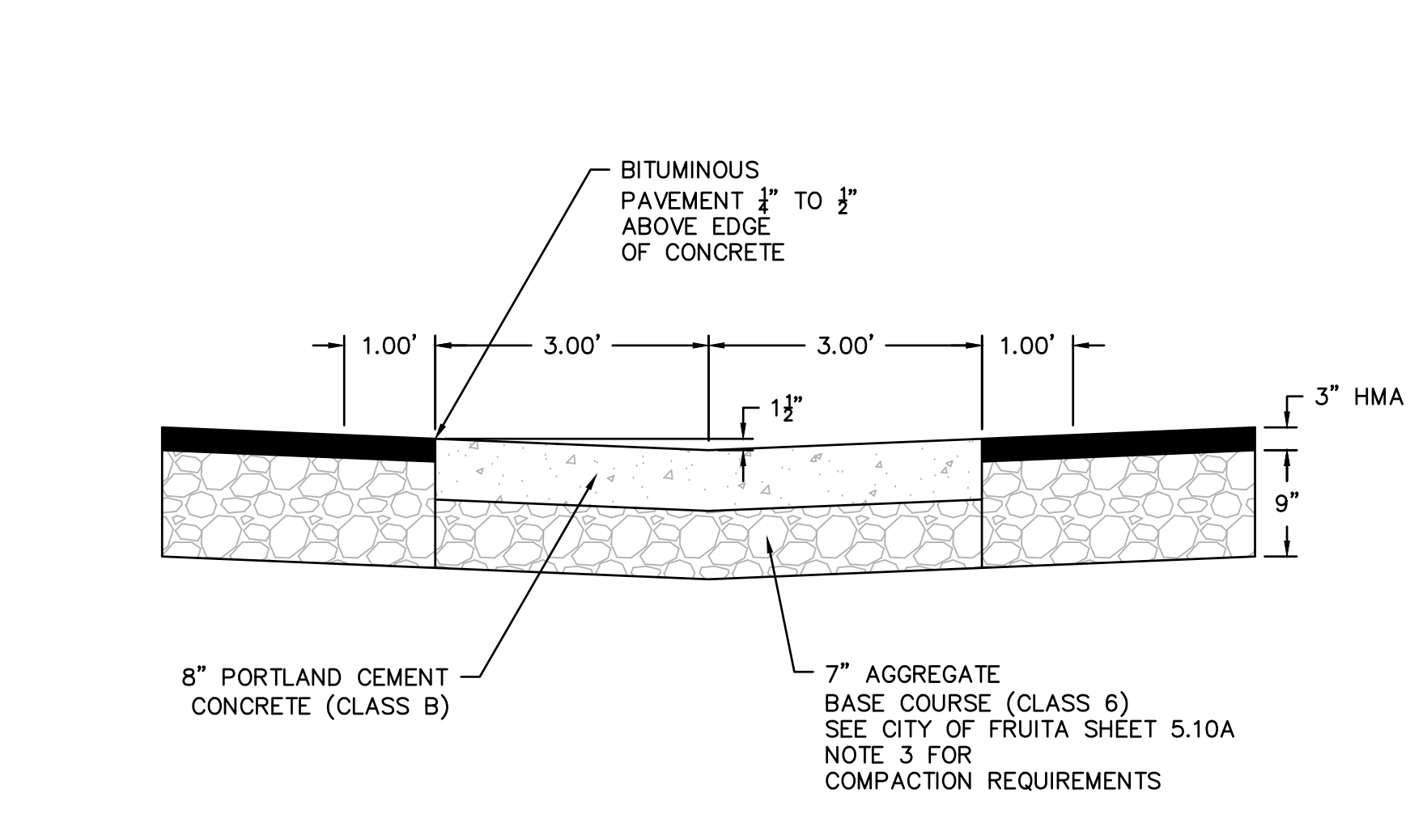




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- CITY OF FRUITA STORMWATER NOTES:**
- STATION/OFFSETS ARE TO CENTER OF STRUCTURE.
  - RIM ELEVATIONS FOR STORM DRAIN INLETS ARE AT CENTER OF CURB BOX AND FOR MANHOLES ARE AT CENTER OF STRUCTURE.
  - FIELD VERIFY ALL EXISTING INVERTS AND LOCATION OF EXISTING STRUCTURES AND PIPES PRIOR TO CONSTRUCTION.
  - A CONCRETE COLLAR SHALL BE INSTALLED TO CONNECT PROPOSED PIPES OR WYES TO EXISTING PIPES. SEE DETAIL ON SHEET SW2.
  - THE CONTRACTOR SHALL NOTIFY GRAND JUNCTION DRAINAGE DISTRICT 24 HOURS PRIOR TO COMMENCING CONSTRUCTION OF THE RESPECTIVE UTILITIES AND ROADWAY (IF APPLICABLE).
  - ALL STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF FRUITA STANDARDS AND SPECIFICATIONS AND GRAND JUNCTION DRAINAGE DISTRICT STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
  - STEEL FRAMES FOR ALL CURB INLETS AND AREA INLETS SHALL BE GROUTED TO THE CONCRETE BOX.
  - ALL STORM SEWER TRENCH BACKFILL SHALL CONFORM TO THE STANDARD TRENCH DETAIL (SEE DETAIL ON SHEET DT1). CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL NECESSARY COMPACTION TESTS THROUGH A CERTIFIED SOILS LAB.
  - CONTRACTOR TO VERIFY ALL "TIE-IN" GRADES PRIOR TO ANY CONSTRUCTION.
  - REINFORCED CONCRETE PIPE SHALL BE A MINIMUM OF CLASS II AND CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
    - STORM DRAIN AND SEWER PIPE, ASTM C-76
    - LOW-HEAD, ASTM C-361
    - PRECAST MANHOLE SECTIONS, ASTM C-478
    - ARCH PIPE, ASTM C-507
    - ELLIPTICAL PIPE, ASTM C-507
    - JOINTS, USING RUBBER GASKETS, ASTM C-443
  - TESTING OF MATERIALS TO DETERMINE COMPLIANCE WITH THE SPECIFICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TWO CERTIFIED COPIES OF TEST RESULTS INDICATING COMPLIANCE SHALL BE FURNISHED FOR EACH LOT OR SHIPMENT PRIOR TO INSTALLATION OF THE MATERIAL. REINFORCED CONCRETE PIPE SHALL BE TESTED FOR STRENGTH BY THE THREE-EDGE BEARING TEST TO PRODUCE A CRACK OF 0.01". EACH MANUFACTURER FURNISHING PIPE UNDER THESE SPECIFICATIONS SHALL BE FULLY EQUIPPED TO CARRY OUT TESTS DESCRIBED IN ASTM C-497. FAILURE OF ANY PIPE TO MEET THE TEST REQUIREMENTS SHALL BE SUFFICIENT CAUSE FOR REJECTION OF ALL PIPE OF THAT SIZE WHICH THE TEST SPECIMEN REPRESENTS.
  - PIPE DAMAGED DURING SHIPMENT OR HANDLING MAY BE REJECTED EVEN IF PREVIOUSLY APPROVED.
  - CONCRETE SHALL CONFORM TO THE CITY OF GRAND JUNCTION SPEC. 601 (STRUCTURAL CONCRETE CLASS B).
  - ANY EXISTING PAVEMENT NOT DESIGNATED FOR REMOVAL WHICH IS DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN-KIND BY THE CONTRACTOR.
  - MANHOLE RISER SECTIONS, CONES, FLAT TOPS AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE CONFORMING TO ASTM C-478 OR ASSHTO M-199.
  - BACKFILL AROUND MANHOLES, INLET BOXES AND OTHER STRUCTURES SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% AASHTO T-99.
  - ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.
  - ALL CONCRETE WORK WITHIN PUBLIC RIGHT OF WAY SHALL BE PERFORMED BY A LICENSED CURB, GUTTER AND SIDEWALK CONTRACTOR.
  - MANHOLE STEPS SHALL BE INSTALLED IN VERTICAL ALIGNMENT WITH THE RING AND COVER.
  - ALL CEMENT USED IN MORTAR, CONCRETE BASES, GRADE RINGS, RISER SECTIONS, CONES AND FLAT TOPS FOR STORM SEWER MANHOLES, SHALL BE TYPE V MODIFIED OR MODIFIED TYPE II PORTLAND CEMENT WITH LESS THAN 5% TRICALCIUM ALUMINATE.
  - ALL STORM SEWER MANHOLE LIDS SHALL BE DESIGNATED "STORM SEWER".
  - MANHOLE RING AND COVER CAN BE SET TO FINISHED GRADE, USING NON-SHRINK GROUT TO ADJUST RING ELEVATION. GROUT SHALL NOT EXCEED .15 FT. THICKNESS. GROUT SHALL BE PLACED ONLY UNDER THE CAST IRON RING. NO GROUT SHALL BE PLACED BETWEEN THE GRADE RINGS.
  - STEEL PAVING RINGS ARE NOT ALLOWED FOR GRADE ADJUSTMENT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.



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REV. NO.	DATE	REVISIONS DESCRIPTION

STORMWATER PLAN & PROFILE

DOWNTOWN STREETScape IMPROVEMENTS

FRUITA, CO

2015

drawn by: \_\_\_\_\_ SE  
 checked by: \_\_\_\_\_ AK  
 approved by: \_\_\_\_\_ WP  
 QA/QC by: \_\_\_\_\_  
 project no.: 14-1169  
 drawing no.:  
 date: 04-15-15



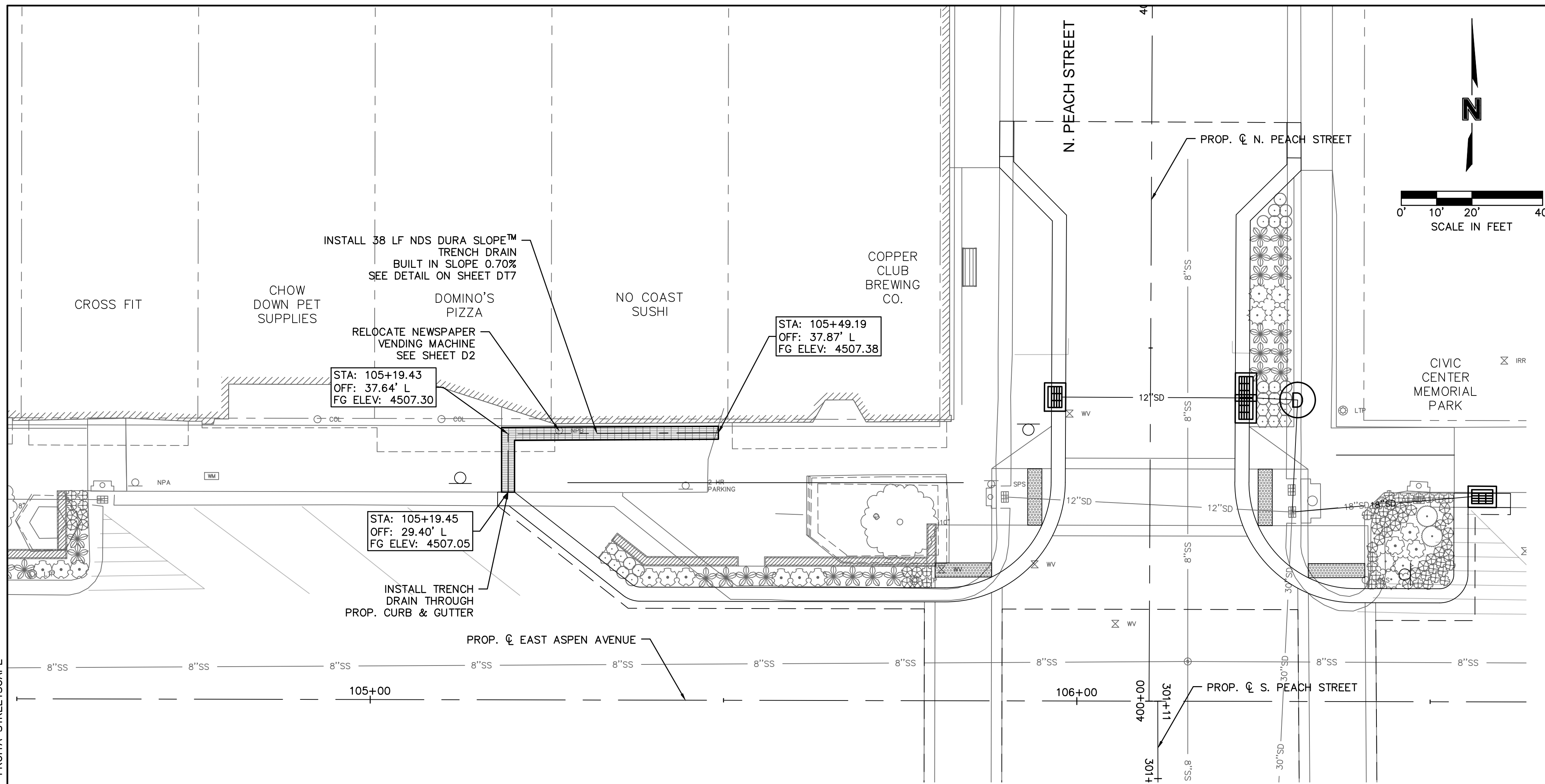




L-SP-FRUITA STREETSCAPE

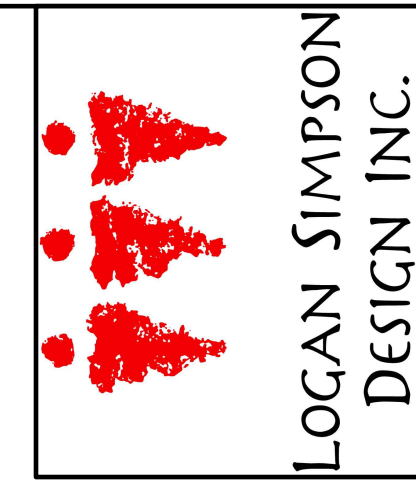
USER: afshay  
141169\_STOP0 2D Linework only

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DATE: May 05, 2015 1:53pm XREFS: 141169\_PSTM 141169\_PBASE 141169\_BLOCK



TRENCH DRAIN NOTES:

1. INSTALL NDS DURA SLOPE™ OR APPROVED EQUAL PER DETAILS ON SHEET DT7.
2. ELEVATIONS SHOWN IN PROFILE ARE BOTTOM OF CHANNEL ELEVATIONS.



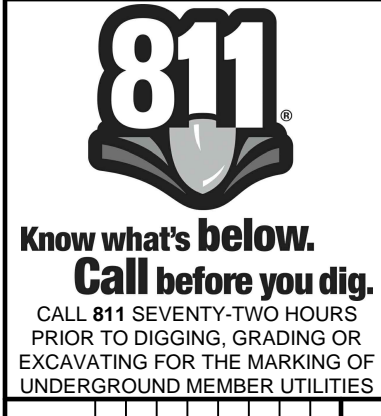
LOGAN SIMPSON  
DESIGN INC.

**MOLSSON**  
ASSOCIATES

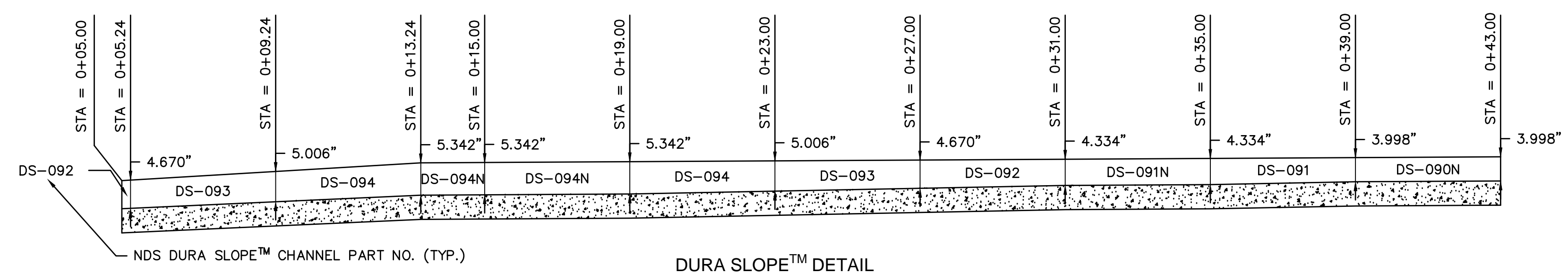
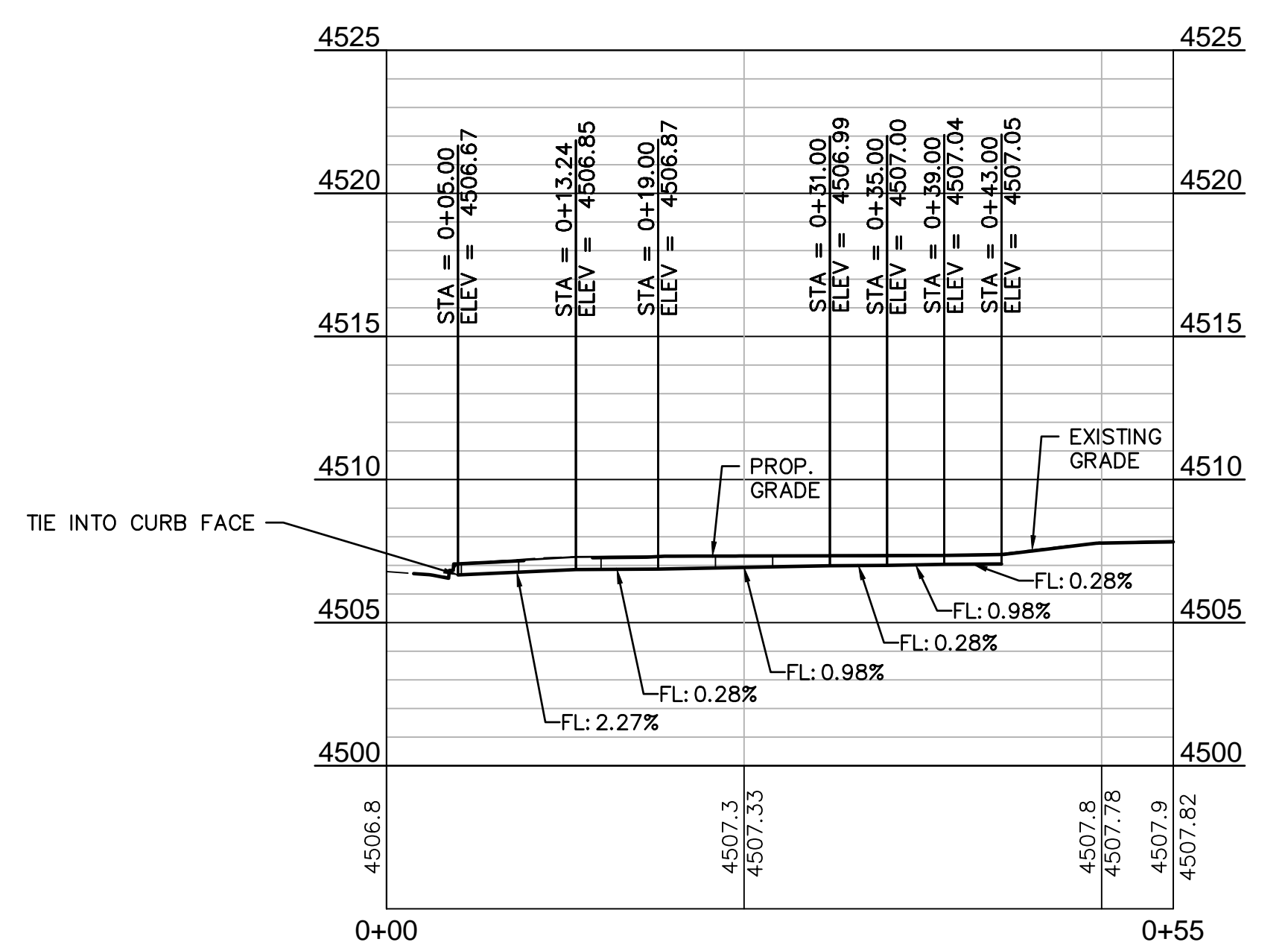
4690 Teble Mountain Drive, Suite 200  
Golden, CO 80403  
TEL: 303.237.2072  
FAX: 303.237.2659  
www.molssonassociates.com



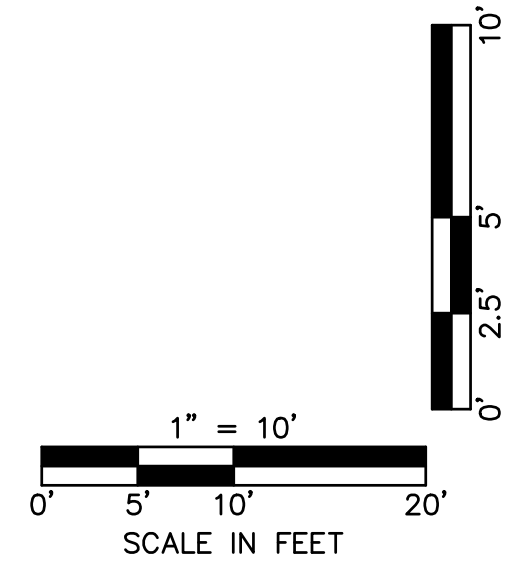
MOLSSON ASSOCIATES ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL OR VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS HOWEVER THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR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



NDS TRENCH DRAIN



DURA SLOPE™ DETAIL  
NTS



REV. NO.	DATE	REVISIONS DESCRIPTION

STORMWATER PLAN & PROFILE

DOWNTOWN STREETSCAPE IMPROVEMENTS

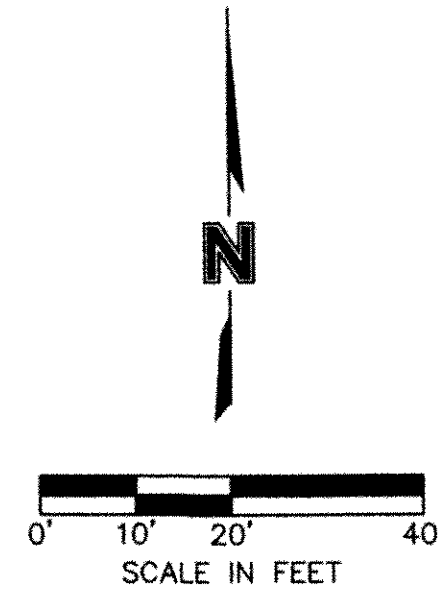
FRUITA, CO

2015

drawn by: \_\_\_\_\_ SE  
checked by: \_\_\_\_\_ AK  
approved by: \_\_\_\_\_ WP  
QA/QC by: \_\_\_\_\_  
project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15

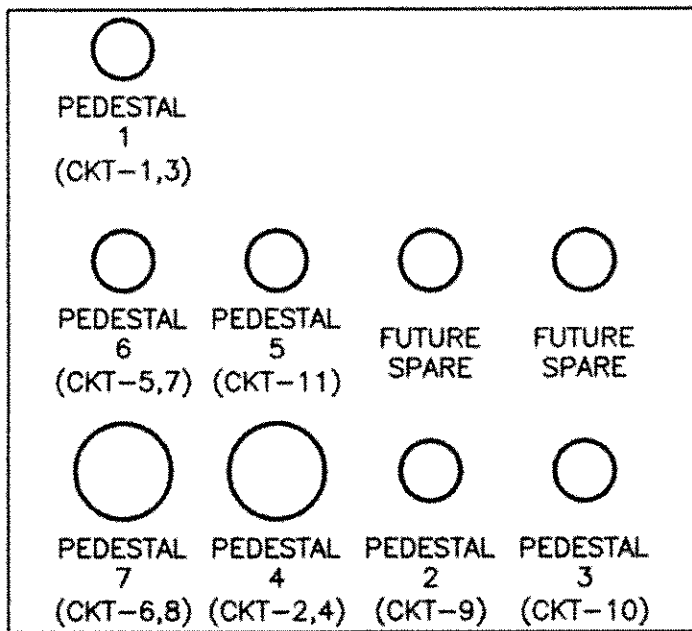


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 DATE: Apr 13, 2015 8:00am  
 USER: beling  
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 141169\_P\ST  
 141169\_STOPO 2D Linework only 141169\_TITLE-BLOCK3-6-15  
 FRUITA Field DWG 141169\_STOPO



**LEGEND**

- PROPOSED PANEL
- P** POWER PEDESTAL - (2) DUPLEX RECEPTACLES  
120 VOLT (40 AMPS)
- P\*** POWER PEDESTAL - (2) DUPLEX RECEPTACLES WITH  
50 AMP TWIST LOCK - 240 VOLT (90 AMPS)
- PROPOSED CIRCUIT
- PULL BOX



DUCT BANK SECTION FROM MP-1

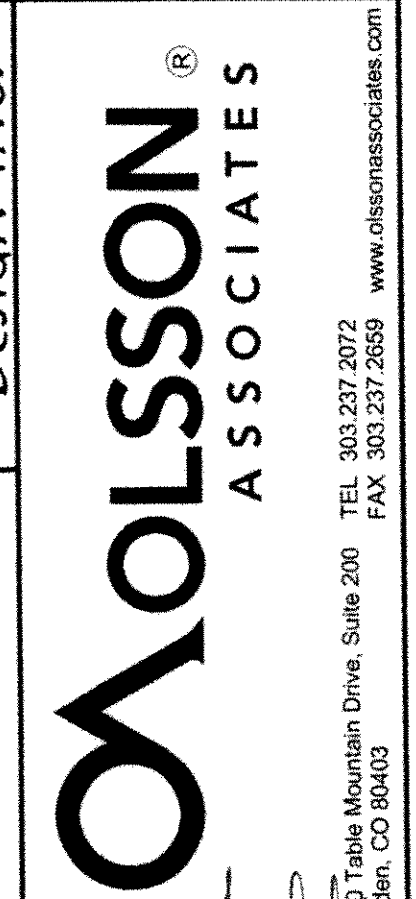
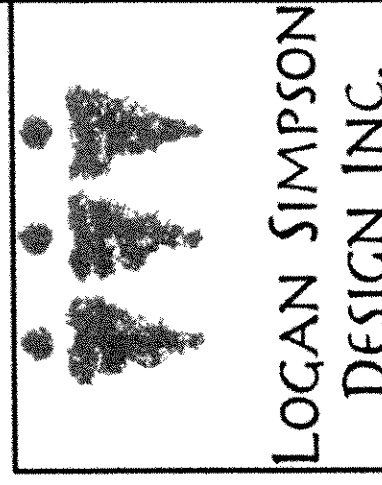
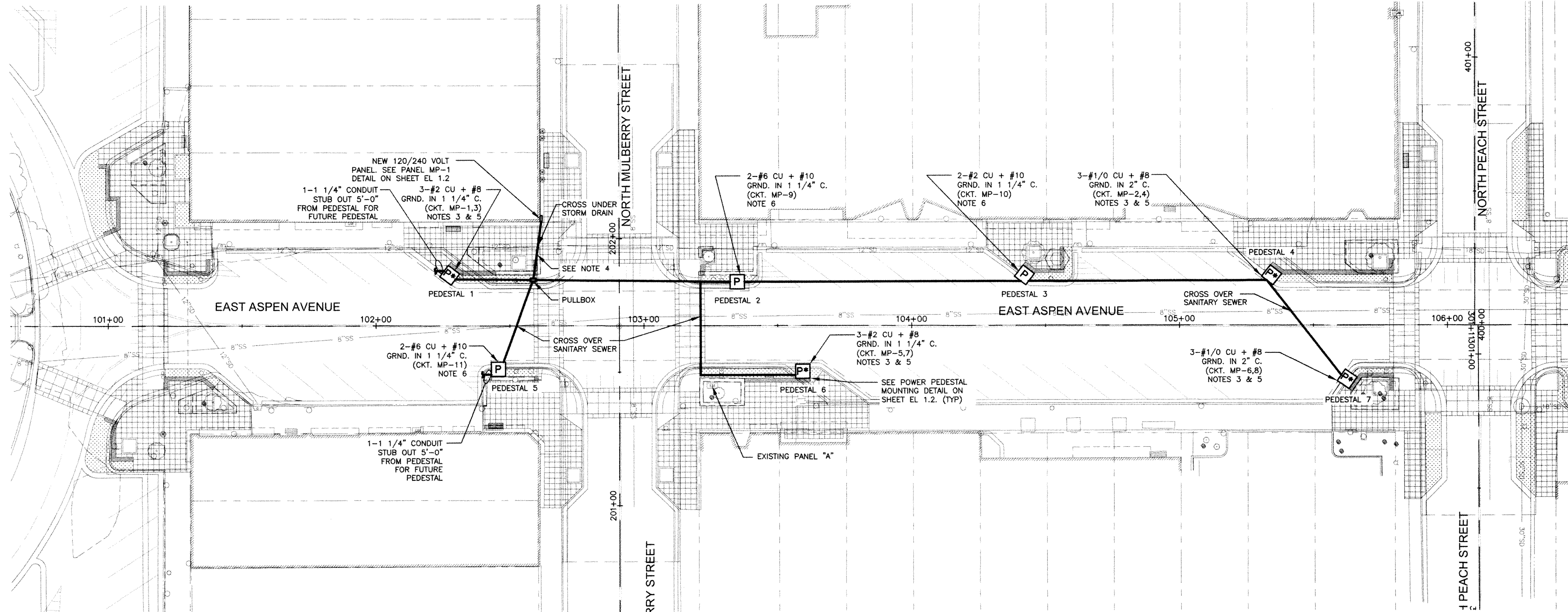
**GENERAL NOTES:**

THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR.

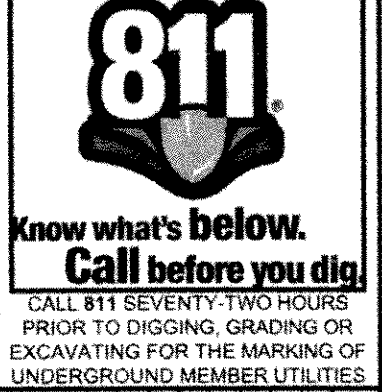
NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITY FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY.

**CONSTRUCTION NOTES:**

1. ALL WORK TO BE IN COMPLETE ACCORDANCE WITH THE NEC, LATEST EDITION.
2. CONTRACTOR SHALL ROUTE CONDUIT GENERALLY AS SHOWN ON THE PLANS. ALL CONDUIT TO BE 30" BELOW GRADE. ALL CONDUIT WILL BE DIRECTIONAL BORED. EXACT ROUTES TO BE RECORDED BY CONTRACTOR FOR "AS CONSTRUCTED DRAWINGS."
3. CONTRACTOR SHALL REMOVE EXISTING BR54U OUTLET OUT OF NEW POWER PEDESTAL BOX AND REPLACE WITH 50 AMP TWIST LOCK OUTLET.
4. SEE DUCT BANK SECTION THIS SHEET.
5. PEDESTALS 1,4,6 & 7 SHALL BE MIDWEST ELECTRIC U076C033.
6. PEDESTALS 2,3, & 5 SHALL BE MIDWEST ELECTRIC U011GTL.



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REV. NO.	DATE	REVISIONS DESCRIPTION

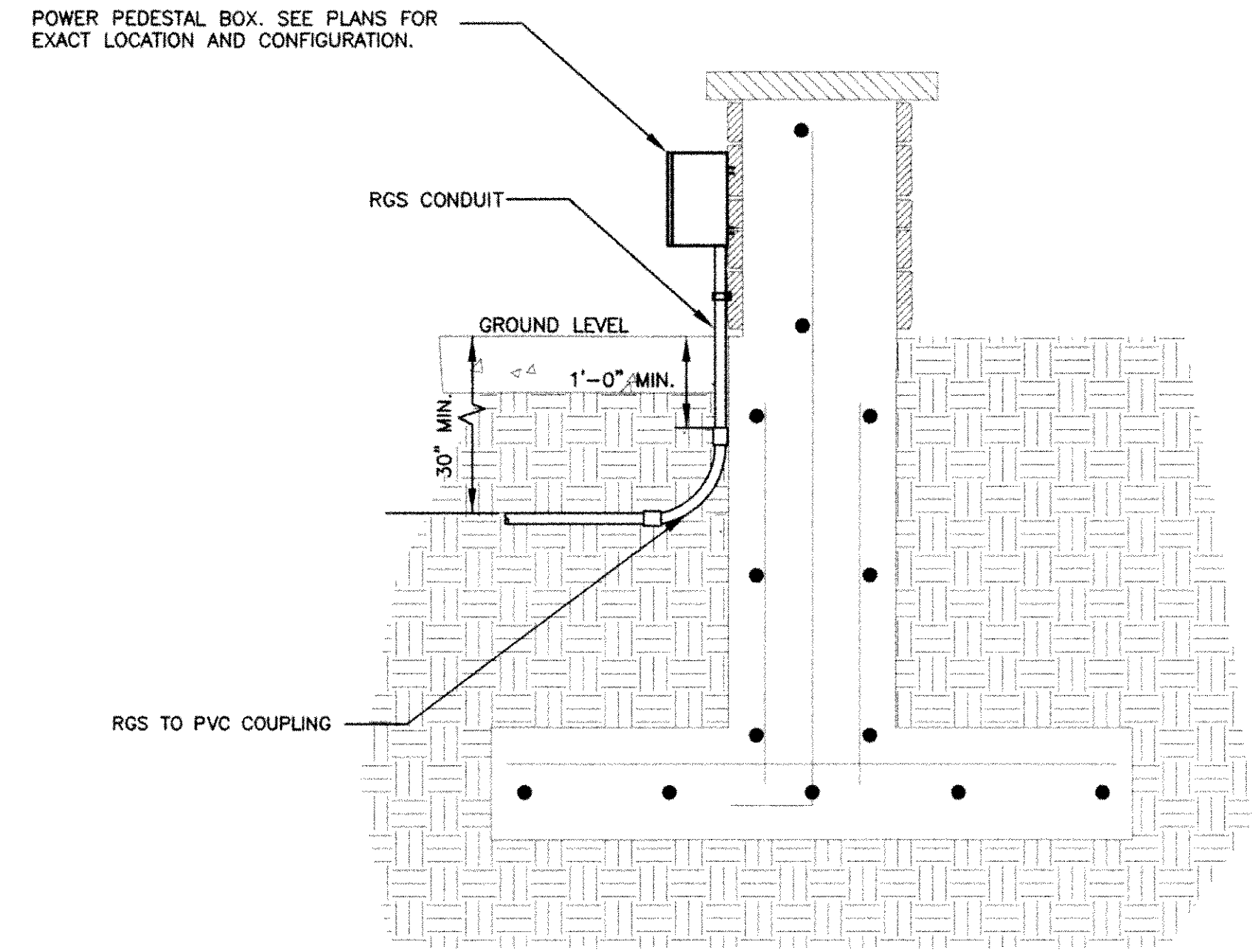
ELECTRICAL SITE PLAN - ASPEN STREET  
 DOWNTOWN STREETSCAPE IMPROVEMENTS  
 FRUITA, CO

2015

drawn by: BTS  
 checked by: BSKF  
 approved by: QA/QC  
 project no.: 14-1169  
 drawing no.:  
 date: 04-13-15

SHEET EL 1.1



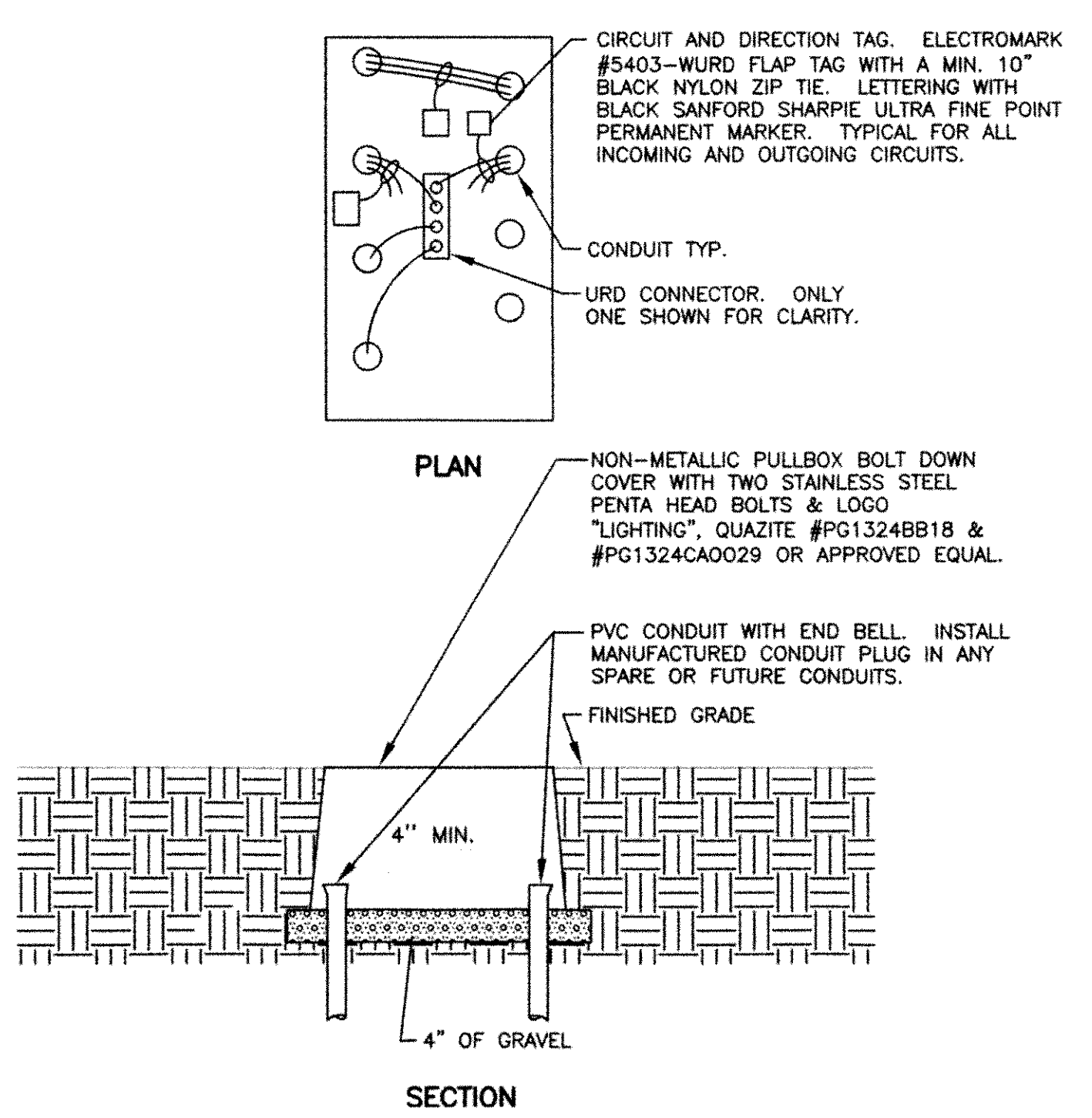


**POWER PEDESTAL MOUNTING DETAIL (TYP)**  
NO SCALE

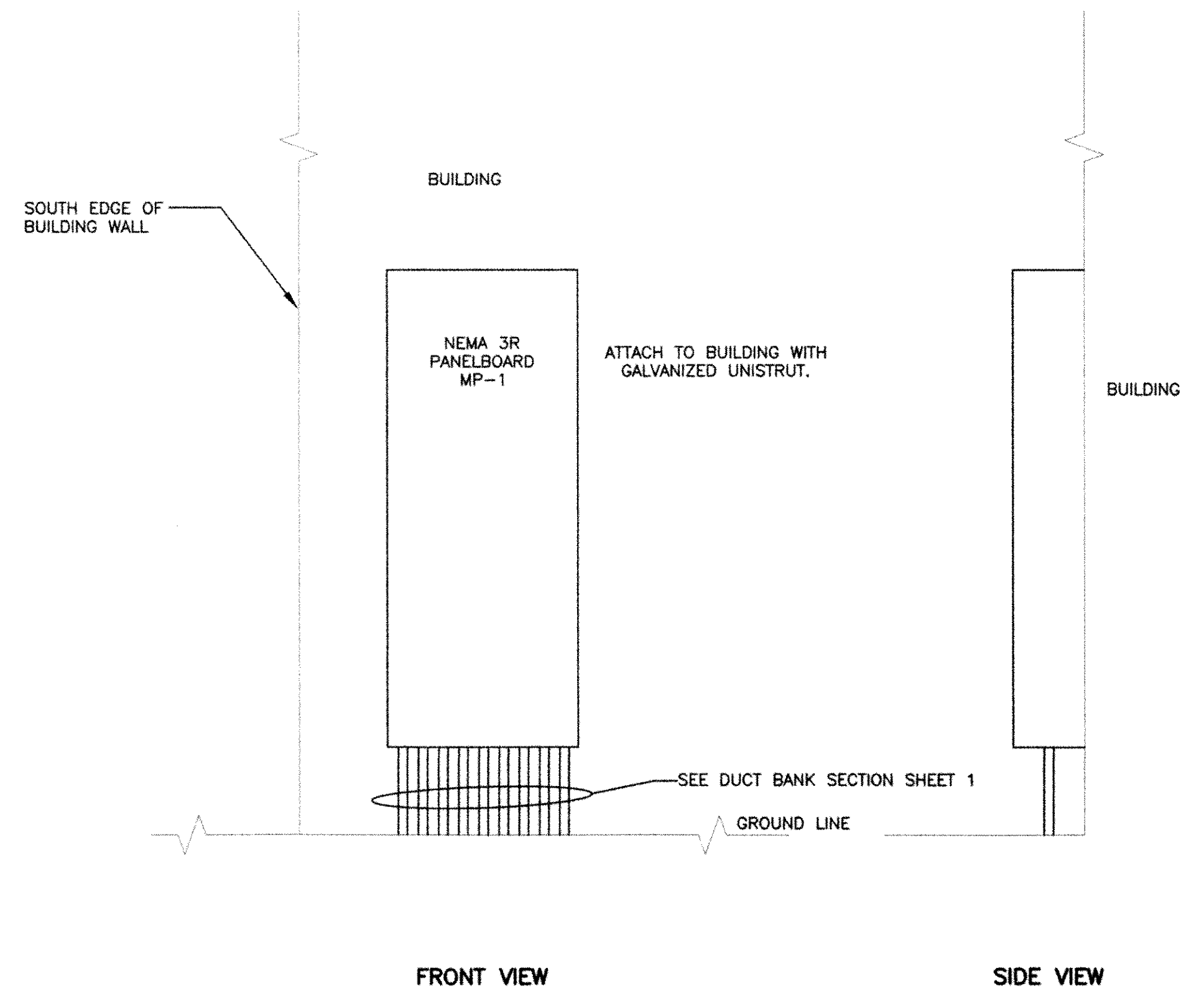
SCHEDULE FOR PANEL: MP-1		FED FROM --									
VOLTAGE:	120/240	EQUIPMENT GND BUS:	POLES: 18								
MAIN BUS:	400	ISOLATED GND BUS:	1- AIC								
		MTG:	NEMA 3R SURFACE COMMENTS: 3 WIRE								
Ckt #	SERVES	LOAD VA	BREAKER		PHASE	BREAKER	LOAD VA	SERVES	Ckt #		
			P	TRIP						A	B
1	PEDESTAL 1	8640	2	90	17280		90	2	8640	PEDESTAL 4	2
3		8640				17280			8640		4
5	PEDESTAL 6	8640	2	90	17280		90	2	8640	PEDESTAL 7	6
7		8640				17280			8640		8
9	PEDESTAL 2	3840	1	40	7680		40	1	3840	PEDESTAL 3	10
11	PEDESTAL 5	3840	1	40		3840	40	1		SPARE	12
13	SPARE		2	90			90	2		SPARE	14
15											16
17											18
		42240	38400	VA PER PHASE		352.00		320.00	AMPS PER PHASE		336.00
TOT. CONN. LOAD (AMPS)											
LOAD TYPE	CONNECTED KVA	FACTOR	DEMAND KVA								
LIGHTING		125%									
RECEPTACLE	80.64	50%	40.32								
HVAC/MOTOR		100%									
MOTOR(LARGEST)		125%									
KITCHEN EQUIPMENT		100%									
MISCELLANEOUS		100%									
TOTAL CONNECTED (KVA)	80.64		40.32								
					TOT. DEMAND KVA		168.00		TOT. DEMAND LOAD(AMPS)		

LOAD TYPE	CONNECTED KVA	FACTOR	DEMAND KVA
LIGHTING		125%	
RECEPTACLE	80.64	50%	40.32
HVAC/MOTOR		100%	
MOTOR(LARGEST)		125%	
KITCHEN EQUIPMENT		100%	
MISCELLANEOUS		100%	
TOTAL CONNECTED (KVA)	80.64		40.32

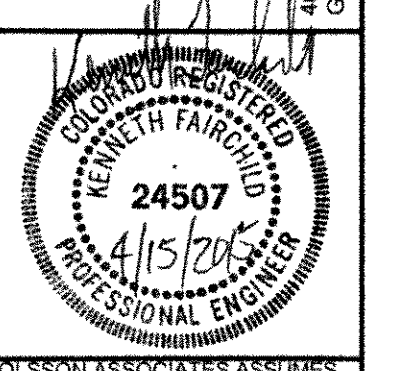
NOTE:  
LOADS WERE CALCULATED BASED ON LITERATURE FROM THE MANUFACTURER.



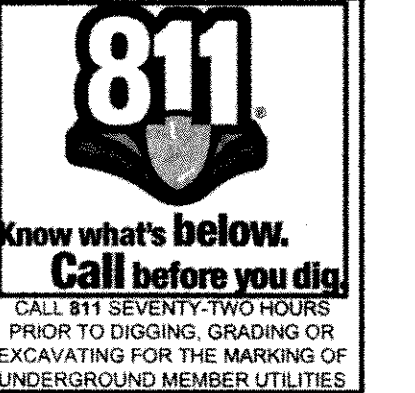
**PULL BOX DETAIL SPB**  
NTS



**MP-1 PANEL DETAIL**  
SCALE: 1"=1'-0"



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REV. NO.	DATE	DESCRIPTION

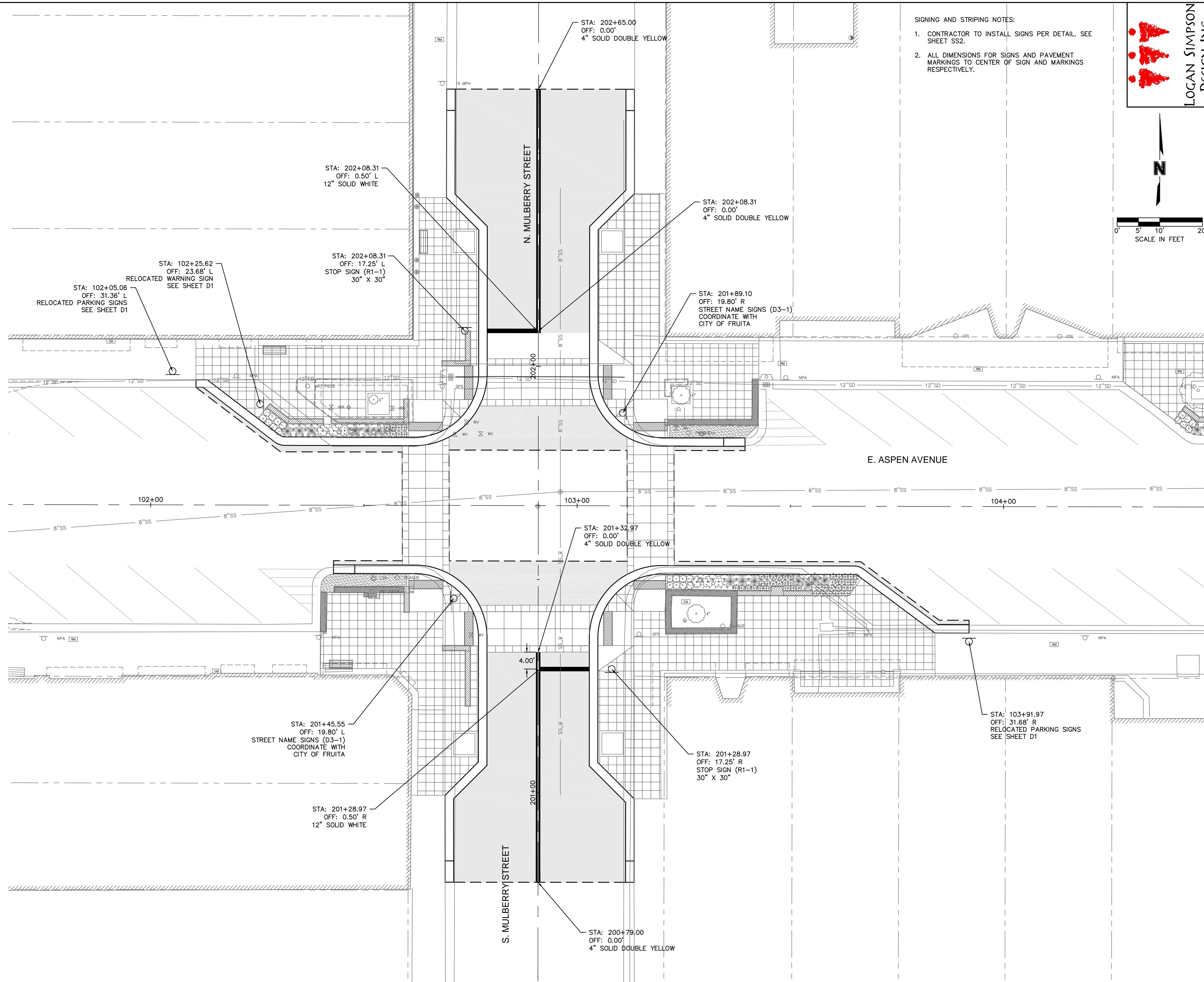
REV. NO.	DATE	DESCRIPTION

MISCELLANEOUS DETAILS  
DOWNTOWN STREETScape IMPROVEMENTS  
FRUITA, CO

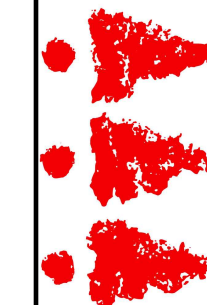
SHEET  
EL 1.2



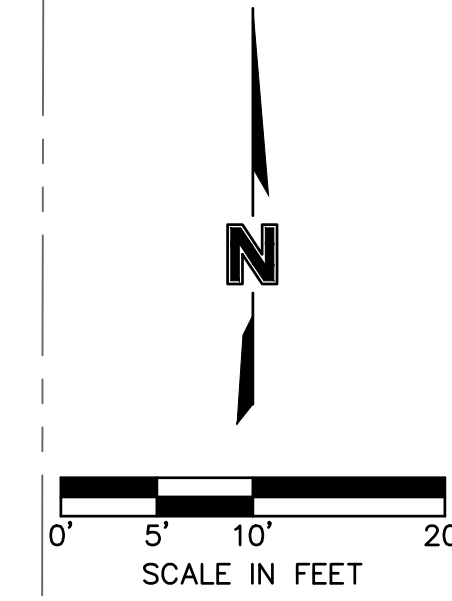
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 DATE: May 05, 2015 1:52pm XREFS: 141169\_PBASE 141169\_STOP0 2D Linework only  
 USER: afohey  
 141169\_TITLE=BLOCK  
 L-SP-FRUITA STREETSCAPE



- SIGNING AND STRIPING NOTES:
1. CONTRACTOR TO INSTALL SIGNS PER DETAIL. SEE SHEET SS2.
  2. ALL DIMENSIONS FOR SIGNS AND PAVEMENT MARKINGS TO CENTER OF SIGN AND MARKINGS RESPECTIVELY.



LOGAN SIMPSON  
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REV. NO.	DATE	REVISIONS DESCRIPTION

SIGNING & STRIPING PLAN SHEETS		FRUITA, CO
DOWNTOWN STREETSCAPE IMPROVEMENTS		
2015		

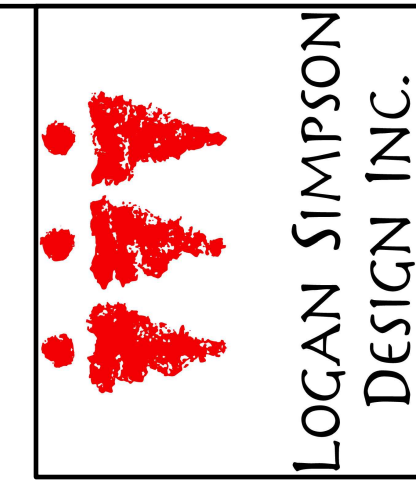
SHEET  
SS1

drawn by: SE  
 checked by: AK  
 approved by: WP  
 QA/QC by:       
 project no.: 14-1169  
 drawing no.:       
 date: 04-15-15



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 USER: sfohey  
 141169\_TITLE=BLOCK  
 XREFS: 141169\_PBASE  
 L-SP-FRUITA STREETSCAPE

- SIGNING AND STRIPING NOTES:
1. CONTRACTOR TO INSTALL SIGNS PER DETAIL. SEE THIS SHEET.
  2. ALL DIMENSIONS OF SIGNS AND PAVEMENT MARKINGS TO CENTER.



LOGAN SIMPSON  
DESIGN INC.



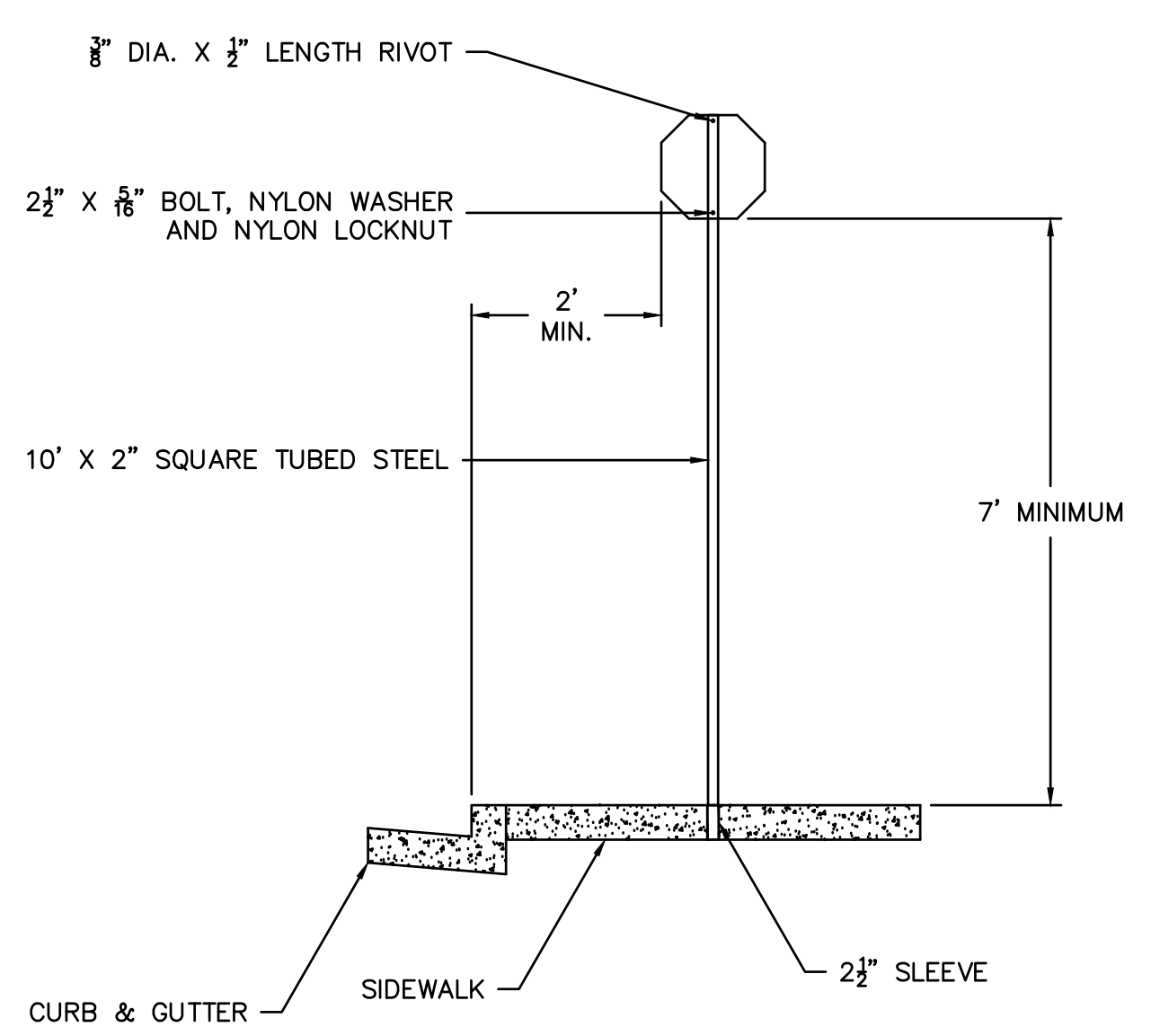
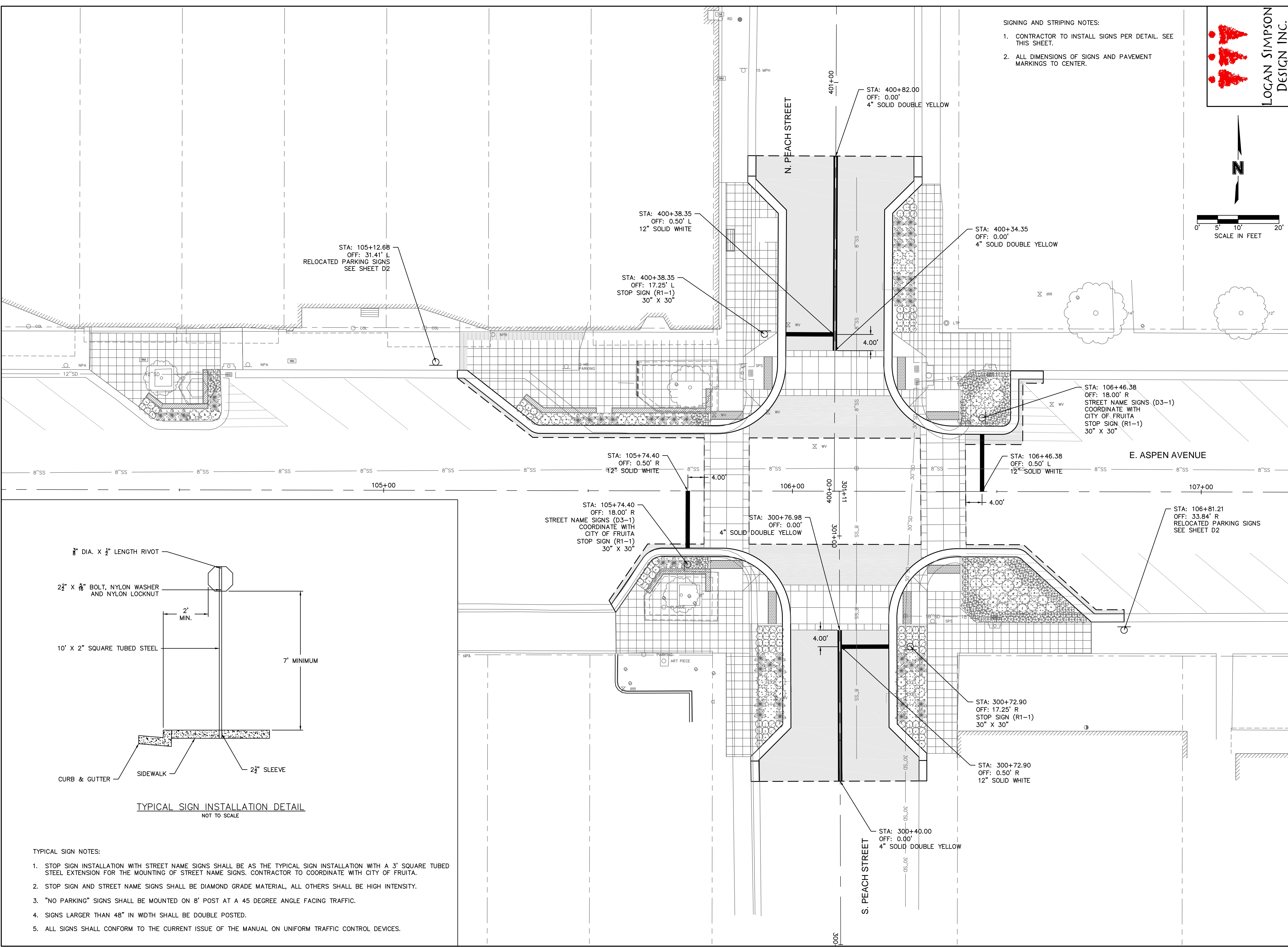
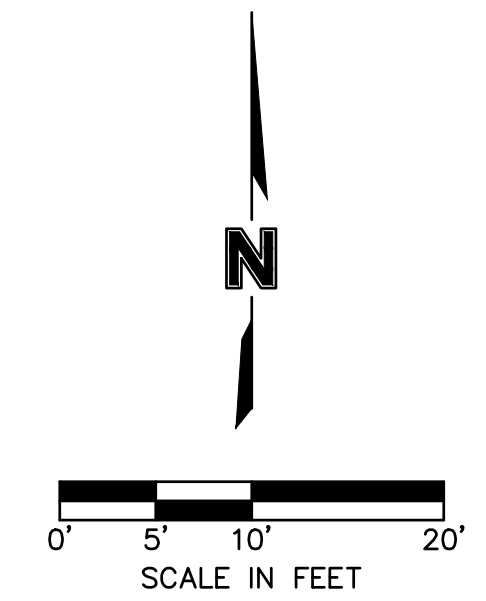
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SIGNING & STRIPING PLAN SHEETS  
 DOWNTOWN STREETSCAPE IMPROVEMENTS  
 FRUITA, CO  
 2015

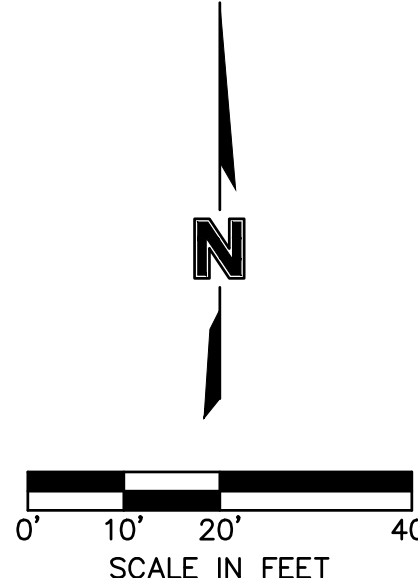
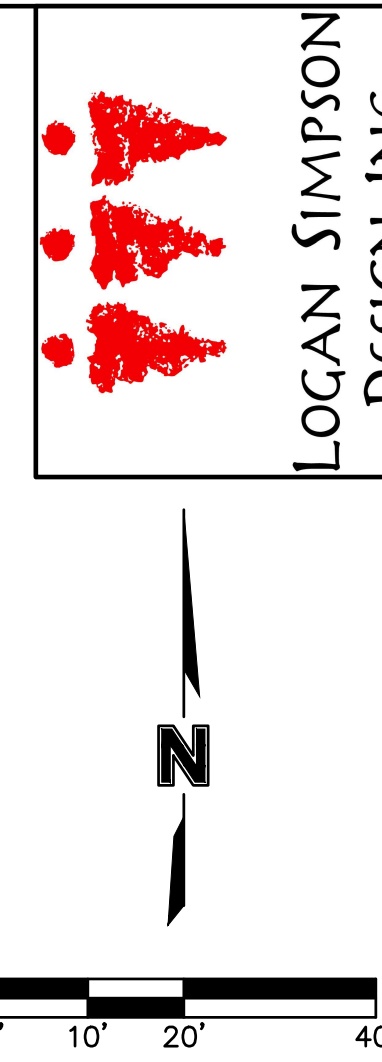
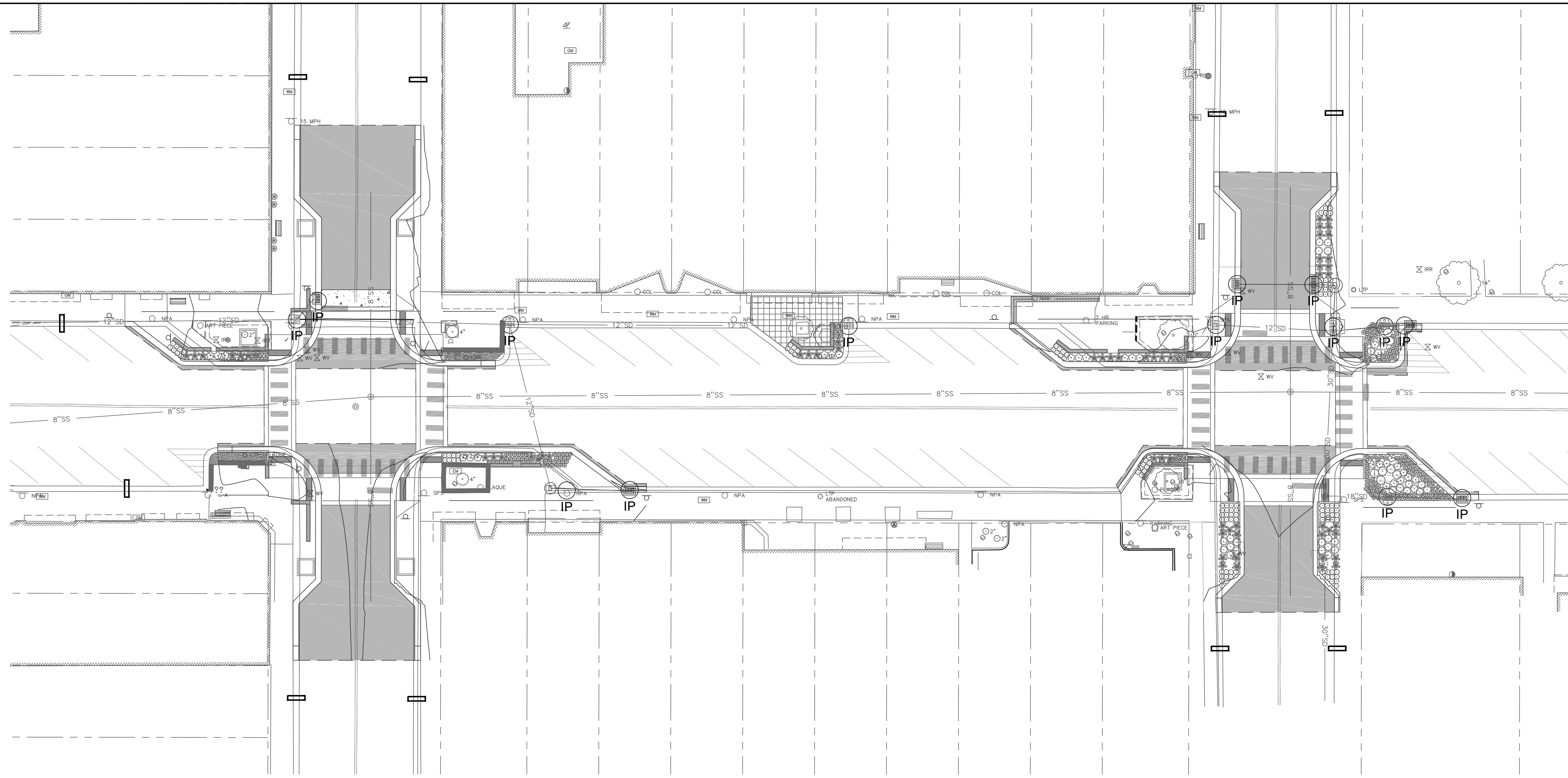
SHEET SS2



TYPICAL SIGN INSTALLATION DETAIL  
NOT TO SCALE

- TYPICAL SIGN NOTES:
1. STOP SIGN INSTALLATION WITH STREET NAME SIGNS SHALL BE AS THE TYPICAL SIGN INSTALLATION WITH A 3' SQUARE TUBED STEEL EXTENSION FOR THE MOUNTING OF STREET NAME SIGNS. CONTRACTOR TO COORDINATE WITH CITY OF FRUITA.
  2. STOP SIGN AND STREET NAME SIGNS SHALL BE DIAMOND GRADE MATERIAL, ALL OTHERS SHALL BE HIGH INTENSITY.
  3. "NO PARKING" SIGNS SHALL BE MOUNTED ON 8' POST AT A 45 DEGREE ANGLE FACING TRAFFIC.
  4. SIGNS LARGER THAN 48" IN WIDTH SHALL BE DOUBLE POSTED.
  5. ALL SIGNS SHALL CONFORM TO THE CURRENT ISSUE OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.





- IP INLET PROTECTION REFER TO CITY OF FRUITA  
DETAIL ON SHEET ###
- ▭ GRAVEL BAG CURB CHECK REFER TO CDOT  
DETAIL ON SHEET DT6

- CITY OF FRUITA EROSION CONTROL NOTES:
- AT ALL TIME DURING CONSTRUCTION, EROSION AND SEDIMENT CONTROL SHALL BE MAINTAINED BY THE DEVELOPER OR THEIR DESIGNATED REPRESENTATIVE.
  - EROSION CONTROL SYSTEM SHALL BE INSTALLED AS GRADING PROGRESSES.
  - CONTRACTOR SHALL HAVE A WATER TRUCK MADE AVAILABLE TO ASSIST IN CONTROLLING DUST AND WIND EROSION.
- CITY OF FRUITA FUGITIVE DUST CONTROL NOTES:
- ANY STOCKPILES OF STRIPPED MATERIALS TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL.
  - TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARPED TO AID IN THE CONTROL OF AIRBORNE DUST.
  - DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.

LOGAN SIMPSON  
DESIGN INC.

**MOLSSON**  
ASSOCIATES

4690 Telega Mountain Drive, Suite 200  
Golden, CO 80403  
TEL: 303.237.2072  
FAX: 303.237.2659  
www.molssonassociates.com



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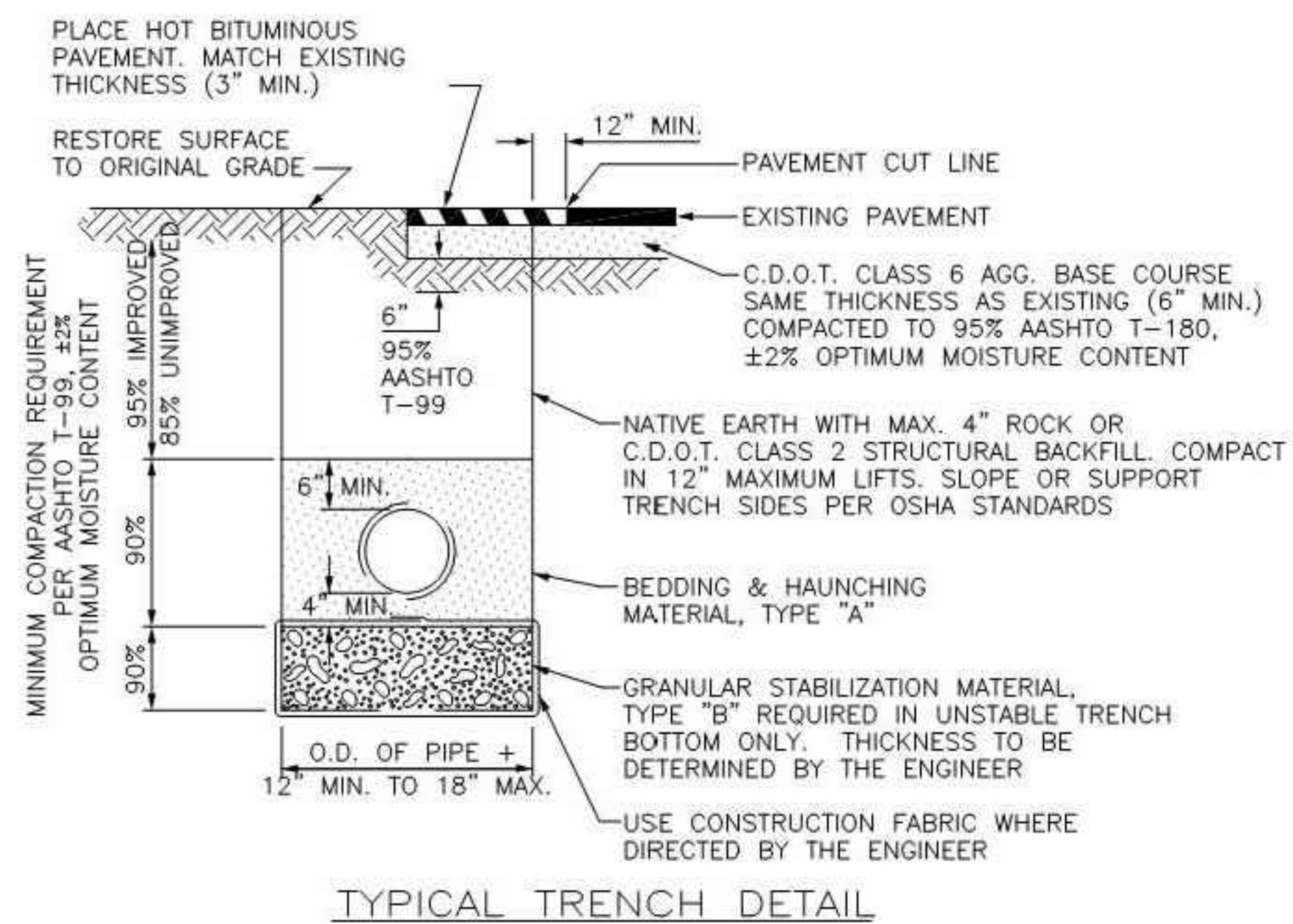
EROSION CONTROL PLAN	2015
DOWNTOWN STREETScape IMPROVEMENTS	
FRUITA, CO	
drawn by: SE	
checked by: AK	
approved by: WP	
QA/QC by:	
project no.: 14-1169	
drawing no.:	
date: 04-15-15	



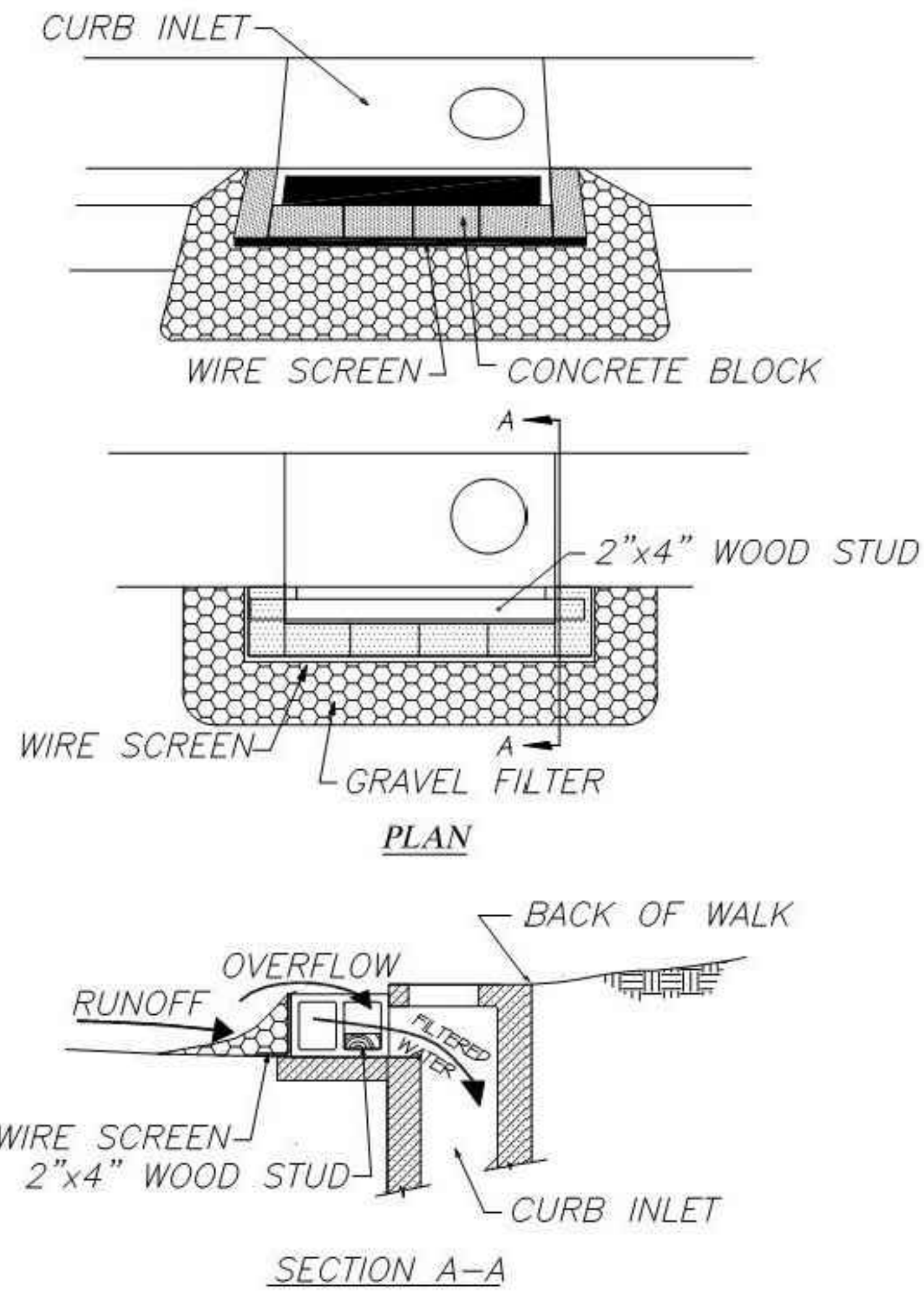
TRENCH BACKFILL GRADATION TABLE:

SIEVE SIZE	PERCENT, PASSING BY WEIGHT		
	PIPE BEDDING & HAUNCHING MATERIAL (TYPE A)	GRANULAR STABILIZATION MATERIAL TYPE B (SCREENED/CRUSHED ROCK)	IMPORTED BACKFILL MATERIAL (USE ONLY WHERE SPECIFIED OR DIRECTED BY THE CITY OF FRUITA)
4"	---	---	100
2"	---	100	---
1"	100	---	---
#4	---	15 MAX.	---
NO 200	20 MAX.	---	3-20*

ALL BACKFILL MATERIAL SHALL BE PLACED FULL WIDTH IN 12" MAX. LIFTS AND COMPACTED TO THE MIN. RELATIVE DENSITIES SHOWN  
 \*PLASTIC INDEX (PI) SHALL NOT BE MORE THAN 7.



TYPICAL TRENCH DETAIL



CURB INLET FILTER (N.T.S.)

**Curb Inlet Filter**

1. Install immediately after curb inlet box and frame are placed.
2. To remain in place until street paving is completed.

CITY OF FRUITA ENGINEERING DEPARTMENT  
 SCALE: HORIZONTAL-N/A, VERTICAL-N/A  
 REVISION: 2009 STANDARDS REVISION DATE: 3/18/09  
 TRENCH DETAIL NOTES  
 FILE: SHEET: 1-4D  
 DRAWN BY: CLD DATE DRAWN: 5/06  
 CHECKED BY: \_\_\_\_\_

CITY OF FRUITA ENGINEERING DEPARTMENT  
 SCALE: HORIZONTAL-N/A, VERTICAL-N/A  
 REVISION: 2009 STANDARDS REVISION DATE: 3/18/09  
 FILE: SHEET: 6.8C  
 DRAWN BY: CLD DATE DRAWN: 5/06  
 CHECKED BY: \_\_\_\_\_



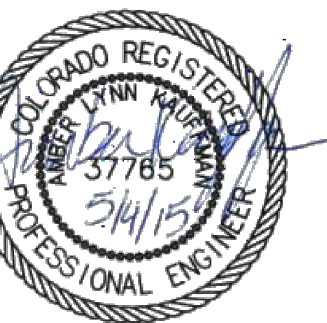
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REV. NO.	DATE	REVISION DESCRIPTION

DETAILS	REVISIONS
DOWNTOWN STREETScape IMPROVEMENTS	2015
FRUITA, CO	



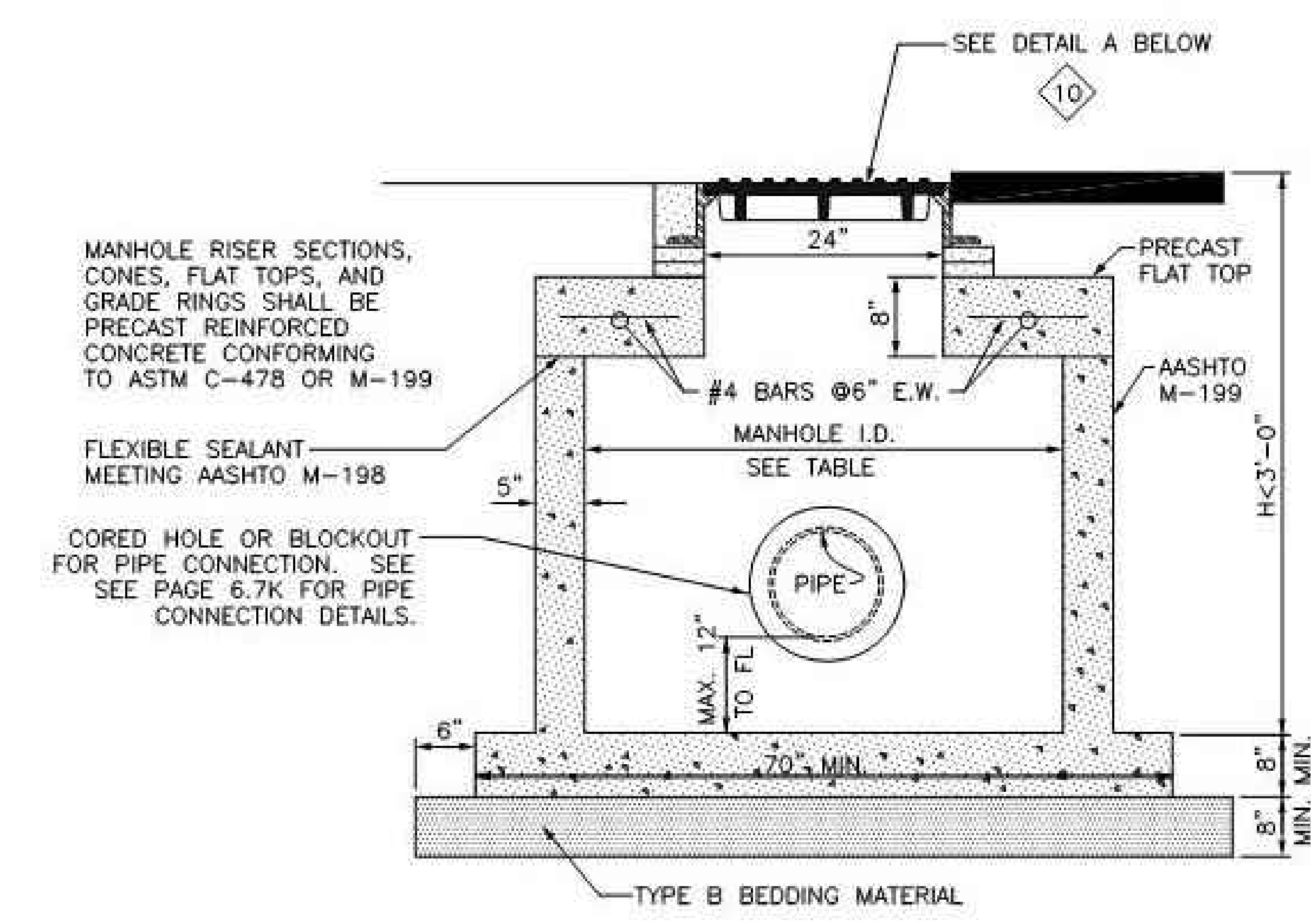


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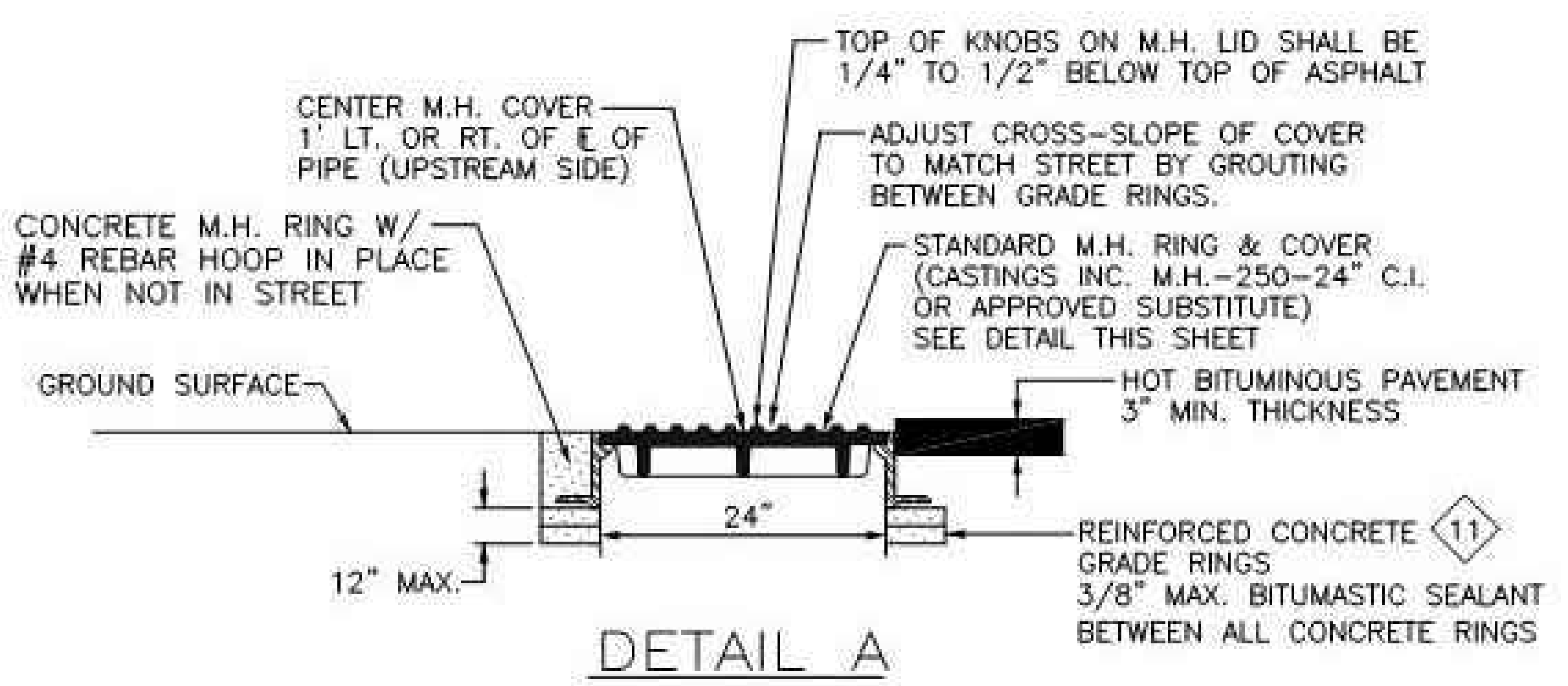


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REV. NO.	DATE	REVISIONS DESCRIPTION	REVISIONS



STANDARD SHALLOW MANHOLE  
PRECAST BASE



PIPE DIAMETER	MANHOLE I.D.
18" OR LESS	48"
21"-30"	60"
36"	72"
42"-48"	90"

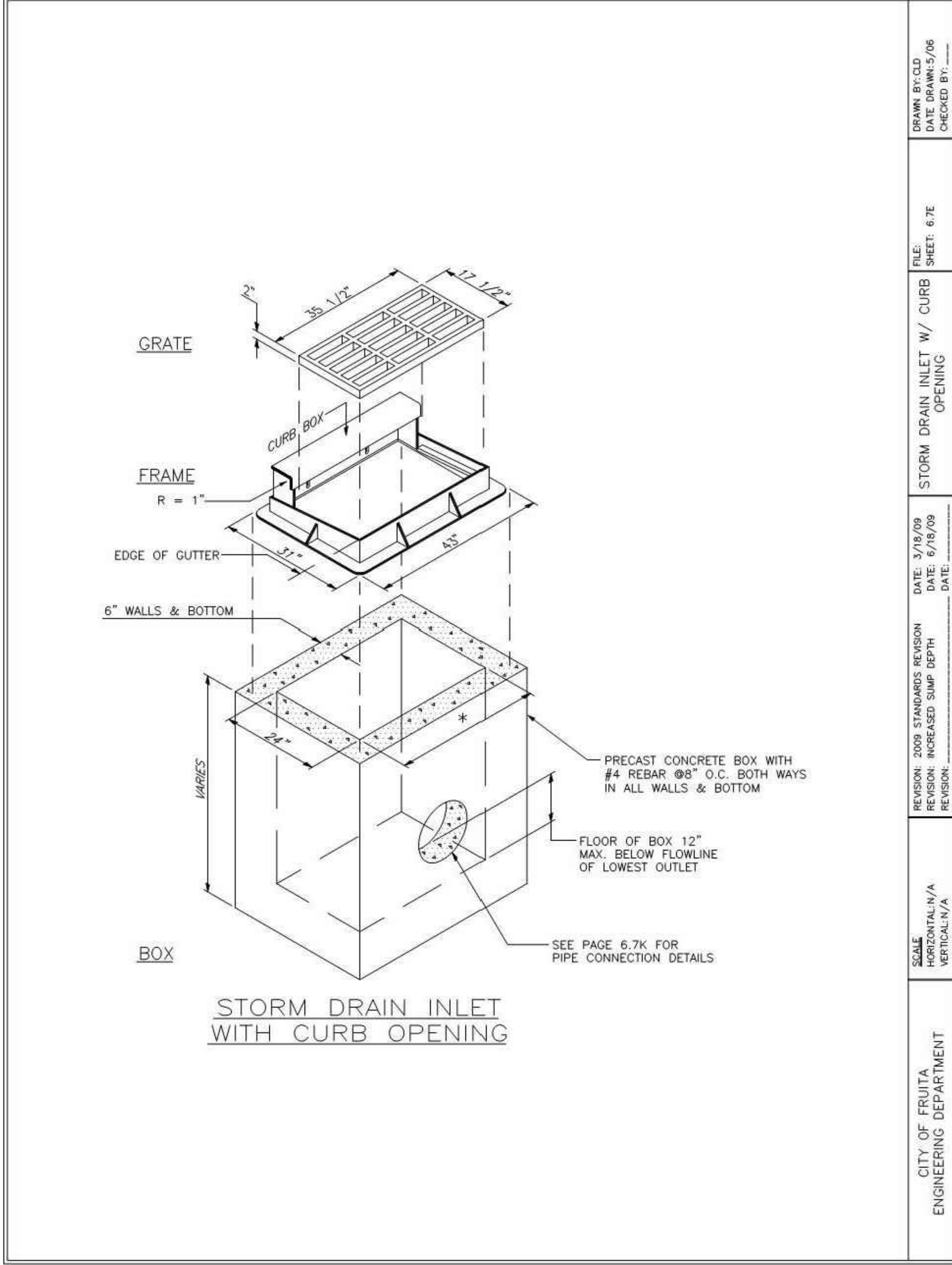
- 10 MANHOLE RING AND COVER CAN BE SET TO FINISHED GRADE, USING NON-SHRINK GROUT TO ADJUST RING ELEVATION. GROUT SHALL NOT EXCEED .15 FT. THICKNESS. GROUT SHALL BE PLACED ONLY UNDER THE CAST IRON RING. NO GROUT SHALL BE PLACED BETWEEN CONCRETE GRADE RINGS.
- 11 STEEL PAVING RINGS ARE NOT ALLOWED FOR GRADE ADJUSTMENT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C-478 OR AASHTO M-199. NO STEPS ARE REQUIRED IN STORM SEWER MANHOLES.

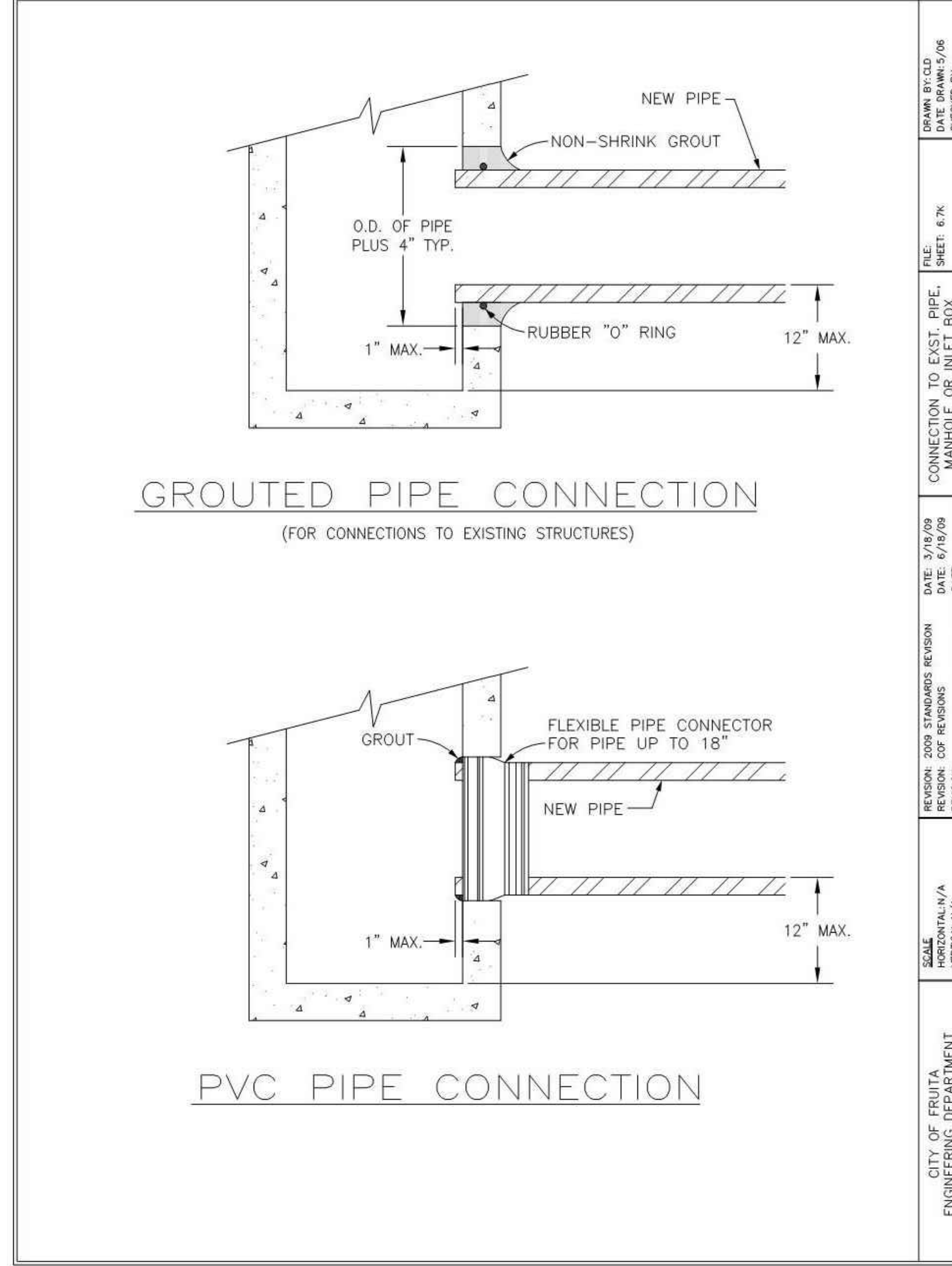
CITY OF FRUITA ENGINEERING DEPARTMENT	SCALE HORIZONTAL: N/A VERTICAL: N/A	REVISION: 2009 STANDARDS REVISION REVISION: INCREASED SUMP DEPTH REVISION: _____	DATE: 3/18/09 DATE: 6/18/09 DATE: _____	SHALLOW MANHOLE PRECAST BASE	FILE: SHEET: 6.7D	DRAWN BY: CLD DATE DRAWN: 5/06 CHECKED BY: _____
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drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by: \_\_\_\_\_  
project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15





CITY OF FRUITA ENGINEERING DEPARTMENT	SCALE: HORIZONTAL N/A	REVISION: 2009 STANDARDS REVISION	DATE: 3/18/09	FILE: STORM DRAIN INLET W/ CURB OPENING	DRAWN BY: CLD
	VERTICAL N/A	REVISION: INCREASED SUMP DEPTH	DATE: 6/18/09	SHEET: 6.7E	DATE DRAWN: 5/06
		REVISION:	DATE:	CHECKED BY: _____	



CITY OF FRUITA ENGINEERING DEPARTMENT	SCALE: HORIZONTAL N/A	REVISION: 2009 STANDARDS REVISION	DATE: 3/18/09	FILE: CONNECTION TO EXIST. PIPE, MANHOLE OR INLET BOX	DRAWN BY: _____
	VERTICAL N/A	REVISION: COF REVISIONS	DATE: 6/18/09	SHEET: 6.7K	DATE DRAWN: 5/06
		REVISION:	DATE:	CHECKED BY: _____	

drawn by: \_\_\_\_\_ SE  
 checked by: \_\_\_\_\_ AK  
 approved by: \_\_\_\_\_ WP  
 QA/QC by: \_\_\_\_\_  
 project no.: 14-1169  
 drawing no.: \_\_\_\_\_  
 date: 04-15-15

**DETAILS**  
 DOWNTOWN STREETScape IMPROVEMENTS

FRUITA, CO 2015

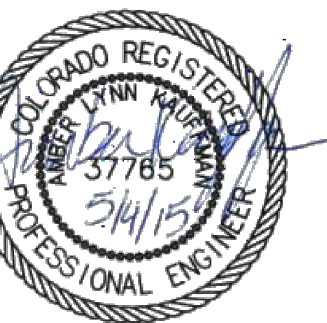
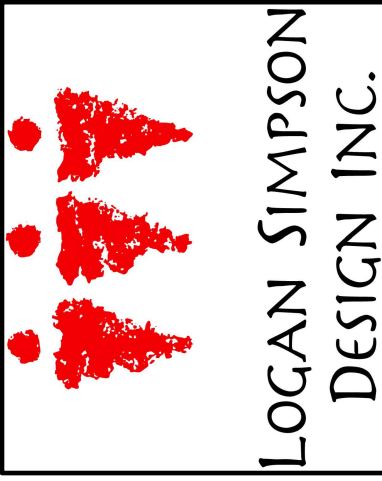
REV. NO.	DATE	REVISION DESCRIPTION

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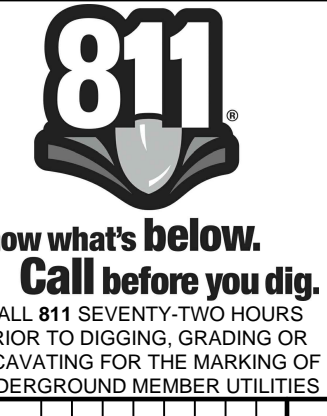
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## APPROVED STORM DRAIN INLETS

TYPE	FRAME	GRATE TYPE	BOX DIM. INSIDE
SINGLE GRATE WITH CURB OPENING	NEENAH R-3246	C,DR,DL,L,V	24 X 36"
	CASTINGS R-3246	C,DR,DL,L,V	
	DEETER 2045	C,DR,DL,L,V	
DOUBLE GRATE WITH CURB OPENING	NEENAH R-3296 - A	C,DR,DL,L,V	24" X 73"
	CASTINGS R-3246,DOUBLE DEETER R-2045,DOUBLE	C,DR,DL,L,V	
TRIPLE GRATE WITH CURB OPENING	NEENAH R-3246-B	C,DR,DL,L,V	24" X 110"
	CASTINGS R-3246,TRIPLE DEETER 2045,TRIPLE	C,DR,DL,L,V	
	CASTINGS CI-19 X 27	C	
OR CASTINGS NO. 13	C	19 1/2"x35 1/2"	
C.D.O.T. TYPE R	SEE STANDARD M-604-12		
C.D.O.T. TYPE 13	SEE STANDARD M-604-13		
SINGLE GRATE W/ DRIVE-OVER CURB	NEENAH IFG 3246DO		

STORM DRAIN INLET GRATES AND FRAMES IN TRAFFIC AREAS SHALL BE BICYCLE SAFE, SHALL BE DESIGNED TO WITHSTAND H<sub>2</sub>O LOADING AND SHALL MEET REQUIREMENTS OF AASHTO M105, CLASS 30.

REV. NO.	DATE	REVISIONS DESCRIPTION

DETAILS	2015
DOWNTOWN STREETScape IMPROVEMENTS	
FRUITA, CO	

drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by: \_\_\_\_\_  
project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15

SHEET  
DT4

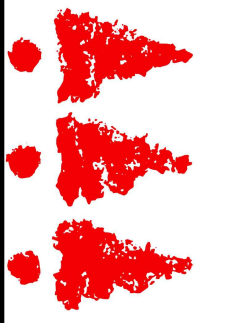
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CITY OF FRUITA ENGINEERING DEPARTMENT	<b>SCALE</b> HORIZONTAL: N/A VERTICAL: N/A	REVISION: 2009 STANDARDS REVISION REVISION: _____ REVISION: _____	DATE: 3/18/09 DATE: _____ DATE: _____	APPROVED STORM DRAIN INLET TABLE	FILE: SHEET: 6.71	DRAWN BY: CLD DATE DRAWN: 5/06 CHECKED BY: _____
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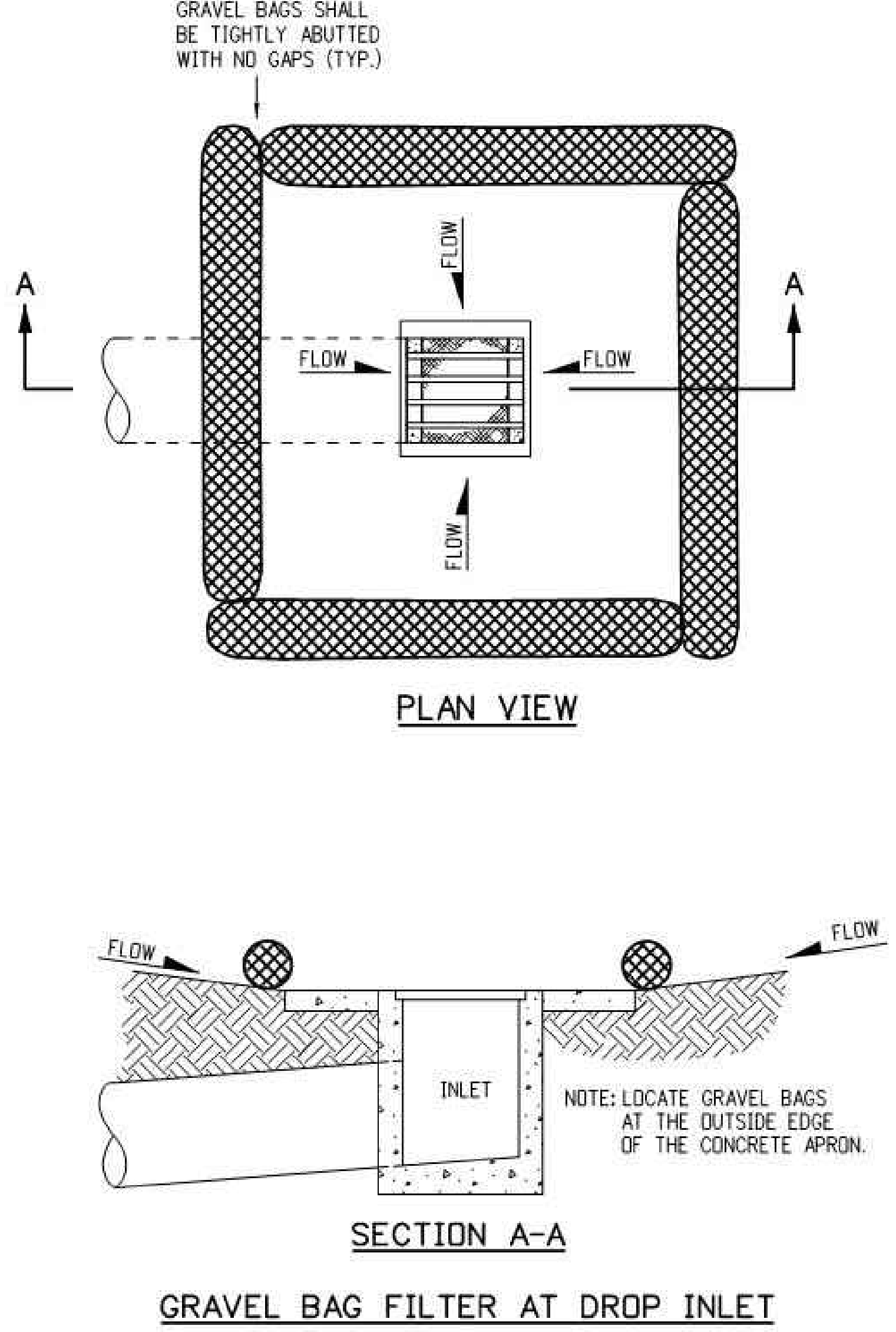
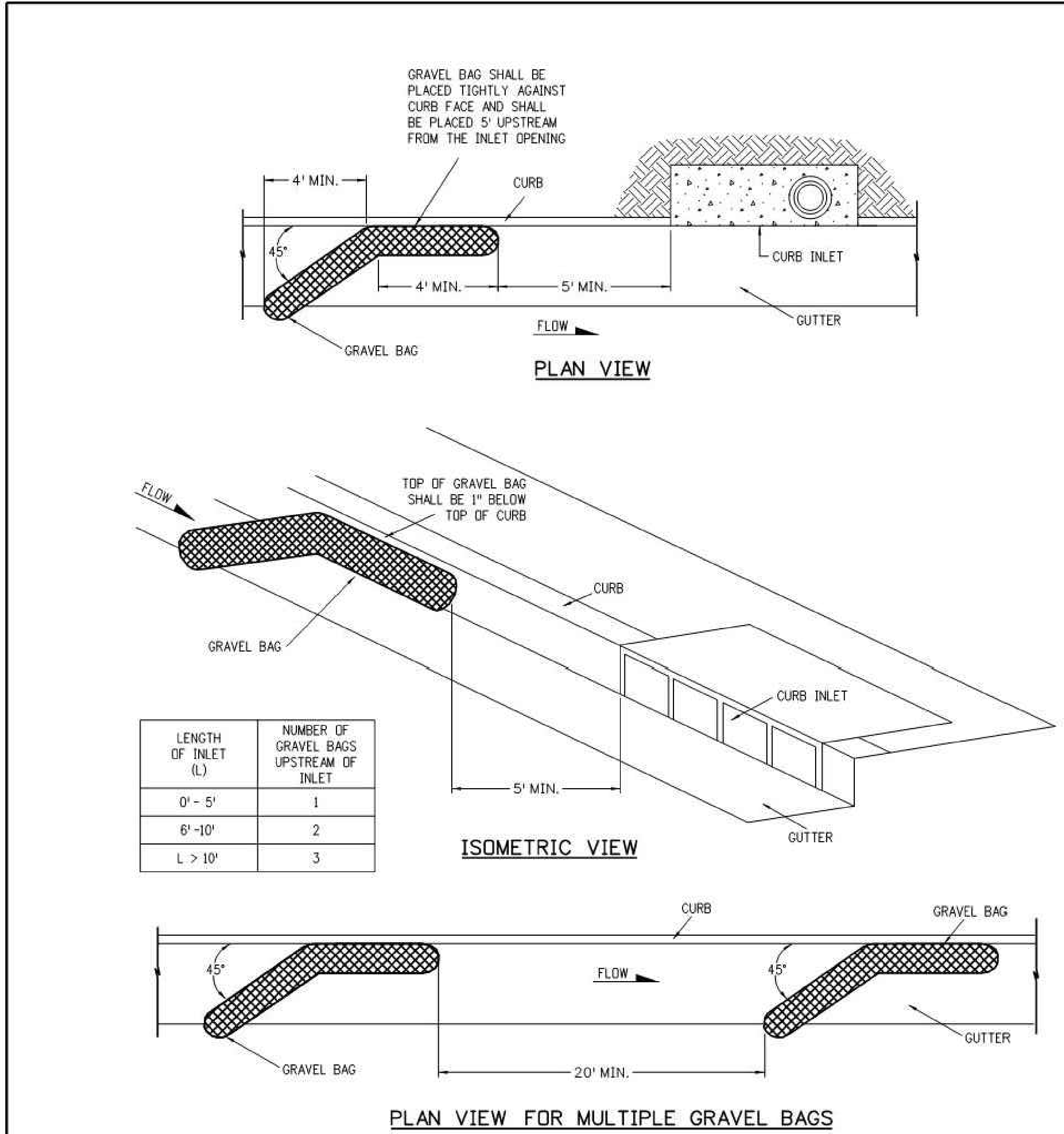
4690 Table Mountain Drive, Suite 200 TEL: 303.237.2072  
Golden, CO 80403 FAX: 303.237.2659 www.olssonassociates.com



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**GRAVEL BAG APPLICATIONS**

Computer File Information	
Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 2080106012.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation  
4201 East Arkansas Avenue  
Denver, Colorado 80222  
Phone: (303) 757-9083  
Fax: (303) 757-9820

Project Development Branch DD/LTA

**TEMPORARY EROSION CONTROL**

Issued By: Project Development Branch on July 4, 2012

STANDARD PLAN NO.  
M-208-1  
Sheet No. 6 of 12

REV. NO.	DATE	REVISIONS DESCRIPTION

DETAILS

DOWNTOWN STREETScape IMPROVEMENTS

FRUITA, CO

2015

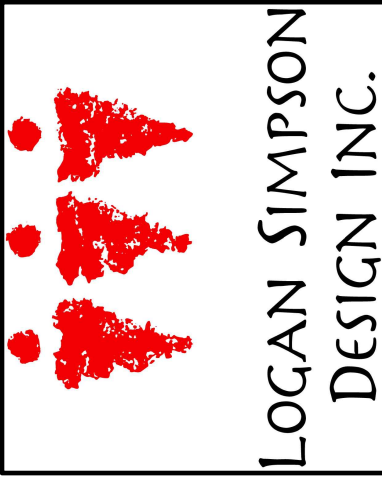
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checked by: \_\_\_\_\_ AK  
approved by: \_\_\_\_\_ WP  
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project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15

SHEET DT6

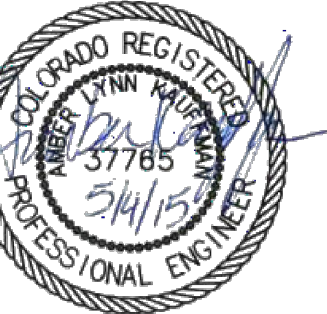
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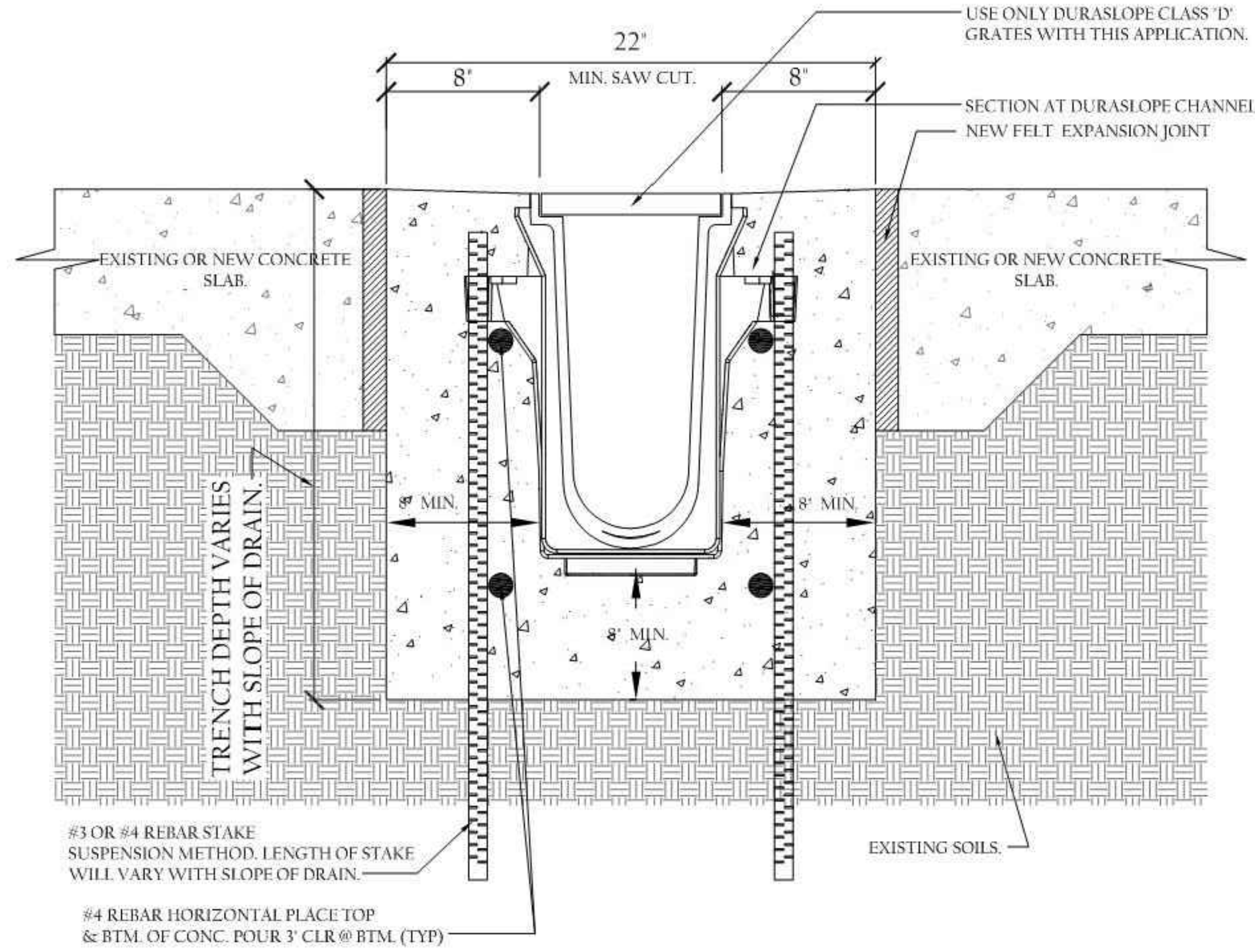
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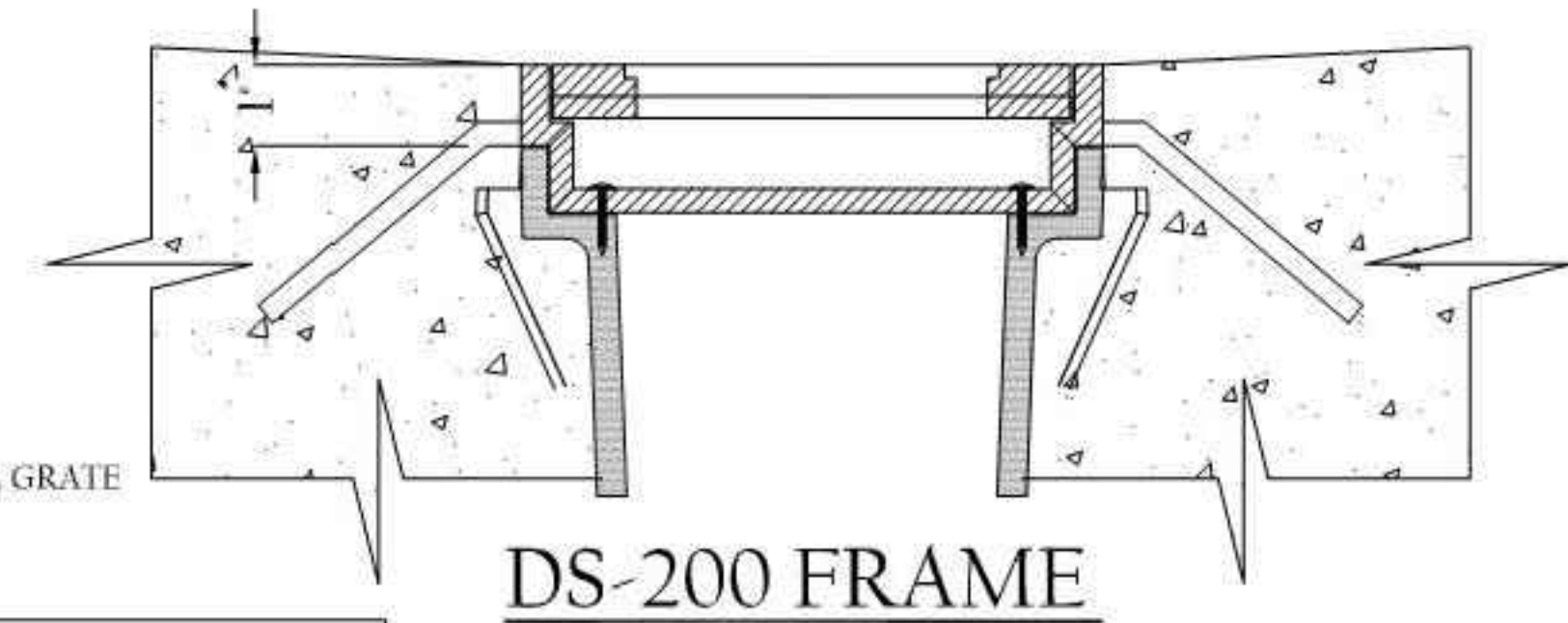
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**NOTE:**

CHANNELS TO BE INSTALLED WITH BLANK GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR (COVER HOLES WITH TAPE).

SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 8" OF CONCRETE OR THICKNESS OF THE CONCRETE SLAB WITH A MINIMUM OF 3,500 P.S.I. AVOID FULL LOAD TRAFFIC FOR 28 DAYS OR UNTIL CONCRETE HAS COMPLETELY HARDENED.



**TYPICAL DURASLOPE INSTALLATION**

CLASS 'D' P/L DRAIN APPLICATION FOR CONCRETE - REBAR SUSPENSION METHOD.

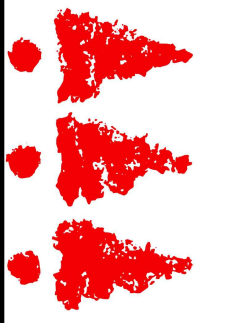
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REV. NO.	DATE	REVISIONS DESCRIPTION

DETAILS	2015
DOWNTOWN STREETScape IMPROVEMENTS	
FRUITA, CO	

drawn by: SE  
 checked by: AK  
 approved by: WP  
 QA/QC by:    
 project no.: 14-1169  
 drawing no.:    
 date: 04-15-15





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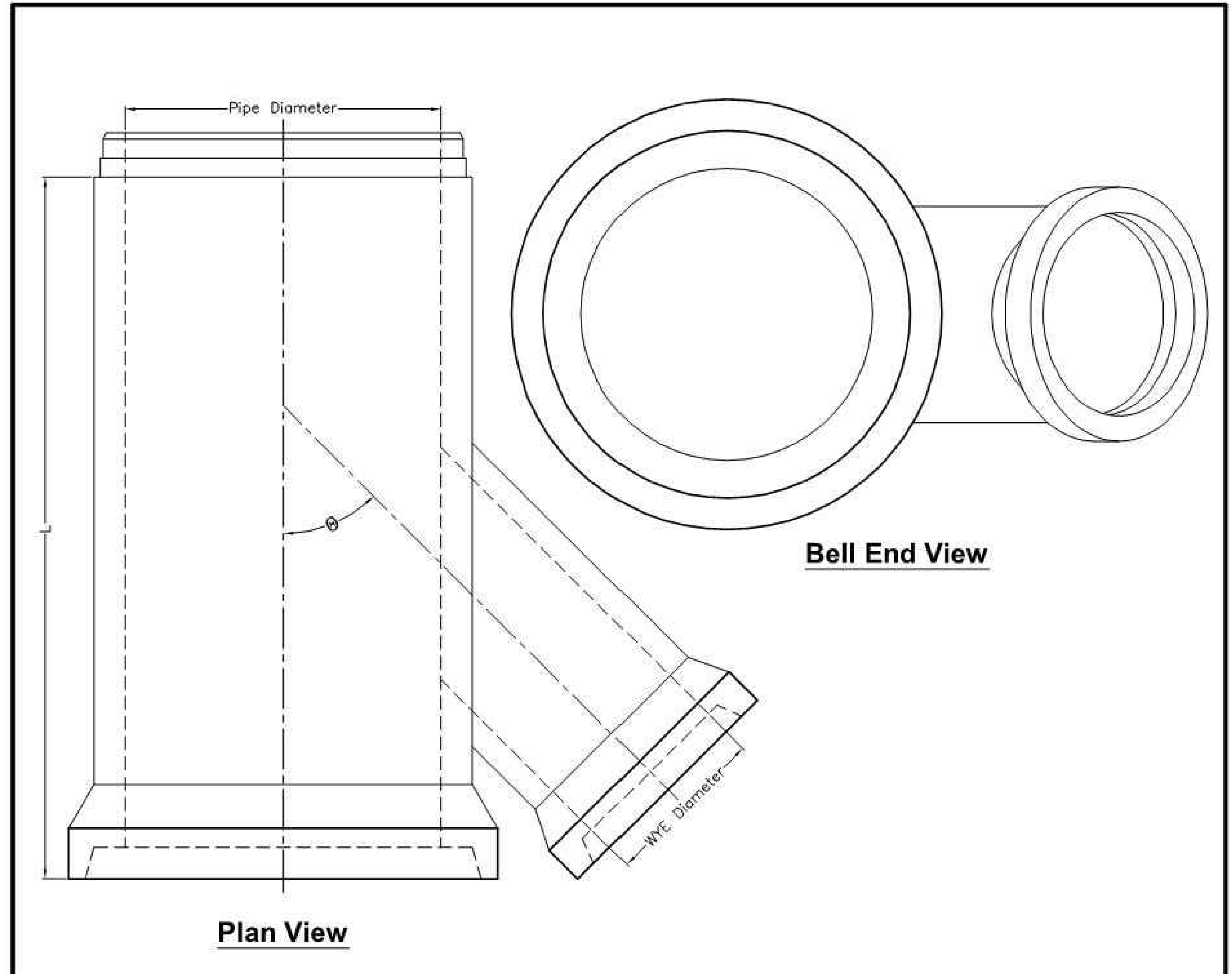
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FRUITA, CO	

drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by:      
project no.: 14-1169  
drawing no.:      
date: 04-15-15

SHEET  
DT8



**Special Identification #** Station: 102+77.34, 37.44' L

**Pipe Dia. / Class:** 12" STORM SEWER PIPE

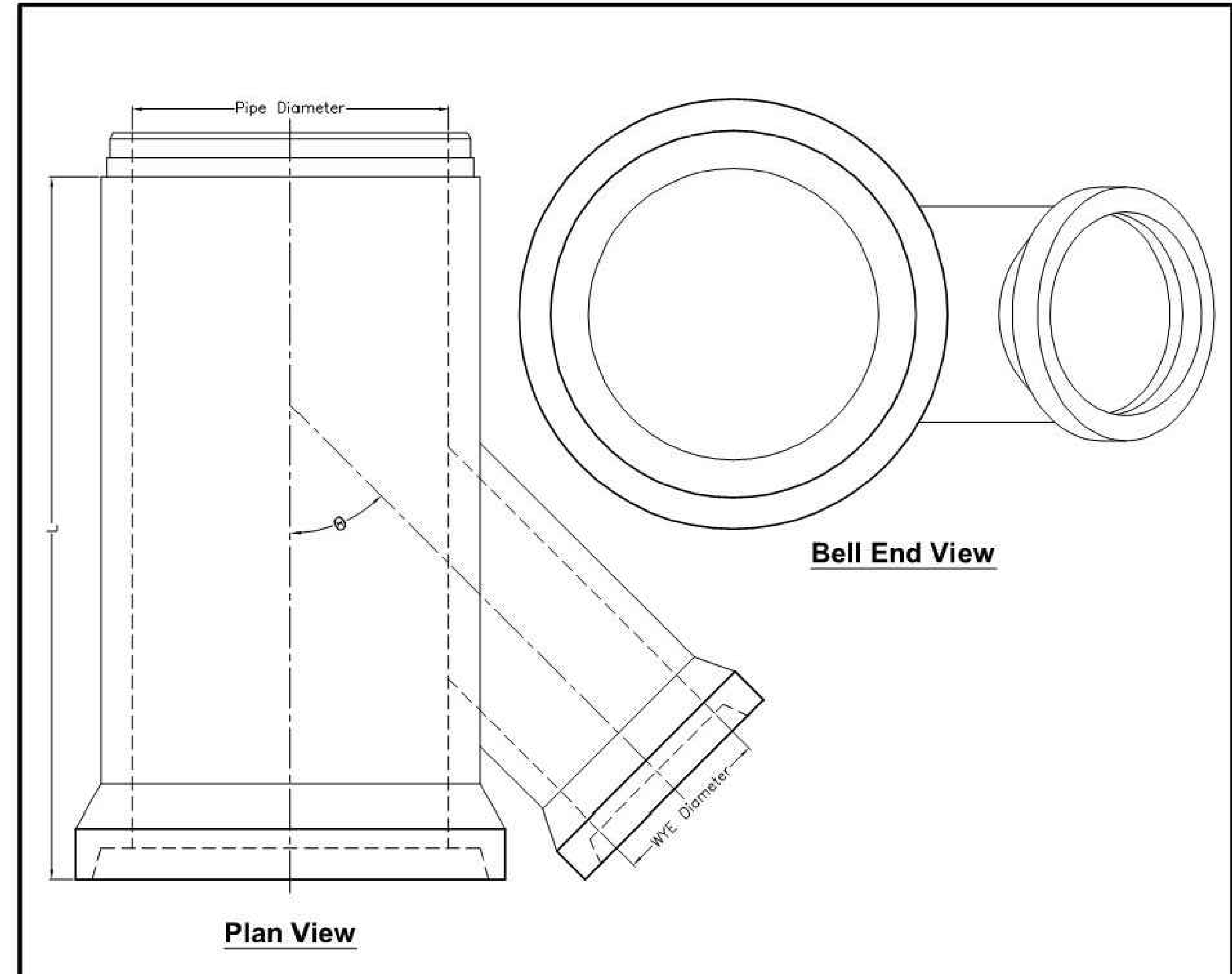
**WYE Dia. / Class:** 12" STORM SEWER PIPE

**Spigot Leg =** 60"

**Angle  $\theta$  (Degrees) =** 51.86

**Direction of WYE =** RIGHT  
\*Direction of WYE (Right or Left) as Looking into the Bell End

Drawing #	Project	Date
	RCP	<b>STANDARD PRECAST WYE JOB ORDER # M-603-2</b>  Copyright © 2011 Oldcastle Precast, Inc.
	Pipe Submittals	
	ISSUE DATE: SEPTEMBER, 2011	
www.oldcastleprecast.com		



**Special Identification #** Station: 106+30.41, 26.81' L

**Pipe Dia. / Class:** 30" STORM SEWER PIPE

**WYE Dia. / Class:** 18" STORM SEWER PIPE

**Spigot Leg =** 60"

**Angle  $\theta$  (Degrees) =** 97.72

**Direction of WYE =** RIGHT  
\*Direction of WYE (Right or Left) as Looking into the Bell End

Drawing #	Project	Date
	RCP	<b>STANDARD PRECAST WYE JOB ORDER # M-603-2</b>  Copyright © 2011 Oldcastle Precast, Inc.
	Pipe Submittals	
	ISSUE DATE: SEPTEMBER, 2011	
www.oldcastleprecast.com		

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SECTION 329113 – SOIL PREPARATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes planting soils specified by composition of the mixes.  
 B. Related Requirements:  
 1. Section 329300 "Planting" for placing planting soil for plantings.

1.3 PROJECT CONDITIONS

A. Existing Utilities:  
 1. Locate sewer, water, irrigation, gas, electric, phone and other pipelines or conduits and equipment prior to commencement of work.  
 2. Protect lines from damage during work. Soil preparation contractor shall be responsible for any damage to existing utilities and other site improvements caused by operations under this Section.  
 3. Pay for costs of repairs made by contractor designated by Owner's Representative.

1.4 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation. This can be amended or unamended soil as indicated.  
 B. CEC: Cation exchange capacity.  
 C. Compost: The product resulting from the controlled biological decomposition of organic material that has been sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth.  
 D. Imported Soil: Soil that is transported to Project site for use.  
 E. NAPT: North American Proficiency Testing Program. An SSSA program to assist soil-, plant-, and water-testing laboratories through interlaboratory sample exchanges and statistical evaluation of analytical data.  
 F. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."  
 G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.  
 H. SSSA: Soil Science Society of America.  
 I. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.  
 J. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.  
 K. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.  
 L. USCC: U.S. Composting Council.

1.5 SUBMITTALS

A. Product Data: For each type of product.  
 1. Include recommendations for application and use.  
 2. Include test data substantiating that products comply with requirements.  
 3. Soil Amendment: Submit soil amendment sample prior to delivery to site. Sample is to be representative. Submit test results as indicated under materials below.  
 4. Material Certificates: For each type of imported soil, soil amendment and fertilizer before delivery to the site, according to the following:  
 a. Manufacturer's qualified testing agency's certified analysis of standard products.  
 b. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUP #25.  
 c. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.  
 5. Delivery Tickets: Delivery tickets of materials received on site to verify quantities.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory, experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.  
 1. Laboratories: Subject to compliance with requirements, provide testing by one of the following:  
 a. CSU Extension, Soil, Water and Plant Testing Lab, Campus Delivery 1120, NESB Room A319, Fort Collins, CO 80523-1120. Phone (970) 491-5061  
 b. Brigham Young University, Soil and Plant Analysis Lab, 255 WDB, Provo, UT 84602. Phone (801) 378-2760

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.  
 B. Material will be inspected upon arrival at project site. Immediately remove unacceptable material from project site.  
 C. Bulk Materials:  
 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.  
 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.  
 3. Do not move or handle materials when they are wet or frozen.  
 4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 – PRODUCTS

2.1 PLANTING SOILS SPECIFIED BY COMPOSITION

A. Topsoil:  
 1. Imported Topsoil: Any additional topsoil needed to complete soil preparation of landscape areas.  
 2. Imported Topsoil shall be a friable loam, typical of cultivated local topsoil, containing at least 2% humus. It shall be taken from well-drained arable site and shall be reasonably free of subsoil, stones, clods, sticks, roots and other objectionable extraneous mater or debris. No stones or other non-soil materials over one inch (1") in size or exceeding 8% of the total volume per ton shall be allowed. It shall contain no toxic material and shall have acidity in the range of ph 5.5 to ph8.5. No topsoil shall be delivered in a frozen or muddy condition.

2.2 SOIL AMENDMENTS

A. Compost:  
 1. Soil amendment shall be a high quality composted material containing a minimum of 30% organic matter by dry weight. The mixture shall be free from clay subsoil, stones, lumps, plants or roots, sticks, weed stolons, seeds, high sodium content and other materials harmful to plants. The compost shall be coarsely ground with an even composition and have acidity in the range of PH 5.5 to PH 7.0. All material shall be sufficiently composted such that no material used is recognizable. Sand, gypsum and mountain peat moss are not acceptable.  
 2. The Contractor shall submit a sample and test results from an approved soils testing laboratory showing the acceptable mixture composition and analysis to the City for approval ten (10) days before delivery to the site.

PART 3 – EXECUTION

3.1 INSPECTION

A. Unsatisfactory Conditions: Report in writing to City Representative.  
 B. Acceptance: Beginning of installation means acceptance of existing conditions by installer.

3.2 GENERAL

A. Place planting soil and fertilizers according to requirements in other Specification Sections.  
 B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.  
 C. Do not perform work when existing site conditions will not provide satisfactory results. Obtain subgrade inspection and approval from the City's Representative prior to commencing with this section of work.  
 D. Proceed with placement only after unsatisfactory conditions have been corrected.  
 E. Runoff: Take measures and furnish equipment and labor necessary to control flow, drainage, and accumulation of water to run off grounds as is intended by grades.

3.3 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

A. Excavation: Coordinate with topsoil stripping and stockpiling requirements.  
 B. Existing Utilities: Protect from damage any sewer, water, gas, electric, irrigation or other pipelines or conduits during work.  
 C. Unacceptable Materials: Grub and remove unsuitable woody and rock materials present in surface grade  
 D. Unsuitable Materials: Clean soil to contain a maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.

3.4 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

A. General: Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.  
 B. Subgrade Preparation: Till subgrade in all plant areas to 6 inch depth. Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.  
 C. Spreading Topsoil: Spread unamended soil to depths indicated. Coordinate depths required to meet finish grades after mixing with amendments and natural settlement. Do not mix amendments if soil or subgrade is frozen, muddy, or excessively wet.  
 D. Amendments: Thoroughly topsoil with compost at a ratio of 1 part compost per 4 parts soil.  
 E. Compaction: Compact planting soil to 82 percent of maximum Standard Proctor density according to ASTM D 698. Do not overcompact.  
 F. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.5 WEED CONTROL

A. Weed Control: It is the Contractor's responsibility to maintain the site soils in a condition that is generally free of weeds. Any existing weed growth is to be removed during the clearing and grubbing process. Weeds that germinate within the Construction Limits after that time are to be maintained through application of chemical weed control 3 weeks prior to soil preparation.  
 1. Where directed by the City's Representative, apply herbicide (Round-up) as applicable to areas where noxious weeds have established, except in wetland or near ditches. Herbicide to be applied by qualified contractors at the rate recommended by the manufacturer. Precautions shall be taken to avoid drifting or spray onto other properties, wetland areas or open bodies of water and shall not be done in breezy conditions. Plant material not designated for herbicide application that is damaged shall be replaced by the Contractor at no expense to the Owner.

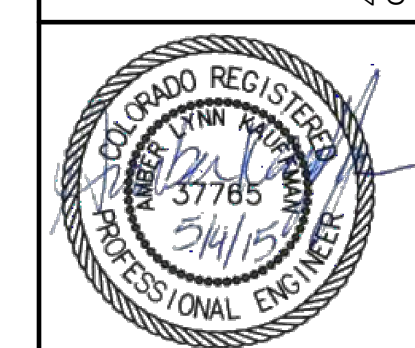
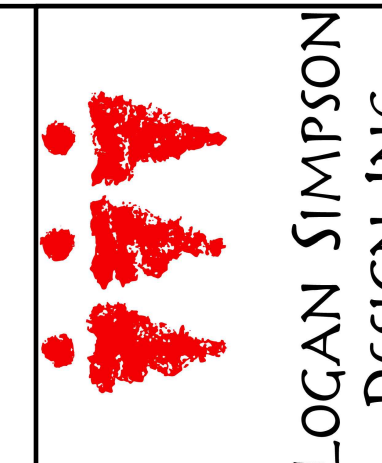
3.6 PROTECTION

A. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:  
 1. Storage of construction materials, debris, or excavated material.  
 2. Parking vehicles or equipment.  
 3. Vehicle traffic.  
 4. Erection of sheds or structures.  
 5. Impoundment of water.  
 6. Excavation or other digging unless otherwise indicated.  
 B. If planting soil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Owner and replace contaminated planting soil with new planting soil.

3.7 CLEANING

A. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.  
 B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.

END OF SECTION 329113



OLLSSON ASSOCIATES 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. NO.	DATE	REVISIONS DESCRIPTION

PROJECT SPECIAL PROVISIONS	2015
DOWNTOWN STREETScape IMPROVEMENTS	
FRUITA, CO	

drawn by: \_\_\_\_\_ SE  
 checked by: \_\_\_\_\_ AK  
 approved by: \_\_\_\_\_ WP  
 QA/QC by: \_\_\_\_\_  
 project no.: 14-1169  
 drawing no.: \_\_\_\_\_  
 date: 04-15-15

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SECTION 015639 – TEMPORARY TREE AND PLANT PROTECTION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Sections:

- 1. Demolition.
2. Earthwork.
3. Trenching and Backfilling.

1.3 DEFINITIONS

A. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

B. Tree Protection Area: Generally, a tree protection area should consist of the ground encompassing from 1.5 (minimum) to 2.0 times the distance between the trunk and dripline, or one linear foot away from the trunk base for every inch diameter of the trunk, whichever is greater, unless otherwise directed by Owner's Representative.

- 1. With groups of trees or where an array effect is present, there may be discontinuous (non-overlapping) perimeters of tree protection areas which result in difficult to maintain or ineffective tree protection fencing. In these cases, even though tree protection areas do not overlap, they should be treated as though they do if the distance between the perimeters of such areas is less than thirty (30) feet. In effect, this will artificially enlarge the area of tree protection, but will result in a more clearly defined, manageable area.

C. Dripline: The outermost edge of the tree's canopy or branch spread. The area within a tree's dripline is all the ground under the total branch spread.

D. Critical Root Zone: Generally, all of the ground area included in the dripline.

E. Diameter (Caliper) size (in inches) of a tree's trunk is measured at: 1. six (6) inches above grade for trunk diameters up to and including four (4) inches; 2. twelve (12) inches above grade for trunk diameters from four (4) inches up to and including eight (8) inches; and 3. four and a half (4½) feet above grade for trunk diameters greater than eight (8) inches; in accordance with guidelines established in the "Guide for Plant Appraisal". All measurements should be rounded to the nearest inch.

F. High-value Shrub: Any specimen shrub with an appraised value of \$100.00 or more.

1.4 SUBMITTALS

A. Proposed methods and schedule for effectuating tree and other plant protection shall be submitted for approval. Contractor shall submit construction schedule which includes a time frame for work near existing plants. Approval of such shall be obtained from the Owner's Representative prior to commencement of construction near tree protection areas.

B. Proposed methods, materials, and schedule for root pruning, branch pruning, and other tree maintenance shall be submitted for approval. The Owner's Representative or Project Consulting Arborist shall mark the location of root pruning lines in the field prior to the operation. If possible, root pruning should occur between autumnal leaf fall and spring foliage. Root pruning during the growing season shall require approval of the Owner's Representative or Project Consulting Arborist.

C. Protection-Zone Fencing: Cut sheet on protection fencing, posts and attachments.

D. Protection-Zone Signage: Full-size Samples of each size and text, ready for installation.

E. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

- 1. Species and size of tree.
2. Location on site plan. Include unique identifier for each.
3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified arborist and tree service firm.

B. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

C. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

D. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

- 1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.6 QUALITY ASSURANCE

A. Contractor shall comply with applicable requirements and recommendations of the most current versions of the following standards and guidelines. Where these conflict with other specified requirements, the more restrictive requirements shall govern:

- 1. ANSI Z133.1-1988 - American National Standard for Tree Care Operations
2. ANSI A300-1994 - Standard Practices for Trees, Shrubs and Other Woody Plant Maintenance
3. NATIONAL ARBORIST ASSOCIATION STANDARDS - Pruning, Cabling and Bracing, Fertilization
4. GUIDE FOR PLANT APPRAISAL-8TH EDITION, Authored by the Council of Tree and Landscape Appraisers; published by the International Society of Arboriculture.

B. Arborist Qualifications: An independent consultant with a degree in a field related to arboriculture, and at least five years field experience in tree preservation or on-site monitoring of public works or construction projects involving tree retention and protection. The Consultant should be an active member in the American Society of Consulting Arborists and International Society of Arboriculture.

C. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

D. Preinstallation Conference: Conduct conference at site.

- 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
b. Enforcing requirements for protection zones.
c. Arborist's responsibilities.
d. Field quality control.

1.7 PROJECT CONDITIONS

A. The following practices are prohibited within protection zones:

- 1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Protection-Zone Fencing:
1. 4' orange snow fence secured with T-posts.

PART 3 – EXECUTION

3.1 GENERAL

A. There should be daily supervision of field crews by the Owner's Representative or Project Consulting Arborist during the critical phases of the project: for example, demolition of existing concrete; root pruning; construction of retaining walls and construction of new curb or sidewalk in tree protection areas. Owner shall be responsible for retaining Project Consulting Arborist for duration of project.

B. If it appears that the completion of the construction may cause damage to the branches of any tree, the Contractor shall contact the Owner's Representative. The Owner's Representative will make a determination as to whether such damage is eminent.

C. To prevent or minimize soil compaction, designated routes for equipment and foot traffic by work crews shall be determined prior to commencing construction activities, and shall be indicated in the tree protection plan to be submitted by Contractor. These routes shall be marked at the site, prior to commencement of construction, with tree protection fencing and signage as specified in Part 3.1, E of this section.

D. Motorized equipment and trailers, including tractors, bobcats, bulldozers, trackhoes, trucks, cars, and carts shall not be allowed access within tree protection areas. Should access be necessary within designated tree protection areas, the existing grade shall be covered with six (6) to eight (8) inches of wood mulch to help distribute the weight of equipment and to minimize soil compaction and rutting. Plywood and/or mulch is not acceptable bridging material for driving over exposed tree roots. Exposed tree roots shall not be driven over. The Owner's Representative or Project Consulting Arborist shall be notified and shall approve of the access and driving surface prior to its use.

E. Materials and supplies shall not be stockpiled or stored within the tree protection area. Should temporary storage be necessary within designated tree protection areas, the existing grade shall be covered with double, overlapping sheets of ¾ inch thick plywood, or six (6) to eight (8) inches of wood mulch to help distribute the weight of materials or supplies and to minimize soil compaction.

F. Under no circumstances shall any objects or materials be leaned against or supported by a tree's trunk, branches, or exposed roots. The attachment or installation to trees of any sign, cable, wire, nail, swing, or any other material that is not needed to help support the natural structure of the tree is prohibited. Standard arboricultural techniques such as bracing or cabling that are performed by professional arborists are acceptable upon approval by the Owner's Representative or Project Consulting Arborist.

3.2 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.3 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain Tie a 1-inch yellow vinyl tape around each tree trunk.

3.4 CONCRETE AND PAVEMENT REMOVAL

A. Caution should be used during removal of existing street, curb, gutter, sidewalk, drain inlets, and other concrete and asphalt demolition, to minimize injury to tree root systems. The following procedures should be used when removing existing concrete.

- 1. Breaking of the existing concrete and asphalt for removal should be done in a manner that will minimize ground disturbance and vibration.
2. Curbs and sidewalks within designated tree protection areas and critical root zones shall be removed by hand. When removing existing sidewalks and curbs, care should be taken to avoid injury to roots located under, over, or adjacent to paved surfaces.
3. Roots and root-trunk flares growing over curbs should not be injured during breaking of curbs and removal of debris. Wood and bark tissues shall not be injured by striking tissues with equipment.
4. During the removal of concrete, all root systems and soil areas exposed shall not be disturbed.
5. Motorized equipment and trailers, including tractors, Bobcats, bulldozers, trackhoes, trucks, cars, and carts are to be limited to access on the existing paved street only. Access is not allowed behind the curb within tree protection areas.
6. Should access be necessary within designated tree protection areas, the existing grade shall be covered with double, overlapping sheets of ¾ inch thick plywood, or six (6) to eight (8) inches of wood mulch to help distribute the weight of equipment and to minimize soil compaction and rutting. Plywood and/or mulch is not acceptable bridging material for driving over exposed tree roots. Exposed tree roots shall not be driven over. The Owner's Representative or Project Consulting Arborist shall be notified and shall approve of the access and driving surface prior to its use.

3.5 CONSTRUCTION OF SIDEWALKS, CURBS, CONCRETE, ASPHALT PAVING AND DRAINAGE INLETS

A. The following procedures shall be used when constructing sidewalks, curbs, concrete, asphalt paving, and drainage inlets.

- 1. Keep all materials and equipment within the street bounded by existing curbs.
2. Protect exposed roots from contamination by stabilization materials and concrete.
3. Locate concrete washout areas away from roots and tree protection areas.
4. When excavating for the construction of inlets, excavated soil shall be deposited in trucks and hauled off or deposited temporarily on ¾ inch thick plywood outside the critical root zone. Excavated and fill soil shall not be deposited, even temporarily, on unprotected natural grade.
5. After proper pruning, as needed, cover exposed roots within thirty (30) minutes to minimize desiccation. Roots may be covered with soil, mulch, or moistened burlap (7 ounce or equivalent), and shall be kept moist during the period until the final grade is established.
6. Place a sheet of six (6) mil or thicker plastic over the grade within affected portions of tree protection areas prior to pouring concrete sidewalks, curbs, inlets, ramps, and driveway approaches. The plastic will assist in providing a non-leaching barrier between the concrete, soil and roots.
7. Existing soil may be used as a form for back of curb and gutter, with or without the use of a thin masonite-type form, although a masonite form is preferred. This will minimize excavation in the critical root zone and prevent undue injury to the roots. This method is unnecessary in areas outside the critical root zone. Place a layer of Typar BioBarrier between the curb and tree roots to help inhibit root growth that may exploit small cracks in the curb. Where appropriate, use curbs with discontinuous footings to maintain natural grade near the base of trees adjacent to the curbing, and to minimize injury to roots and root flares.
8. In areas where roots have to be removed for construction of drain inlets, roots shall be severed prior to excavation to eliminate unnecessary tearing of roots by equipment.
a. Excavate soil by hand at the construction cut limit to a depth of thirty (30) inches or to the depth of the required root cut, whichever is less.
b. Prune roots as specified in Part 3, 3.1, D of this section.
c. Protect exposed roots as specified in Part 3, 3.1, B.5 of this section.
9. Concrete or chemicals spilled within tree protection areas should be completely removed. Contamination soil shall be completely removed at the time of the spill and removed by hand without disturbance to root systems. Appropriate soil should be added as necessary to restore the grade.

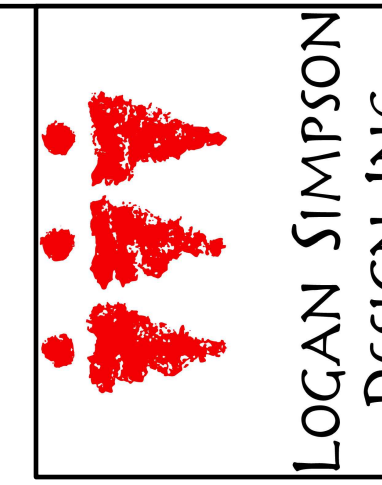
3.6 IRRIGATION OR UTILITY INSTALLATION

A. Protection of Trees and High Value Shrubs:

1. Contractor shall protect all trees and high-value shrubs from injury due to irrigation related work. All injuries to trees and high-value shrubs shall be mitigated to the satisfaction of the Owner, and, if appropriate in accordance with guidelines established in the "Guide for Plant Appraisal". All costs of such mitigating shall be charged to and paid by the Contractor.

B. Existing Trees

- 1. The Owner's Representative or Project Consulting Arborist shall be notified prior to any trenching or excavation known or suspected to involve cutting of more than:
a. two roots, three inches or more in diameter; and/or
b. four roots between two (2) and three (3) inches in diameter. The Owner's Representative or Project Consulting Arborist shall be notified immediately in the event that roots in excess of that described above are cut, torn, ripped, or otherwise injured.
2. All trenching or other work under the dripline of any tree shall be done by hand or by other methods which will prevent breakage or other injury to branches and roots.
3. Where it is necessary to excavate within the critical root zone of existing trees, contractor shall use all possible care to avoid injury to trees and tree roots. Excavation, in areas where two (2) inch diameter and larger roots occur, shall be done by hand with approved hand tools. Where possible, tree roots two (2) inches or larger in diameter shall be tunneled or bored under and shall be covered with moistened burlap to prevent excessive drying.
4. Wherever a trenching machine exposes roots smaller than two (2) inches in diameter, such roots extending through the trench wall shall be hand pruned (see Part 3, 3.1, D of this section. All trenches within critical root zones shall be closed within twelve (12) hours-if this is not possible, the trench walls shall be covered with burlap and kept moistened. Prior to backfilling, Contractor shall contact the Owner's Representative or Project Consulting Arborist to inspect the condition and treatment of roots larger than two (2) inches in diameter injured by trenching.
5. Horizontal directional boring (auger tunneling), rather than open trenching, should be used for irrigation line or other utility installation within one half (½) foot linear distance from the trunk base for every inch of trunk diameter, if root disruption or utility installation occurs on no more than one side of the tree. If trenching or utility installation will occur on two or more sides of a tree trunk (e.g. N,SE, or W), then horizontal directional boring should be used if line installation is within one (1) foot linear distance from the trunk base for every inch of trunk diameter.



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PROJECT SPECIAL PROVISIONS
DOWNTOWN STREETScape IMPROVEMENTS
FRUITA, CO
2015
drawn by: SE
checked by: AK
approved by: WP
QA/QC by:
project no.: 14-1169
drawing no.:
date: 04-15-15

SHEET PS2

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3.7 ROOT PRUNING

A. Tree roots shall not be pruned or cut unless their removal is unavoidable or absolutely necessary. The Owner's Representative or Project Consulting Arborist shall be notified prior to any operation known or suspected to involve cutting of more than:

- Two roots, three (3) inches or more in diameter; and/or
- four (4) roots between two (2) and three (3) inches in diameter. The Owner's Representative or Project Consulting Arborist shall be notified immediately in the event that roots in excess of that described above are cut, torn, ripped, or otherwise injured.

B. Upon approval by the Owner's Representative, prior to any excavation, removal of sidewalk, or other activity that will result in removal of soil and tree roots, all tree roots within a designated area will be pruned to a depth of fourteen (14) inches. Pruning shall occur with a Dosko Root Pruner, or equivalent, in accessible areas, and by hand in areas inaccessible to the root pruning machine. All other root pruning shall be done by hand with approved tools.

C. Removal of roots greater than one (1) inch diameter or parts of roots that are injured or diseased should be performed as follows:

- Preserve the root bark ridge (similar in structure and function to a branch bark ridge). Directional root pruning is the recommendation technique and should be used during hand excavation around tree roots. Roots are similar to branches in their response to pruning practices. With directional root pruning, objectionable and severely injured roots are properly cut to a lateral root, if possible, that is growing downward or in a favorable direction.
- All roots needing to be pruned or removed shall be cut cleanly with sharp hand tools, with oversight by the Owner's Representative or Project Consulting Arborist. No wound dressings shall be used.
- Recommended root pruning tools:
  - Scissor-type lopper.
  - Scissor-type pruner.
  - Large and small hand saws.
  - Wound scriber.
  - Trowel or small shovel.
  - Garden Fork.
  - Hand broom.

D. Root Pruning Near Sidewalks:

- Root pruning should be done carefully, by hand, to achieve the objective of reducing future sidewalk problems as well as preserving the trees. Removing anchoring roots or causing injuries in anchoring roots and root flares can cause future decay and windthrow hazards. Indiscriminate cutting of vigorous roots results in their resprouting so that several more new roots may grow from the cut end, back under the sidewalk, thereby reducing the time between sidewalk repairs. Roots can be managed in the ground without significant harm to trees, if care is taken to avoid injuries that lead to root and trunk decay.
- Directional root pruning is recommended because it considers the tree's response to root pruning and decay. With directional root pruning, roots are cut to a large lateral, if possible, that is growing downward or in a more favorable direction. The pruned root ends will be less likely to resprout, since a large lateral can assume the new terminal role of the root.
- Proper removal of selected roots or parts of roots can direct roots away from sidewalks in the future. Procedures for root pruning directly next to sidewalks are as follows:
  - Hand dig a trench six (6) to eight (8) inches in depth at the edge of the planting strip and sidewalk.
  - Remove all roots less than two (2) inches diameter in this trench back to a desirable lateral root, preserving the root bark ridge. If careful excavation does not reveal a desirable lateral root within twelve (12) inches of the exposed root in question, then the exposed root shall be pruned properly so that a minimal amount of root is removed.
  - Small root bundles, the source of future sidewalk problems, should also be removed at this time.

E. All roots between two (2) and four (4) inches in diameter should be examined by the Owner's Representative or Project Consulting Arborist in terms of their role in anchoring the tree.

- All roots that contribute significantly to anchorage should be preserved. Remove all other roots in this size range to sound, downward growing lateral roots that are at least one half (1/2) the size of the root being removed.
- All roots larger than four (4) inches in diameter are to be preserved unless their removal is absolutely necessary. Preservation of large roots may require:
  - reducing the sidewalk width near the root flare; and/or
  - ramping or bridging the sidewalk over the roots to allow for root growth.

F. Tree guying subsequent to root pruning: Upon review of on-site root pruning and constructing grading limits, the Owner's Representative or Project Consulting Arborist shall determine if existing trees subject to root pruning should be guyed or otherwise stabilized. Contractor shall retain a qualified tree service company to complete tree guying and stabilization in accordance with National Arborist Association standards as referenced in Section 5.00. Tree service company shall be certified by the International Society of Consulting Arborists, ISCA.

3.8 TREE PROTECTION FENCING

A. Tree protection fencing should be installed as designated on construction documents and at all locations within or adjacent to the project limits where existing trees and landscape material shall remain. Tree protection areas are designated on construction documents, and fencing locations should be staked for approval by the Owner's Representative or Project Consulting Arborist.

B. Installation of post shall not result in injury to surface roots or root flares of trees.

C. Fencing should be installed to completely surround the limits of tree protection areas.

D. Tree protection fencing shall be installed prior to any site activity and shall remain until its removal is authorized by the Owner's Representative or Project Consulting Arborist.

3.9 INJURIES TO EXISTING PLANTS - DAMAGE PENALTIES

A. Tree and High Value Shrub Appraisal:

- All trees and high-value shrubs will be evaluated and appraised by the Owner's Representative or Project Consulting Arborist, and a list of all tree values for the project will be on file in the Construction Manager's office. Any tree or other plant requiring retention or protection that is not on the list shall be appraised by the Owner's Representative or Project Consulting Arborist as necessary to comply with this damage penalty.
- Documentation for appraisals will consist of:
  - measurement of plant size;
  - identification by common and botanical names;
  - current condition (overall health, injuries, overt hazard status, etc.) and
  - location factors as described in the "Guide for Plant Appraisal". Photographs may be taken of certain trees and shrubs to document debilitating condition factors.
- The threshold level for plants to be appraised shall be \$100.00; only those trees and shrubs estimated to have a monetary value greater than \$100.00 shall be appraised.
- Trees and other plants designated as requiring retention or protection shall be identified and located on construction plans. Loss of, or partial injury to, any of these plants due to Contractor neglect or improper construction activities will result in liquidated damages for the assessed value of the tree as determined by the Owner's Representative or Project Consulting Arborist.
- Trees determined as requiring "general protection" or "special protection" in the construction areas and in other key locations should be clearly identified by the Owner's Representative or Project Consulting Arborist. Loss or partial injury to any of these trees due to Contractor neglect or improper construction activities will result in liquidated damages for the assessed value of the trees as determined by the Owner's Representative or Project Consulting Arborist. Injury to a portion of these trees will be assessed by the Owner's Representative or Project Consulting Arborist and a corresponding portion of the liquidated damages will be assessed to the Contractor.
- A fine of one-thousand dollars (\$1,000.00) will be levied against the Contractor for each incident of construction damage (including construction traffic) within designated tree protection areas. Any fine shall be independent of any applicable liquidated damages for the assessed value of the tree or tree part.
- Trees or roots visibly and unnecessarily injured will cause the Owner to withhold from the Contractor an assessed amount conforming to the requirements stipulated above, for a period of one full year. After that period the impact of the injury to any tree will be assessed by the Owner's Representative or the Project Consulting Arborist.
- If any trees or shrubs designated to be retained or protected are injured and replacement is justified, a number and equivalent diameter inches of trees or shrubs of same or similar species shall be furnished and planted by the Contractor. The total inch diameter of the replacement plant(s) shall equal the diameter of the plant(s) to be replaced, in accordance with the "Guide for Plant Appraisal".

END OF SECTION 015639

SECTION 044200 - SITE WALLS STONE VENEER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- Stone veneer on seat walls
- B. Related Sections:
- Section 033000 "Cast-in-place Concrete" for retaining walls.

1.3 SUBMITTALS

A. Product Data: For the following:

- Stone.
- Mortar Products.
- Sealant Products.

B. Shop Drawings: Include shop drawings for attachments, anchors and supports.

C. Samples for Verification:

- Submit representative stone samples to cover 4 square feet.
- Submit mortar color samples.

1.4 REFERENCE STANDARDS

- ASTM C 270 - Standard Specification for Mortar for Unit Masonry; 2008a.
- ASTM C 616 - Standard Specification for Quartz-Based Dimension Stone; 2008.
- IBC - International Building Code; 2009.

1.5 MOCK-UP

A. Mockups:

- Build mockups to demonstrate aesthetic effects and set quality standards for materials and execution. Build mockup of typical wall area as shown on drawings. Build mockups for seat wall in sizes approximately 4 feet long by the height of the wall by full thickness.

B. Locate mock-up as directed by Owner.

C. Approved mock-up may remain as part of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- Protect stone from damage and discoloration. During temporary storage on site, at the end of working day, and during rainy weather, cover stone work exposed to weather with non-staining waterproof coverings, securely anchored.

PART 2 - PRODUCTS

2.1 STONE VENEER AND CAP

- Veneer and cap stone; Red Sandstone to match existing walls.

2.2 MORTAR

- Mortar: ASTM C270, Type N, Proportion specification, using Portland cement of white color.
- Mortar Color Additive; Mineral oxide pigment; color to match mortar on existing walls.

2.3 ANCHORS AND ACCESSORIES

- Anchors and other components in contact with stone: Stainless steel; ASTM A 666, Type 304.
- Backer Rod and Sealant per Section 079200; color to match stone per Owner.
- Cleaning Solution: Type that will not harm stone, joint materials or adjacent surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- Verify that support work and site conditions are ready to receive work.
- Verify that items built-in under other sections are properly located and sized.

3.2 PREPARATION

- Clean stone prior to erection. Do not use wire brushes or implements that will mark or damage exposed surfaces.

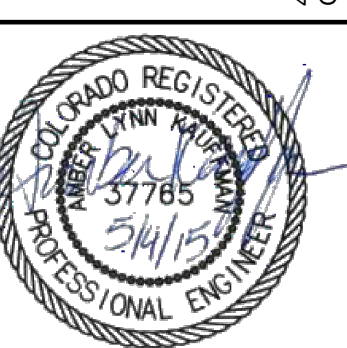
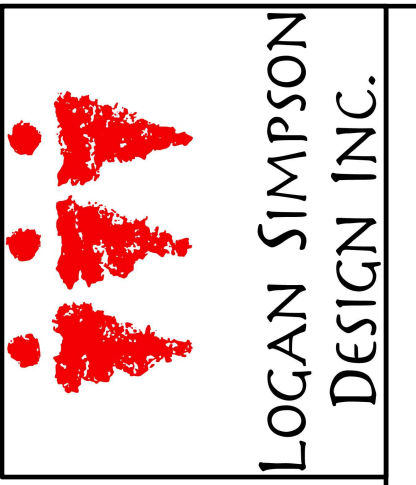
3.3 VENEER AND CAP INSTALLATION

- Erect veneer stone in accordance with stone supplier's instructions and erection drawings.
- Thoroughly mix mortar ingredients in quantities needed for immediate use. Use within 2 hours of mixing.
- Add mortar color according to manufacturer's instructions. Ensure uniformity of mix and coloration. Do not add more than 3 percent by weight of carbon black to cement.
- Do not use anti-freeze compounds in mortar.
- Remove and replace stones that are loose, chipped, broken, stained, or otherwise damaged.

3.4 CLEANING

- Remove visible mortar and excess sealant upon completion of work.
- Clean soiled surfaces with cleaning solution.

END OF SECTION 044200



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REV. NO.	DATE	DESCRIPTION

PROJECT SPECIAL PROVISIONS  
DOWNTOWN STREETScape IMPROVEMENTS  
FRUITA, CO  
2015

drawn by: SE  
checked by: AK  
approved by: WP  
QA/QC by: \_\_\_\_\_  
project no.: 14-1169  
drawing no.: \_\_\_\_\_  
date: 04-15-15



SECTION 329300 – PLANTING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Plants.
2. Tree stabilization.

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.
D. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
E. Finish Grade: Elevation of finished surface of planting soil.
F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
H. Planting Area: Areas to be planted.
I. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for drawing designations for planting soils.
J. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corns, tubers, or herbaceous vegetation.
K. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
L. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
M. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at site.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: 5 years' experience in landscape installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:
a. Landscape Industry Certified Technician – Exterior.
b. Landscape Industry Certified Horticultural Technician.
5. Pesticide Applicator: State licensed, commercial.
B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
3. Plant measurements specified in the plant list are minimum acceptable sizes.
D. Plant Material Observation: Owner may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Owner may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
E. Quality of Materials: All nursery stock for use on City of Loveland projects should meet the requirements of the Colorado Nursery Act, or the American Association of Nurseryman's Standards for Nursery Stock, whichever is more stringent. All plant stock shall be individually tagged as to the name and size in accordance with standard practice. A City Horticulturist representative shall approve all stock before it is installed, and, in addition to meeting the requirements of the guidelines mentioned above, shall also satisfy the discretion of the City's Representative. The inspector shall be afforded a minimum of 48 hours' notice to inspect plant material. Any plant material planted without an inspection is subject to immediate removal/replacement at the discretion of the inspector and at the expense of the Contractor. The City or City's Representative shall have the right to conduct inspections at any time during the project.
1. Plant material held for 6 hours or more before planting shall be protected by mulch over the root balls, with water provided to keep the root balls moist.
2. Grounds for rejection of plant material may include, but are not restricted to, the following conditions:
a. Obvious disease infection or insect infestation;
b. Broken, cracked root balls;
c. Dry or instable root balls;
d. Material with evidence of girdling or circling roots;
e. Lack of roots in the upper 6 inches of the root ball, or, soil mounded over 6 inches of the trunk;
f. Damage to the plant material including scarring, past canker damage, girdling or indentation in bark caused by twine used to secure the basket, past borer damage, graft incompatibility;
g. Wilting of the leaves beyond recovery;
h. Poor structure, not correctible by pruning within 2 years;
i. Branches at narrow angles to the main stem, or included bark in the branch-trunk connections;
j. Unspecified i.e., incorrect, species or cultivar.
3. Unspecified i.e., incorrect, species or cultivar.
F. Maintenance Instructions: At completion of work, Contractor shall submit three (2) copies of written instructions to the Project Manager for maintenance and care of landscaping to be performed by the City during the Contractor's warranty period. Include directions for irrigation, fertilizing, and spraying as required for continued and proper maintenance through a full growing season and dormant period. Maintenance will be the responsibility of the Contractor until the time of final acceptance.

1.6 SUBMITTALS

- A. Product Data: For each type of product.
1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Tree staking devices
B. Certification of Inspection: Submit copies of invoices for materials with State, Federal, or other inspection certificates and showing source of origin.
C. Planting Schedule: Planting shall occur when weather & soil conditions are favorable or as authorized by the City or City's Representative.
1. The Contractor shall supply the Project Manager with a planting schedule establishing dates for commencement and completion of each type of work. Correlate work to provide maintenance until acceptance by the City. Do not depart from the accepted schedule except with written authorization from the Project Manager. When delays in the planting schedule are unavoidable, include documentation of reason for delay. Maintenance periods will be adjusted to compensate for extension of time or work outside of time limitations.
D. Material Samples: In-organic and Organic material and imported topsoil, including a required analysis, shall be submitted ten (10) days before delivery to the site. The analysis must come directly from the intended source, and be current. Final approval of the material is contingent on on-site inspection by the Project Manager.
E. Warranty: After Notice of Substantial Completion, furnish written warranty as follows: Warranty plant material for a period of two (2) growing years following the date of Substantial Completion.
F. Maintenance Instructions: At completion of work, Contractor shall submit three (2) copies of written instructions to the Project Manager for maintenance and care of landscaping to be performed by the City during the Contractor's warranty period. Include directions for irrigation, fertilizing, and spraying as required for continued and proper maintenance through a full growing season and dormant period. Maintenance will be the responsibility of the Contractor until the time of final acceptance.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
C. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.
D. Sample Warranty: For special warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery Schedule: Notify the Project Manager of delivery schedule not less than twenty-four (24) working hours in advance of delivery of each type of material.
B. Package Materials: Deliver fertilizer to the site in unopened, original containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer that becomes caked or otherwise damaged, making it unsuitable for use, will not be accepted.
C. Plant Materials: Containerize plant materials with limbs bound and properly wrapped and prepare them for shipping in accordance with recognized standard practice. Keep root systems moist and protected from adverse conditions due to climate and transportation between the time they are dug and actual planting.
1. Identify each plant with grower's label affixed to the plant. Use durable waterproof labels with water-resistant ink that will remain legible for at least sixty (60) days.
2. Plants to be transported to the project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the vehicle to prevent injury to the plants. Closed vehicles shall be adequately ventilated to prevent overheating of the plants. Do not remove plants from refrigerated trucks into hot weather without allowing time for plants to adjust to heat.
3. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
4. Plants shall be kept moist, fresh and protected at all times. Root balls/containers must be covered completely with mulch and watered daily. Such protection shall encompass the entire period during which the plants are in transit, being handled, or are in temporary storage.
5. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
a. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
b. Do not remove container-grown stock from containers before time of planting.
c. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

D. Handling: Do not drop plants. Do not lift plants by the trunk, stems, or foliage. Handle plants by the ball or the container. Reject balled plants if the ball is broken or the trunk is loose in the ball. Protect plants at all times from drying out or injury. Minor broken and damaged roots shall be pruned before planting. Major damage shall be cause for rejection as determined by the Project Manager.

E. Bulk Materials:

- 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.
F. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

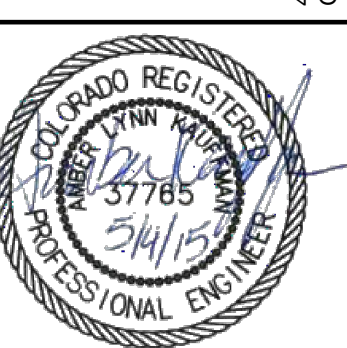
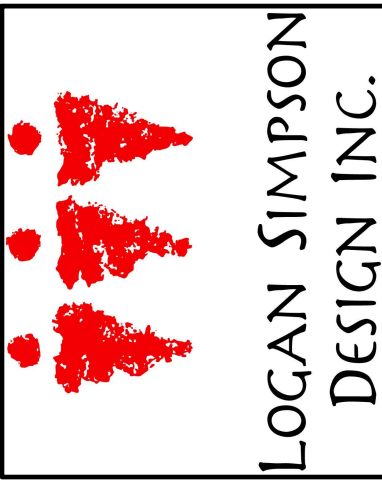
G. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

1.9 FIELD CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
C. Planting of trees and shrubs shall be a separate operation from irrigation installation, and shall occur subsequent to these segments of the project.
D. Verify imported topsoil is installed to specified grades and depths.
E. All clods, debris, rocks and other items 1-inch or more in diameter shall be removed from the jobsite.
F. All soil contaminated by spilled petrochemicals or other materials, or concrete truck washing shall be removed from the jobsite per applicable Federal, State and local laws and regulations.
G. Vehicles shall not be driven or parked on those areas to receive trees and shrubs; if, trucks are needed to deliver plant material to a location close to the planting site, such activity will take place when soil moisture is low enough that compaction/rutting will not occur.
H. It is the responsibility of the Contractor to assure that all utilities, including those that are the property of the City, are located and marked and those markings shall be kept highly visible.
I. Any damage to underground piping or wiring arising out of work of this section must be corrected and repaired by the Contractor to the satisfaction of the Project Manager.
J. Damage to Other Improvements: All costs for repair or replacement of any damage to other work done on-site or adjacent properties by installation of plant material shall be borne by the Contractor installing plant material.

1.10 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
1. Failures include, but are not limited to, the following:
a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree stabilization.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
2. Warranty Periods: From date of Substantial Completion
a. Trees, Shrubs, Vines, and Ornamental Grasses: 24 months.
b. Ground Covers, Biennials, Perennials, and Other Plants: 24 months.
3. Include the following remedial actions as a minimum:
a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
d. Provide extended warranty for period equal to original warranty period, for replaced plant material.



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Table with 3 columns: REV. NO., DATE, REVISIONS DESCRIPTION. Contains 10 rows for revisions.

PROJECT SPECIAL PROVISIONS
DOWNTOWN STREETScape IMPROVEMENTS
FRUITA, CO
2015

drawn by: SF
checked by: AK
approved by: WP
QA/QC by:
project no.: 14-1169
drawing no.:
date: 04-15-15

DWC: F:\Projects\014-1169\_PBIN\Final\_Plans\PROJECT\_SPEC\_PROVISIONS\141169\_PROJ\_SPECIAL\_PROV.dwg
DATE: May 05, 2015 1:53pm
USER: sfaney
XREFS: 141169\_TITLE\_BLOCK



PART 2 – PRODUCTS

2.1 WATER

A. Water shall be supplied and paid for by the City. Distribution of the water from the City's source for all portions of this section, including maintenance, shall be the responsibility of the Contractor. Failures in the irrigation system shall not relieve the Contractor from applying the water necessary to irrigate the plantings.

2.2 COMPOST

A. Compost soil amendment for soil preparation shall be dry, well-rotted organic material Class I or Class II. Acceptable organics are: A-1 Bio comp. One known source is A-1 Organics at 800-776-1644. The organic material shall have an acidity in the range of pH 6.0 to 8.2, shall not exceed 5 mmhos/cm salt content, and shall have a 30% or greater organic content. The mixture shall be free from clay subsoil, stones, lumps, plants and their roots, sticks, weed stolons and seeds, high salt content and other materials harmful to plant life. Verification of source and test results from an approved soils testing laboratory is required prior to delivery.

2.3 PLANTING PIT BACKFILL

- A. Backfill shall be free of clods exceeding 1-inch, foreign materials, and debris.
B. Backfill shall be native to the site, unamended and unfertilized in native plant pits.
C. Backfill shall be native to the site, and amended as specified for planting pits in irrigated areas.

2.4 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.

2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Owner, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.

E. Trees: The Contractor shall furnish and install plant materials. They will be shipped to the site directly. Contractor must coordinate pickup and delivery to the job site. Contractor is to install all plants shown on the Drawings as specified and in quantities listed on the "Plant Schedule". If any discrepancies arise between the plant schedule and the Drawings, the Drawings shall take precedence.

- 1. All plants shall be in accordance with the American Standard for Nursery Stock, latest edition. Plant material shall be healthy, live, normally shaped and freshly dug.
2. Plants shall conform to nomenclature of "Standard Plant Names" as adopted by the Joint Committee of Horticulture Nomenclature, latest edition. Plant tags stating the correct plant name and size shall be securely attached to all plant materials until completion of the final inspection.
3. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project. All plants shall be typical of their species or variety. They shall have normal, well-developed branch and root systems, free from defects, disfiguring knots, abrasions of the bark, plant diseases, and all forms of insect infestations. Plants shall show good annual growth. Buds shall be plump and well fitted for the species. Evergreen foliage shall be of good intense color. Plants with damage shall be rejected.
4. Size: Dimensions of all plants conform to the Colorado Nursery Act, February 1, 1971, as amended, April 8, 1979, latest edition. The height and caliper of trees, and the height and spread of shrubs, as specified on the plant list, are the minimum dimensions required. All plant material shall conform to the measurements as specified in the plant list with the following exceptions:
a. All plants shall equal or exceed the measurements specified in the plant list, which are minimum acceptable sizes. Plants larger than specified in the plant list may be used if approved by the Project Manager but use of such plants shall not increase the contract price.
b. Minimum ball size for trees: (These sizes are typical, check with American Standard Nursery Stock for exact specifications or each species).

Table with 3 columns: TREE SIZE, BALL DEPTH MINIMUM, BALL DIAMETER MINIMUM. Rows include 1-1/2" caliper, 2" caliper, 2-1/2" caliper, 3" caliper.

F. Balled & Bur lapped Requirements: Balled & bur lapped plant material shall be dug with firm natural balls or earth of sufficient diameter and depth to include most of the fibrous roots. Tree ball shapes shall be truncated cones. Balled & bur lapped plants may be rejected for failure to meet good digging practices. No balled plant shall be placed if the ball is cracked or broken either before or during the planting process. Any plant that is loose in the ball shall be removed from the site & replaced.

- 1. Container Grown Stock Requirements: Container grown stock shall have a root system sufficiently developed to hold the container soil together firm & whole. No plants shall be loose in the containers. No plant shall be container\_bound.
2. Use rigid containers that will hold ball shape and protect root mass during shipping of not less than the minimum sizes recommended by ANSI Z60.1.
3. Where formal arrangements or consecutive order of trees are shown, select stock for uniform height and spread, and label with number to assure symmetry in planting.

G. Name and Variety: Provide the trees and shrubs true to name and variety established by the American Joint Committee on Horticultural Nomenclature "Standardized Plant Names", Second Edition, 1942.

- 1. Substitutions will be permitted only upon evidence that a plant is not obtainable and upon authorization from the Project Manager and Landscape Architect. The nearest obtainable size and variety of plant material having the same essential characteristics shall be used as a substitute. No adjustments of contract price shall be made by the Contractor.

H. Deciduous Trees: Where shade trees are required, provide single stem trees with straight trunk and intact leader, free of branches on the bottom third of the tree.

2.5 WRAPPING

A. Tree wrappings shall be first quality four-inch (4") wide rolls of bituminous impregnated tape, corrugated or crepe paper, manufactured specifically for tree wrapping, having qualities to resist insect infestation. Tape for wrapping must be elastic in nature and be installed on the top and bottom of the wrapping.

2.6 TAGS

A. All identification tags to be removed by contractor.

2.7 STAKES AND GUYS

A. Guying materials shall be new, first class sturdy materials and in accordance with the following list:

- 1. Stakes: For deciduous and evergreen trees, stakes shall be six feet (6') long, wood, subject to approval, three (3) per tree. All stakes to have safety caps.
2. Wires: Nine (9) gauge galvanized wire.
3. Tree Strap: Nylon tree strap (submit to Project Manager for approval).
4. Flags: Orange plastic ribbon, one inch (1") by eighteen inches (18") long.

2.8 FERTILIZERS

A. Product: Osmocote or equal.

2.9 WOOD MULCH

A. Wood Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs.

- 1. Type: Owner-supplied.

2.10 PESTICIDES

A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

2.11 TREE-STABILIZATION MATERIALS

A. Trunk-Stabilization Materials:

- 1. Guy Cables: Five-strand, 3/16-inch diameter, galvanized-steel cable, with zinc-coated compression springs, a minimum of 3 inches long, with two 3/8-inch galvanized eyebolts.
2. Stakes: For deciduous trees in planting areas, stakes shall be six feet (6') long, wood, subject to approval, three (3) per tree.
3. Wires: Nine (9) gauge galvanized wire.
4. Tree Strap: Nylon tree strap (submit to Project Manager for approval).
5. Plastic Wire Protection: white 1/2 inch pvc pipe cut to the length of the wire.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants, with installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Examine subgrade and verify the elevations.
3. Notify the Project Manager of unsatisfactory conditions.
4. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
5. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
6. Uniformly moisten excessively dry soil that is not workable or which is dusty.
B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Owner and replace with new planting soil.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
B. Before planting, obtain Owner's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
C. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
D. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
E. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Owner's acceptance of layout before excavating or planting. Make minor adjustments as required.
F. Locate native restoration plugs areas with Owner.

3.3 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately 2.5 times as wide as ball diameter for balled and burlapped and container-grown] stock.
3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
5. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
6. Maintain supervision of excavations during working hours.
7. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
B. Backfill Soil: Subsoil and topsoil removed from excavations may not be used as backfill soil unless otherwise indicated.
1. Use imported topsoil soil with compost at a ratio of 1 part compost per 4 parts soil.
2. Slow release fertilizer per manufacturer's recommendations.
C. Obstructions:
1. Where rubble is encountered, notify the Project Manager and prepare planting pits properly by removal of rubble or other acceptable methods. When conditions encountered are severe and extensive (as determined by the Project Manager) proceed with additional work at the direction of the Project Manager.
2. If rock which is not ripple, underground construction work, or other obstructions is encountered in excavation for planting of trees, notify the Project Manager and revise locations as directed.
D. Drainage: Notify Owner if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.4 TREE AND SHRUB PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare 2 inches above adjacent finish grades.
1. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole. Follow manufacturers' recommendations.
4. Before completely backfilling, the tree shall be viewed from two (2) angles, perpendicular to each other, to check for plumb positioning.
5. Continue backfilling process. Water again after placing and tamping final layer of soil.
D. Container-Grown Shrubs and Trees: Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
1. Carefully remove root ball from container without damaging root ball or plant.
2. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
3. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole. Follow manufacturers' recommendations.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.
E. Watering shall take place within 8-hours of planting.
F. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.
G. A berm constructed of soil, eight inches high shall be constructed around the planting hole; the toe of the slope of such berm shall meet the outside of the planting hole.
H. The saucer created by the above-mentioned berm shall be filled with four (4) inches of bark mulch; the mulch shall be pulled from the trunk of the tree or shrub, leaving a space two (2) inches wide around the trunk.
I. All dead, broken, diseased, crossing, or rubbing branches shall be pruned at planting.
J. Plant tags to be removed by Contractor.
K. Mulch landscape beds with wood fiber mulch or rock cobble where indicated on the plans. Apply mulch to a 4-inch depth for all beds.

3.5 TREE AND SHRUB PRUNING

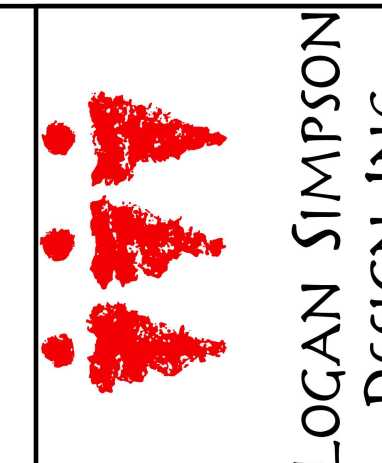
- A. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Owner, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character. All pruning shall be done with clean, sharp, sterile tools.
B. Do not apply pruning paint to wounds.

3.6 TREE STABILIZATION

- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
1. Upright Staking and Tying: Stake all trees in planting beds. Penetrate at least 18 inches and to extend at least 60 inches above grade. Use a minimum of 3 stakes for all trees. Space stakes equally around trees. Set vertical stakes and space to avoid penetrating root balls or root masses.
2. Support trees with two strands of tie wire for each stake, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
3. Staking-and-Guying Method: Install no fewer than three guys spaced equally around evergreen trees.
a. Securely attach guys. Provide turnbuckle for each guy wire and tighten securely.
b. Support trees with guy cable, connected to the brass grommets of tree-tie webbing at contact points with tree trunk and reaching to turnbuckle. Allow enough slack to avoid rigid restraint of tree.
4. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

3.7 TREE WRAPPING

A. All deciduous trees shall be wrapped as specified and shown on the Drawings. No wrapping shall be permitted until the trees have been inspected by the Project Manager. The trunks of all deciduous trees shall be wrapped spirally from the bottom to top with materials as specified. The wrapping shall overlap and entirely cover the trunk from the ground to a height of the second branch and shall be neat and snug, and secured with vinyl electrical tape or tape approved by the Project Manager on both top and bottom.



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811 logo with text: Know what's below. Call before you dig. CALL 811 SEVENTY-TWO HOURS PRIOR TO DIGGING, GRADING OR EXCAVATING FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

Table with 3 columns: REV. NO., DATE, REVISIONS DESCRIPTION. Includes a row for 2015 revisions.

Project information: PROJECT SPECIAL PROVISIONS, DOWNTOWN STREETScape IMPROVEMENTS, FRUITA, CO, SHEET PS5. Includes a drawing log with names and dates.

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**3.8 GROUND COVER AND PLANT PLANTING**

A. Set out and space ground cover and plants as indicated on Drawings in even rows with triangular spacing.

B. Use planting soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

**3.9 PLANTING AREA MULCHING**

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Wood Mulch in Planting Areas: Apply of organic mulch over whole surface of areas planted with shrubs and trees per details, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

**3.10 PLANT MAINTENANCE**

A. Until final acceptance by the City of the entire project, the Contractor shall be responsible for the after care of the plant material, unless other written arrangements are made.

B. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization and protection devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

C. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

D. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

E. Watering should be conducted so that leaves do not lose turgidity. The amount of water applied during the growing season shall equal the evapotranspiration rate plus 20% if turf irrigation has not commenced. Watering operations shall decrease beginning 01 September to allow the plant to gradually enter dormancy. Watering operations shall continue twice monthly from when the tree begins to drop its leaves until December 01; from then, if there is no snow cover, tree shall receive supplemental watering once monthly. Air temperatures shall exceed 45 degrees F during supplemental watering operations. Such operations should be completed early enough in the daylight that water will soak into the surrounding soil without freezing around the trunk of the tree. Contractor shall maintain the mulch to a depth of 4-inches inside the berm, as well as water-holding integrity of the structure of the berms.

F. Contractor shall maintain mulch to specified depths.

G. Contractor shall protect the bark to thin-barked trees with crepe tree wrap; wrapping shall be completed no later than November 15; such wrap shall be removed no later than April 1 of the following spring.

H. Contractor shall warrant the survival and health of plant material for one (1) year from date of acceptance. Should the City notify the Contractor that a tree is dead, diseased or failing, such tree will be replaced within two (2) weeks of such notification, or whenever weather permits, with the same type tree. If during winter the dead tree shall be removed and the replacement tree shall be planted no later than April 15 of the following spring. Warranty for that tree will begin on the date of its planting, extending for twelve (12) months. Replacements shall be planted with the same specifications as the rest of the project.

**3.11 PESTICIDE APPLICATION**

A. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

**3.12 REPAIR AND REPLACEMENT**

A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Owner.

1. Submit details of proposed pruning and repairs.

2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.

3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Owner.

B. Remove and replace trees that are more than 20 percent dead or in an unhealthy condition before Substantial Completion or are damaged during construction operations that Owner determines are incapable of restoring to normal growth pattern.

**3.13 CLEANING AND PROTECTION**

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

**3.14 MAINTENANCE SERVICE**

A. Maintenance Service for Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until final acceptance.

**3.15 INSPECTION AND ACCEPTANCE**

A. General: When the Contractor is prepared for one of the required inspections, Contractor shall give the Project Manager or Inspector twenty\_four (24) hours' notice to visit the site and perform the inspection. This does not preclude the right of the Project Manager or Inspector to make informal inspections at any time during the work of this section. The required inspections for which the Contractor must notify the Project Manager or Inspector are as follows:

1. Materials Inspection: The Project Manager or Inspector shall inspect all mulch, compost and fertilizer immediately upon delivery to the site. Any unsatisfactory materials shall be removed and replaced with materials conforming to these Specifications.

2. Final Grading Inspection: The Project Manager or Inspector shall inspect the finish grade for conformance to the Drawings & Specifications immediately following the completion of the work. Any workmanship deemed by the Project Manager or Inspector at this time to be faulty or not in accordance with these Drawings & Specifications shall be corrected at this time.

3. Plant Material Inspection:

a. Quantity and Quality of Plant Materials: The Project Manager or Inspector shall inspect the plant material following delivery to the site but prior to the planting on the site. The Project Manager or Observer reserves the right to reject any plant not meeting the Specifications for size, shape and conditions at that time. Offsite inspections of plant material may occur within reasonable notice and to a nursery within 60 miles of the project. All off site material shall be labeled by the nursery or Contractor for the project and the City may accept or reject the material.

b. Planting Operations: The Project Manager or Observer shall inspect the planting operations, which shall include soil preparation, fine grading, seed/sod installation, fertilizing and rolling.

c. Final Inspection: Following completion of the planting process and cleanup operations, the Contractor shall notify the Project Manager and a final inspection shall be performed. Any plant that is dead or in an unhealthy growing condition during final inspection shall be replaced at the Contractor's expense. This replacement shall not be considered as part of the End of Warranty Period replacement as described in this section. Any workmanship deemed by the Project Manager at this time to be faulty or not in accordance with these Specifications shall be corrected or reworked to conform to these Drawings & Specifications at this time. Once the Contractor receives a Notice of Substantial Completion, the two (2) year warranty shall begin. The Contractor shall replace any defective or dead plant material during this period.

d. End of Warranty Period Inspection: Thirty (30) days prior to the end of the plant material warranty period, the Contractor shall notify the Project Manager and request an end of warranty period inspection. The Project Manager shall inspect the plant materials at this time.

B. Any plant material deemed by the Project Manager to be dead, dying or diseased due to a deficiency of the plant or the planting process shall be replaced prior to the end of the warranty period or as soon as conditions permit by the Contractor at the Contractor's expense.

C. After inspection, the Contractor will be notified in writing by the City of the acceptance of all planting or, if necessary, of any deficiencies which must be corrected prior Notice of Final Acceptance. The City's written Notice of Final Acceptance shall designate the completion of the work of this section.

END OF SECTION 329300

**SECTION 329600 – TRANSPLANTING**

**PART 1 – GENERAL**

**1.1 RELATED DOCUMENTS**

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

A. Section includes transplanting non-nursery-grown trees by tree spade.

B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Section 329300 "Plants" for new trees from nursery-grown sources.

**1.3 DEFINITIONS**

- A. General: See definitions in ANSI A300 (Part 6) and in ANSI Z60.1 pertaining to field-grown trees, except as otherwise defined in this Section.
- B. Caliper: Diameter of a trunk as measured by a diameter tape at a height 6 inches above the root flare for trees up to, and including, 4-inch size at this height; and as measured at a height of 12 inches above the root flare for trees larger than 4-inch size.
- C. Caliper (DBH): Diameter breast height; diameter of a trunk as measured by a diameter tape at a height 54 inches above the ground line for trees with caliper of 8 inches or greater as measured at a height of 12 inches above the root flare].
- D. Root-Ball Depth: Measured from bottom of trunk flare to the bottom of root ball.
- E. Root-Ball Width: Measured horizontally across the root ball with an approximately circular form or the least dimension for non-round root balls, not necessarily centered on the tree trunk, but within tolerance according to ANSI Z60.1.
- F. Root Flare: Also called "trunk flare." The area at the base of the tree's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

**1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at site.
1. Review methods and procedures related to transplanting work include, but are not limited to, the following:
- a. Construction schedule. Verify availability of materials, personnel, equipment, and unimpeded access needed to make progress and avoid delays.
  - b. Tree and plant protection.
  - c. Tree maintenance.
  - d. Arborist's responsibilities.

**1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Samples for Verification: For each of the following:
1. Proprietary Root-Ball-Stabilization Device: One unit.
  2. Slow-Release Watering Device: One unit of each size required.
- C. Pruning Schedule: Written schedule prepared by arborist detailing scope and extent of pruning each tree in preparation for and subsequent to transplanting.
1. Species and size of plant.
  2. Location on site plan. Include unique identifier for each.
  3. Reason for pruning.
  4. Seasonal limitations on pruning.
  5. Preparatory Pruning: Time schedule and description of preparatory pruning to be performed.
    - a. Indicate time in months preceding the extraction of the tree.
    - b. Indicate diameter of root ball and depth of root pruning for each tree.
  6. Description of root and crown pruning during and subsequent to transplanting.
  7. Description of maintenance following pruning.

**1.6 INFORMATIONAL SUBMITTALS**

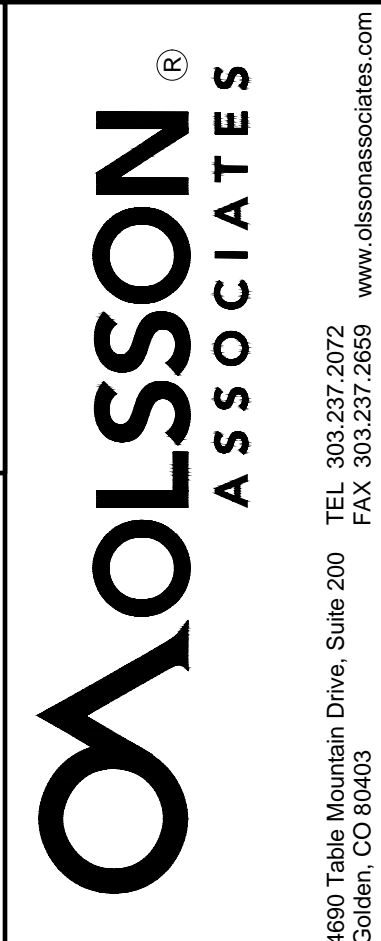
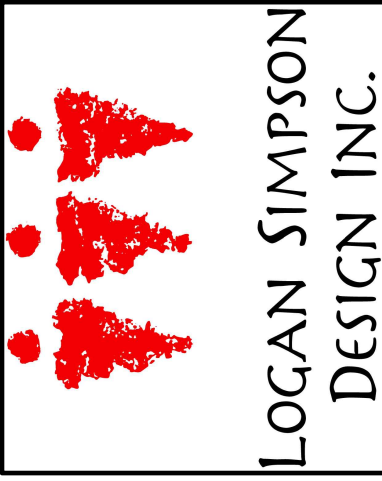
- A. Qualification Data: For qualified tree transplanting firm and arborist.
- B. Certification: From arborist, certifying that transplanted trees have been protected during construction and that trees were promptly and properly treated and repaired when damaged.
- C. Maintenance Recommendations: From arborist, recommended procedures to be established by Owner for care and protection of trees after completing the Work.
1. Submit before completing the Work.
- D. Existing Conditions: Documentation of existing trees indicated to be transplanted, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
1. Use sufficiently detailed color photographs or video recordings. Color shall accurately depict hue condition of foliage and bark.
  2. Include drawings and notations to indicate specific wounds and damage conditions of each tree designated to be transplanted.
- E. Tree-Transplanting Program: Submit before work begins.
- F. Sample Warranties: For special warranties.
- G. Tree-maintenance reports.

**1.7 QUALITY ASSURANCE**

- A. Tree-Service Firm Qualifications: An experienced landscaping contractor or tree-moving firm that has successfully completed transplanting work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.
- B. Tree-Transplanting Program: Prepare a written plan by arborist for transplanting trees for the whole Project, including each phase or process, tree maintenance, and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of the transplanting work.
1. Include transplanting times appropriate for each species at the Project location.
  2. Include a transplanting schedule for each species to be transplanted, coordinated with the Project schedule.
  3. Include site plans clearly marked to show tree-moving routes from extraction to planting locations. Indicate proposed equipment, weight, and turning radii.
  4. Show details of temporary protective barriers where needed.
  5. Include diagrams showing clearances to utility lines and other encumbrances along route.
  6. Include care and maintenance provisions, and eventual removal of tree stabilization.

**1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or trees.
  2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  3. Accompany each delivery with appropriate certificates.
- C. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees in such a manner as to destroy their natural shape.
- D. Completely cover foliage when transporting trees while they are in foliage.
- E. Handle trees by root ball. Do not drop trees.
- F. Trees that will be craned into place shall placed into wire basket for replanting.
- G. Move trees after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after moving, set trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.



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REV. NO.	DATE	REVISIONS DESCRIPTION

**PROJECT SPECIAL PROVISIONS**  
**2015**  
**FRUITA, CO**  
**DOWNTOWN STREETScape IMPROVEMENTS**

drawn by: \_\_\_\_\_ SE  
 checked by: \_\_\_\_\_ AK  
 approved by: \_\_\_\_\_ WP  
 QA/QC by: \_\_\_\_\_  
 project no.: 14-1169  
 drawing no.: \_\_\_\_\_  
 date: 04-15-15

**SHEET PS6**



- 1.9 FIELD CONDITIONS**
- A. Field Measurements: Verify final grade elevations and final locations of trees and construction contiguous with trees by field measurements before proceeding with transplanting work. Perform transplanting only after finish grades are established.
  - B. Weather Limitations: Proceed with transplanting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Do not transplant during excessively wet or frozen conditions. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
  - C. Coordination with Planting Beds: Perform transplanting before planting bedded areas unless otherwise indicated.
    1. When transplanting after planting bedded areas, protect bedding plants, and promptly repair damage caused by transplanting operations.

- 1.10 WARRANTY**
- A. Installer's Special Warranty: Tree-service firm agrees to repair or replace trees and related materials that fail within specified warranty period.
    1. Failures include, but are not limited to, the following:
      - a. Death and unsatisfactory growth is defined as more than 15 percent dead or in an unhealthy condition or failure to meet general performance requirements at end of warranty period.
      - b. Structural failures including trees falling or blowing over.
      - c. Faulty performance of materials and devices related to tree plantings.
    2. Warranty Periods from Date of Substantial Completion:
      - a. Trees: 12 months.
    3. Include the following remedial actions as a minimum:
      - a. Remove dead trees and trees with unsatisfactory growth at end of warranty period; replace when directed.
      - b. Replacements for loss of transplanted trees will be in accordance with the Town of Vail tree mitigation ordinance.
      - c. Replace materials and devices related to tree plantings.
      - d. Provide extended warranty for period equal to original warranty period, for replaced trees.

**PART 2 – PRODUCTS**

- 2.1 TREE–STABILIZATION MATERIALS**
- A. Trunk–Stabilization Materials:
    1. Upright and Guy Stakes: Rough–sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2–by–2–inch nominal by length indicated, pointed at one end.
    2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized–steel wire, two–strand, twisted, 0.106 inch in diameter.
    3. Tree–Tie Webbing: UV–resistant polypropylene or nylon webbing with brass grommets.
    4. Guy Cables: Five–strand, 3/16–inch diameter, galvanized–steel cable, with zinc–coated compression springs, a minimum of 3 inches long, with two 3/8–inch galvanized eyebolts.
    5. PVC Guy Wire Protection. 1/2 inch white pvc pipe the length of the guy wire.

**2.2 MISCELLANEOUS PRODUCTS**

- A. Organic Mulch: as specified in Section 329300 "Plants."
- B. Antidesiccant: Water–insoluble emulsion, permeable moisture retarder, film forming, for trees. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

**PART 3 – EXECUTION**

- 3.1 TREE–TRANSPLANTING SPECIALIST**
- A. Tree–Transplanting Specialist Firms: have tree transplanting performed by a firm that specializes in tree spading and transplanting.
- 3.2 EXAMINATION**
- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion– and sedimentation–control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross transplanting areas.
  - B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to transplanting work and tree protection and health.
  - C. Proceed with transplanting only after unsatisfactory conditions have been corrected.

**3.3 PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, other facilities, turf areas, and other plants and planting areas from damage caused by transplanting operations.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning excavation.
- C. Locate and clearly identify trees for transplanting. Flag blue–vinyl tape around each tree at 54 inches above the ground.
- D. Lay out individual transplant locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Owner's acceptance of layout before transplanting. Make minor adjustments as required.
- E. Apply antidesiccant to trees uniformly, using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during extracting, handling, and transportation.
  1. If deciduous trees are moved in full leaf, spray with antidesiccant before extracting and again two weeks after transplanting.

**3.4 PREPARATORY PRUNING**

- A. Root Pruning: Perform preparatory root pruning under direction of arborist as far in advance of extracting each tree as the Project Schedule allows.
- B. Crown Pruning (Tip Pruning):
  1. Perform preparatory crown pruning as directed by arborist

**3.5 EXCAVATION AND PLANTING EQUIPMENT**

- A. Tree Spade: Track–mounted mechanized tree mover; sized according to manufacturer's size recommendation for each tree being transplanted.

**3.6 EXCAVATING PLANTING PITS**

- A. General: Excavate under supervision of the arborist.
  1. Excavate planting pits or trenches with sides sloping. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil. Scarify sides of planting pit smeared or smoothed during excavation.
  2. Excavate approximately 3 times as wide as root ball.
  3. Keep excavations covered or otherwise protected until replanting trees.
- B. Subsoil and topsoil removed from excavations may not be used as planting soil, but may be used to refill excavations of transplanted trees.
- C. Obstructions: Notify Owner if unexpected rock or obstructions detrimental to trees are encountered in excavations.
- D. Seepage: Notify Owner if subsoil conditions evidence unexpected water seepage into tree–planting pits.
- E. Drainage: Fill planting pit or trench with 6 inches of water and time the infiltration rate of the soil. If the drainage rate is less than 0.25 inch per hour, notify Owner to determine need for subsurface drainage.

**3.7 EXTRACTING TREES**

- A. General: Extract trees under supervision of the arborist.
- B. Orientation Marking: Mark the north side of each tree with non–permanent paint before extracting.
- C. Root–Ball Width: Minimum 10 inches of root–ball diameter, or least dimension for non–round root balls, for each inch of tree caliper being transplanted.
- D. Root–Ball Depth: As determined by the arborist for each species and size of tree and for site conditions at original and planting locations.
- E. Extracting with Tree Spade: Use the same tree spade to extract the tree as will be used to transport and plant the tree.
  1. Do not use tree spade to move trees larger than the manufacturer's maximum size recommendation for the tree spade being used.
  2. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.
  3. Trees that will be craned into place shall placed into wire basket for replanting.

**3.8 PLANTING**

- A. Planting Standard: Perform planting according to ANSI A300 (Part 6) unless otherwise indicated.
- B. Before planting, verify that root flare is visible at top of root ball. If root flare is not visible, remove soil in a level manner from the root ball to where the top–most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- C. Ensure that root flare is visible after planting.
- D. Remove injured roots by cutting cleanly; do not break. Do not paint or apply sealants on cut root ends.
- E. Orientation: Position the tree so that its north side, marked before extracting, is facing north in its new location.
- F. Planting with Tree Spade: Use the same tree spade for planting as was used to extract and transport the tree. Do not use tree spade for trees larger than the manufacturer's maximum size recommendation for the tree spade being used.

**3.9 CROWN PRUNING**

- A. Prune branches as directed by arborist.
- B. Unless otherwise directed by arborist and acceptable to Owner, do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance during Contract period as recommended by arborist.

**3.10 TREE STABILIZATION**

- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows.
  1. Upright Staking and Tying: Stake only as required to prevent wind tip out. Use a minimum of three stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend at least 60 inches above grade. Set stakes vertical and space to avoid penetrating root balls or root masses.
  2. Support trees with two strands of tie wire, connected to the brass grommets of tree–tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
- B. Trunk Stabilization by Guy Wire to Tree Grate: Install trunk stabilization as follows unless otherwise indicated:
  1. Install no fewer than three guys spaced equally around trees.
    - a. Securely attach guys with PVC pipe protection to grate as shown on detail. Provide turnbuckle for each guy wire and tighten securely.
    - b. Connect to the brass grommets of tree–tie webbing at contact points with tree trunk and reaching to turnbuckle. Allow enough slack to avoid rigid restraint of tree.

**3.11 MULCHING**

- A. Organic Mulch: Apply 3–inch average thickness of organic mulch extending 12 inches beyond edge of individual planting pit Do not place mulch within 3 of trunks or stems.

**3.12 TREE MAINTENANCE**

- A. Perform tree maintenance as recommended by arborist. Maintain arborist observation of transplanting work.
- B. Maintain trees by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree–stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Treat as required to keep trees free of insects and disease.
- C. Fill areas of soil subsidence with backfill soil. Replenish mulch materials damaged or lost in areas of subsidence.
- D. Apply treatments as required to keep tree materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- E. Pesticide Application: Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written instructions. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
  1. Pre–Emergent Herbicides (Selective and Non–Selective): Apply in accordance with manufacturer's written instructions. Do not apply to seeded areas.
  2. Post–Emergent Herbicides (Selective and Non–Selective): Apply only as necessary to treat already–germinated weeds and in accordance with manufacturer's written instructions.

**3.13 REPAIR AND REPLACEMENT**

- A. General: Repair or replace transplanted trees and other plants indicated to remain or be relocated that are damaged by construction operations, in a manner recommended by the arborist and approved by Owner.
  1. Submit details of proposed pruning and repairs.
  2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
  3. Replace trees and other plants that cannot be repaired and restored to full–growth status, as determined by Owner.
- B. Remove and replace trees that are more than 20 percent dead or in an unhealthy condition before the end of the corrections period] or are damaged during construction operations that Owner determines are incapable of restoring to normal growth pattern.
  1. Provide new trees according to the Town of Vail Tree Mitigation ordinance.

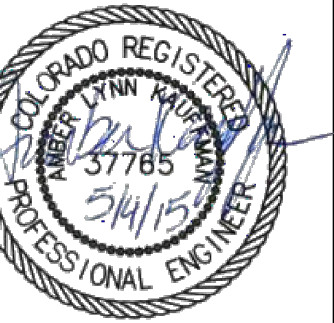
**3.14 CLEANUP AND PROTECTION**

- A. During transplanting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect trees from damage due to transplanting operations and operations of other contractors and trades. Maintain protection during transplanting and maintenance periods. Treat, repair, or replace damaged plantings.

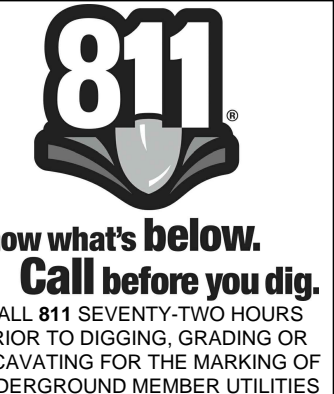
**3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS**

- A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Owner.
  1. Except for materials indicated to be retained on Owner's property or recycled, remove excess excavated material, waste materials, displaced plants, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 329600



OLSSON ASSOCIATES 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. NO.	DATE	REVISIONS DESCRIPTION

PROJECT SPECIAL PROVISIONS	DOWNTOWN STREETScape IMPROVEMENTS	FRUITA, CO	2015
drawn by: _____ SE	checked by: _____ AK	approved by: _____ WP	QA/QC by: _____
project no.: 14-1169	drawing no.:	date: 04-15-15	
SHEET			
PS7			



SECTION 321313 – CONCRETE PAVING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Full depth Integral Color Concrete Pedestrian Pavement.
2. Gray Concrete Pedestrian Pavement.

B. Related Sections:

- 1. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and control joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 REFERENCE STANDARDS

A. CDOT Standard Specifications Section 412; Portland Cement Concrete Pavement.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

C. Submit samples as required showing color, finish and sealer

D. Color chart

E. Product data

F. Equipment data

1.6 QUALITY ASSURANCE

A. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.

B. Testing Agency Qualifications

- 1. Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
2. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

- 1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 – PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

- 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials of same type, brand, and source throughout Project:

- 1. CDOT Class P with fiber mesh 1.5#/CY, 4200 psi mix
2. Portland Cement shall conform to ASTM C150, C595 or C1157 depending on soil conditions.

B. Full Depth Aggregate Concrete Aggregates: ASTM C 33, Class 4S, uniformly graded. Provide aggregates from a single source.

- 1. Maximum Coarse-Aggregate Size: 1/2 inch coarse aggregate.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Surface Retarder: CHI 047

F. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

- 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
7. Do not add calcium chloride to colored concrete as it causes mottling and surface discoloration.

2.3 FIBER REINFORCEMENT

A. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete paving, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

2.4 COLORING, TEXTURE AND SEALING MATERIALS

A. Integral Color Concrete

- 1. Color to be Scofield Chromix 5234 Summer Beige. L. M. Scofield Company, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division - 201-672-9050; Western Division - 323-720-3055; Central Division Office - 630-377-5959.
2. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are limeproof and ultra-violet resistant.
3. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

E. Gray Concrete Curing Compound:

- 1. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.

F. Colored Concrete Curing Compound:

- 1. Cureseal-S Matte; L. M. SCOFIELD COMPANY. Curing and sealing compound shall comply with ASTM C309 and be of same manufacturer and color as colored admixture, for use with integrally colored concrete.

2.6 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:

- 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.7 CONCRETE MIXTURES

A. Proportion mixtures to provide normal-weight concrete per CDOT Class P specifications.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.

- 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.5 lb/cu. yd.

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PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

- 1. Completely proof-roll subbase in one direction.
2. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 312000 "Earth Moving."

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete

B. Provide proper sub-grade compaction and grading to +/-0.1' ft.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 JOINTS

A. General: Form construction, isolation, and control joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

- 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

- 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.

3. Butt Joints: Use epoxy bonding adhesive at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated.

5. Doweled Joints: Install dowel bars and support assemblies at joints adjacent to doorways. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Expansion Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

- 1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.

2. Extend joint fillers full width and depth of joint.

3. Terminate joint filler 1/2 inch below finished surface to allow for joint sealant.

4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.

5. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint, and install joint sealant

D. Control Joints: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

- 1. Tooled Joints: After initial floating, tool joints of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Perform broom finish operations and repeat the joint tooling, creating a smooth finished band over the joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

- 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.

H. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

I. Drain Pans: Produce drain pans to required cross section, lines, grades, finish, and jointing.

J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

- 1. Do not place concrete on frozen subgrade.
2. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
3. Do not use frozen materials or materials containing ice or snow.

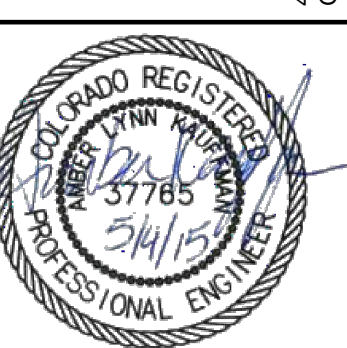
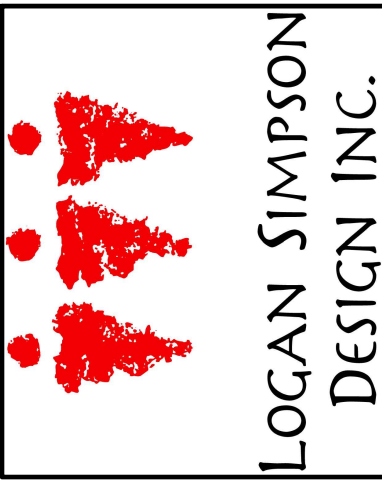
4. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

- 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.



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PROJECT SPECIAL PROVISIONS
DOWNTOWN STREETScape IMPROVEMENTS
FRUITA, CO
2015
SHEET PS8



**3.6 BROOM FINISHING**  
 A. General: Do not add water to concrete surfaces during finishing operations.  
 B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.  
 1. Medium –Textured Broom Finish (colored concrete): Provide a medium-coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, as indicated on the drawings.  
 2. Light Textured Broom Finish (gray concrete): Striate the float-finished concrete 1/32 to 1/16 inch deep with a stiff-bristled broom across the narrow dimension of the concrete bands.

**3.7 CONCRETE PROTECTION AND CURING**  
 A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.  
 B. Comply with ACI 306.1 for cold-weather protection.  
 C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer’s written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.  
 D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.  
 E. Curing Methods: Cure concrete by moisture-retaining-cover curing as follows:  
 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with concrete blankets or other moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period using cover material and waterproof tape. DO NOT PLACE PLASTIC SHEETING DIRECTLY ON CONCRETE.  
 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer’s written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

**3.8 PAVING TOLERANCES**  
 A. Comply with tolerances in ACI 117 and as follows:  
 1. Elevation: 1/4 inch.  
 2. Thickness: Plus 3/8 inch, no minus.  
 3. Surface: Gap below 10-foot-long, unleveled straightedge not to exceed 1/2 inch.  
 4. Lateral Alignment and Spacing of Dowels: 1 inch.  
 5. Vertical Alignment of Dowels: 1/4 inch.  
 6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.  
 7. Joint Spacing: 1/2 inches.  
 8. Control Joint Depth: Plus 1/4 inch, no minus.  
 9. Joint Width: Plus 1/8 inch, no minus.

**3.9 FIELD QUALITY CONTROL**  
 A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.  
 B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:  
 1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.  
 a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.  
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day’s pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.  
 3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day’s pour of each concrete mixture.  
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.  
 5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.  
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.  
 a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.  
 C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.  
 D. Test results shall be reported in writing to Owner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.  
 E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Owner but will not be used as sole basis for approval or rejection of concrete.  
 F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Owner.  
 G. Concrete paving will be considered defective if it does not pass tests and inspections.  
 H. Additional testing and inspecting, at Contractor’s expense, will be performed to determine compliance of replaced or additional work with specified requirements.  
 I. Prepare test and inspection reports.

**3.10 REPAIRS AND PROTECTION**  
 A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Owner.  
 B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.  
 C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 – CONCRETE PAVING JOINT SEALANTS

PART 1 – GENERAL

**1.1 RELATED DOCUMENTS**  
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**  
 A. Section Includes:  
 1. Cold-applied joint sealants.  
 2. Joint-sealant backer materials.  
 3. Primers.  
 B. Related Sections:  
 1. Section 033000 "Cast-in-Place Concrete" for general building, and foundation applications of concrete.  
 2. Section 321313 "Concrete Paving."

**1.3 SUBMITTALS**  
 A. Product Data: For each type of product.

**1.4 QUALITY ASSURANCE**  
 A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

**1.5 FIELD CONDITIONS**  
 A. Do not proceed with installation of joint sealants under the following conditions:  
 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.  
 2. When joint substrates are wet.  
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.  
 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 – PRODUCTS

**2.1 MATERIALS, GENERAL**  
 A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

**2.2 COLD-APPLIED JOINT SEALANTS**  
 A. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL..

**2.3 JOINT SEALANTS**  
 A. Joint sealer may be manufactured by one of the following:  
 1. Sikaflex 2c-SL Elastic Sealant/Adhesive  
 2. Tremco  
 3. Pecora  
 4. Sonneborn

**2.4 JOINT-SEALANT BACKER MATERIALS**  
 A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

**2.5 PRIMERS**  
 A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 – EXECUTION

**3.1 EXAMINATION**  
 A. Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.  
 B. Proceed with installation only after unsatisfactory conditions have been corrected.

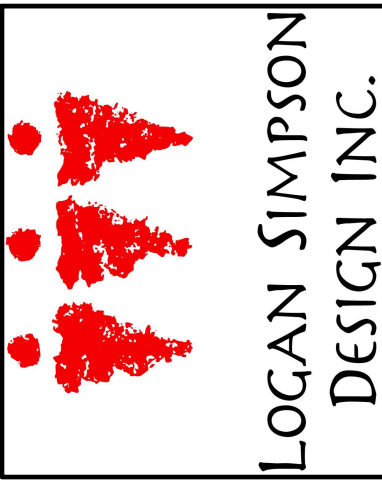
**3.2 PREPARATION**  
 A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer’s written instructions.  
 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.  
 B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer’s written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

**3.3 INSTALLATION OF JOINT SEALANTS**  
 A. Comply with joint-sealant manufacturer’s written installation instructions for products and applications indicated unless more stringent requirements apply.  
 B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.  
 C. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.  
 1. Do not leave gaps between ends of joint-sealant backings.  
 2. Do not stretch, twist, puncture, or tear joint-sealant backings.  
 3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.  
 D. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:  
 1. Place joint sealants so they fully contact joint substrates.  
 2. Completely fill recesses in each joint configuration.  
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.  
 E. Provide joint configuration to comply with joint-sealant manufacturer’s written instructions unless otherwise indicated.

**3.4 CLEANING AND PROTECTION**  
 A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.  
 B. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

**3.5 PAVING-JOINT-SEALANT SCHEDULE**  
 A. Joint-Sealant Application: Joints within concrete paving.  
 1. Joint Location:  
 a. Expansion and isolation joints in concrete paving.  
 b. Joints within concrete paving and between concrete and asphalt paving.

END OF SECTION 321373



LOGAN SIMPSON DESIGN INC.

**MOLSSON ASSOCIATES**

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REV NO.	DATE	REVISIONS DESCRIPTION

PROJECT SPECIAL PROVISIONS

DOWNTOWN STREETSCAPE IMPROVEMENTS

FRUITA, CO

2015

drawn by: \_\_\_\_\_ SF  
 checked by: \_\_\_\_\_ AK  
 approved by: \_\_\_\_\_ WP  
 QA/QC by: \_\_\_\_\_  
 project no.: 14-1169  
 drawing no.: \_\_\_\_\_  
 date: 04-15-15



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Permanent, nonfading integral concrete colors suitable for all types of concrete hardscapes, floors, cast-in-place or tilt-up structures.
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The only patent-pending coloring treatment with an SRI restoring characteristic, it's the integral color of choice for architects and contractors looking to reduce the Urban Heat Island Effect.

### Surface Retarder

**LITHOTEX<sup>®</sup> Top Surface Retarder**  
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### Restoration

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Adds color to concrete without producing a paint-like appearance. Ideal for bringing faded concrete color back up to that "new" look, or to bring consistency to mismatched color. Use with ●

**SCOFIELD<sup>®</sup> Revive<sup>™</sup> Sealer and SCOFIELD<sup>®</sup> Revive<sup>™</sup> VOC Sealer**  
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**SCOFIELD<sup>®</sup> Cureseal-W<sup>™</sup>**  
A waterborne, low VOC, clear curing compound and sealer for interior or exterior concrete surfaces. Use with ●

**SCOFIELD<sup>®</sup> Cureseal-S<sup>™</sup> Matte and Gloss**  
A solvent-borne, clear finish that is resistant to blushing. Will not yellow with age or exposure to UV light. Use with ●

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Formulated to provide invisible protection from staining, and makes concrete easier to clean and maintain. Use with ●

**CEMENTONE<sup>®</sup> Clear Sealer**  
An economical waterborne sealer formulated for protecting interior or exterior concrete not subject to heavy traffic, and where a low gloss is desired. Use with ●

**SCOFIELD<sup>®</sup> Selectseal-W<sup>™</sup>**  
A highly durable, waterborne, low VOC, clear acrylic-polyurethane sealer for use on multicolored concrete or cementitious surfaces. Use with ●



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Prior to beginning job, consult all appropriate Scofield Tech-Data Bulletins.

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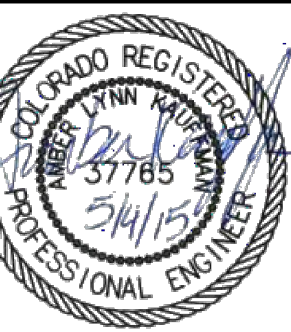


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SHEET  
PS10

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