CITY OF COLORADO SPRINGS,
EL PASO COUNTY, COLORADO

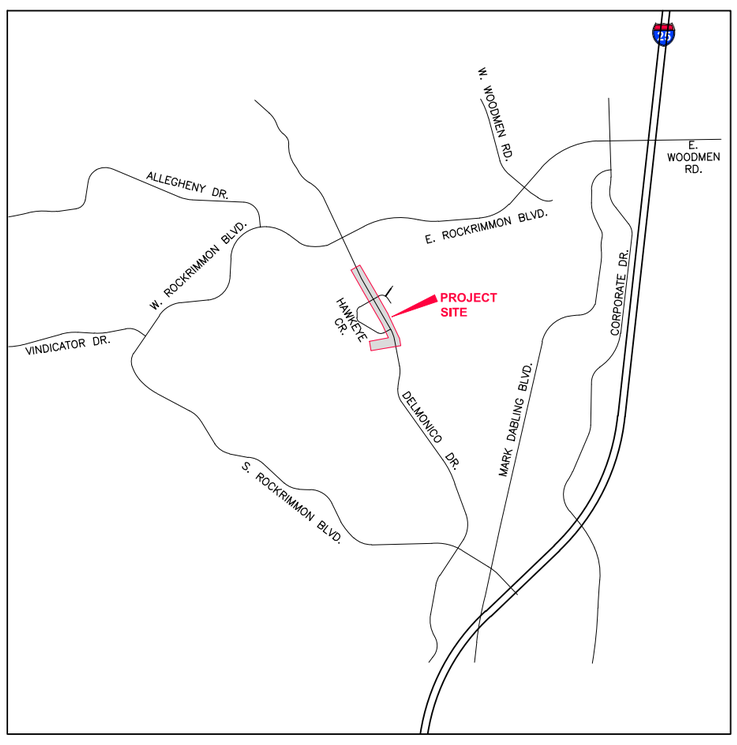
CONSTRUCTION BID PLANS FOR PROPOSED

DELMONICO STORM SEWER REPLACEMENT PROJECT

DELMONICO DRIVE: FROM W. ROCKRIMMON BLVD. TO MESEDGE DR.

PROJECT DRAWING LIST

SHEET NUMBER	SHEET NAME	SHEET DESCRIPTION
GENERAL SHEETS		
1	G000	COVER SHEET
2	G001	LEGEND AND ABBREVIATIONS
3	G002	GENERAL NOTES
4	G003	CONSTRUCTION NOTES
5	G004	SUMMARY OF QUANTITIES
CIVIL SHEETS		
6	C300	STORM SEWER PLAN
7	C301	STORM SEWER PLAN
8	C400	PROJECT SPECIFIC DETAILS
9	C500	CITY STANDARD DETAILS



VICINITY MAP

SCALE: NTS

PROJECT LOCATION AND KEY MAP

SCALE: NTS

REVIEWED BY:

CITY ENGINEERING

BY: _____ DATE:_____

CITY STREETS DIVISION

BY: _____ DATE:_____

PEAK RESOURCE CONSERVATION

BY: _____ DATE:_____

Call before you dig.

Peak Resource conservation

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER: S. BURKE

DESIGNED BY: BES

DRAWN BY: MGP

CHECKED BY: BES

PROJECT NUMBER

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

CITY OF COLORADO SPRINGS
PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

DELMONICO DRIVE STORM SEWER REPLACEMENT PROJECT

COVER SHEET

SCALE
HORZ: –
VERT: –

ISSUE DATE
10/30/15

SHEET
G000

CIVIL SYMBOLOGY

SYMBOL OR LINETYPE	DESCRIPTION
5255	HORIZONTAL CONTROL LOCATION AND CALLOUT
2 B-101	CONSTRUCTION NOTE
	SOIL BORING
TP-101	SOIL TEST PIT
	WETLAND DELINEATION SAMPLE PLOT
P_SSB#	UTILITY POT HOLE
75.8	SURFACE SPOT ELEVATION
	DIRECTION OF SURFACE RUNOFF
	DITCH OR STREAM CENTERLINE
	CUT SLOPE
	FILL SLOPE
	CONSTRUCTION ENTRANCE
	CONSTRUCTION STAGING AREA
	DIVERSION CULVERT INLET PROTECTION
	PERMANENT EASEMENT
	TEMPORARY OR CONSTRUCTION EASEMENT
	PROPERTY LINES
	RIGHT OF WAY LINES
	RIGHT OF WAY CENTERLINE
	BARBED WIRE OR FIELD FENCE
	WOOD BOARD OR SILT FENCE
HVF	CONSTRUCTION HIGH VISIBILITY FENCE
	TREE PROTECTION OR CHAIN LINK FENCE
100 YEAR	100 YEAR FLOOD BOUNDARY
	GUARDRAIL
	PROFILE FINAL GRADE SURFACE
	PROFILE EXISTING GRADE SURFACE
20	MAJOR CONTOURS AND LABELS
21	MINOR CONTOURS
WTL	WETLAND BOUNDARY AND HATCHING
	CONSTRUCTION LIMIT
	WETLAND BUFFER
MHHW	MEAN HIGH WATER
EOP	EDGE OF PAVEMENT
	SHORELINE JURISDICTION
	STREAM BUFFER
OHW	ORDINARY HIGH WATER
	VEGETATION LINE
	CONIFER TREE
	DECIDUOUS TREE

SYMBOL OR LINETYPE	DESCRIPTION
	INUNDATED SCRUB SHRUB WETLAND
	SATURATED SCRUB SHRUB WETLAND
	PALUSTRINE EMERGENT
	RIPARIAN
	SALT WATER EDGE
	UPLAND UPLAND SEED MIX
	LOW GROW SEED MIX/ LAWN SEED MIX
	WET NATIVE SEED MIX
	ASPHALT OVERLAY
	EROSION CONTROL BLANKET OR MATT
	CONCRETE
	GRAVEL, DRAIN ROCK OR AGGREGATE BASE
	SANDBAG REVETMENT
	DEMOLITION
	CRUSHED GRAVEL SURFACING
MH	SANITARY SEWER MANHOLE
SS	SANITARY SEWER PIPELINE
CB	CATCH BASIN
	CATCH BASIN INSERT
	CULVERT
SD	STORM DRAIN PIPELINE
	WATER PIPE CENTERLINE
175+00	WATER PIPE STATIONING AND TICKS
W	WATER PIPE SINGLE LINE
	WATER PIPE DOUBLE LINE
	ISOLATION VALVE
	TRENCH PLUGS
	BLIND FLANGE
	PLUG VALVE
	ACCESS & VAULT CHAMBER
	STORM SEWER MANHOLE TYPE II
	STORM SEWER MANHOLE TYPE I

EXISTING CIVIL SYMBOLOGY

SYMBOL	DESCRIPTION
	MONUMENT
	MONUMENT IN CASE
	REBAR & CAP
	SCRIBED "X"
	PK NAIL
	METAL SIGN POST
	WOOD SIGN POST
	SANITARY SEWER MANHOLE
	STORM DRAIN MANHOLE
	CATCH BASIN
WM	WATER METER
	GAS VALVE
TR	TRAFFIC JUNCTION BOX
EL	ELECTRICAL JUNCTION BOX
PM	POWER METER
TC	TELECOMMUNICATION JUNCTION BOX
CT	CABLE TV JUNCTION BOX
	JUNCTION BOX
P	POWER VAULT
TELR	TELECOMMUNICATION RISER
P	UTILITY POLE
UG	UTILITY POLE W/CONDUITS TO UNDERGROUND
	GUY ANCHOR
GP	GUY POLE
	TRAFFIC SIGNAL POLE W/ LUMINAIRE
	LUMINAIRE (SINGLE FIXTURE)
UG	LUMINAIRE (SINGLE FIXTURE) W/CONDUITS TO UNDERGROUND

SYMBOL	DESCRIPTION
GTP	GATE POST
MB	MAIL BOX
	CONIFEROUS TREE
	DECIDUOUS TREE
	TEST HOLE (WITH FIELD IDENTIFIER)
	YARD LIGHT OR LUMINAIRE W/NO MAST
	GRATE INLET
CPEP	CORRUGATED POLYETHYLYNE PIPE
RCP	REINFORCED CONCRETE PIPE
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
DIP	DUCTILE IRON PIPE
	WATER MANHOLE
	WATER VALVE
	FIRE HYDRANT

LINETYPE	DESCRIPTION
G	GENERIC GAS LINE
IRR	IRRIGATION
SD	STORM DRAIN
SS	SANITARY SEWER
FM	FORCEMAIN
W	GENERIC WATER LINE
UGE	UNDERGROUND POWER
UGF	UNDERGROUND FIBER OPTIC
UGT	UNDERGROUND TELEPHONE
OHTV	UNDERGROUND TELEVISION
OHE	OVERHEAD POWER
OHF	OVERHEAD FIBER OPTIC
OHT	OVERHEAD TELEPHONE
OHTV	OVERHEAD TELEVISION
20	MAJOR CONTOUR
21	MINOR CONTOUR

GENERAL NOTES:

1. THIS IS A STANDARD DRAWING SHOWING COMMON SYMBOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH DRAWING FOR USAGE.

GENERAL SYMBOLOGY

PLAN
SCALE: 1/4" = 1'-0"

ARROW INDICATES DIRECTION OF PLAN NORTH — N

SECTION LETTER
FLAG INDICATES DIRECTION OF SECTION CUT
X / XXX
* DRAWING WHERE SECTION VIEW IS LOCATED

SECTION CUT MARKER

SECTION
SCALE: 3/8" = 1'-0"

SECTION LETTER
X / XXX
* DRAWING WHERE SECTION VIEW IS FIRST CUT

DETAIL NUMBER
X / XXX
* DRAWING WHERE DETAIL IS LOCATED

DETAIL MARKER

DETAIL
SCALE: 3" = 1'-0"

DETAIL NUMBER
X / -
REPRESENTATIVE LOCATION OF DETAIL

ELEVATION
SCALE: 3" = 1'-0"

ELEVATION IDENTIFICATION LETTER
X / XXX
* DRAWING WHERE POINT OF VIEW MARKER CAN BE FOUND

* IF PLAN AND SECTION, OR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE (-).

ELEVATION LETTER
ARROW INDICATES POINT OF VIEW
X / XX
* DRAWING WHERE ELEVATION IS LOCATED

SINGLE ELEVATION OR PHOTO MARKER

IDENTIFICATION SYMBOLOGY

FILE TYPE DESIGNATIONS (1ST TWO DIGITS)

00	GENERAL
01	CIVIL DESIGN (ROADWAY AND PEDESTRIAN IMPROVEMENTS)

DRAWING DISCIPLINE ABBREVIATIONS (1ST LETTER)

G	GENERAL
C	CIVIL

DRAWING SERIES DESIGNATIONS (2ND THREE DIGITS)

000	SURVEY CONTROL AND PROJECT KEY MAP
100	DEMOLITION OR REMOVAL PLANS
200	ROADWAY IMPROVEMENTS PLANS OR PLAN AND PROFILES AND SECTIONS
300	DRAINAGE AND GRADING PLAN AND PROFILES
400	ENLARGED PLAN, SECTIONS AND DETAILS
500	STANDARD DETAILS

ABBREVIATIONS

ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
APPROX	APPROXIMATE OR APPROXIMATELY
BCR	BEGIN CURB RADIUS
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
C/L	CENTERLINE
CLR	CLEARANCE
CONC	CONCRETE
DWG	DRAWING
DR	DRIVE
EA	EACH
ECR	END CURB RADIUS
ELEV OR EL	ELEVATION
ESMT	EASEMENT
EW	EACH WAY
EX OR EXIST	EXISTING
FL	FLOWLINE
FT	FOOT/FEET
HBP	HOT BITUMINOUS PAVEMENT
HCL	HORIZONTAL CONTROL LINE
K	VERTICAL CURVE RATIO
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
NTS	NOT TO SCALE
PC	POINT OF CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVE OR POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENT
RAD	RADIUS, OR CENTER OF RADIUS
ROW	RIGHT-OF-WAY
RT	RIGHT
ST	STREET
STA	STATION
STD	CITY OF COLORADO SPRINGS STANDARD SPECIFICATION
SW OR S/W	SIDEWALK
TBC	TOP BACK OF CURB
TYP	TYPICAL
TER	TERRACE
WWF	WELDED WIRE FABRIC

MISC. ABBREVIATIONS

@	AT
ø	PHASE, DIAMETER
&	AND
'	FEET, MINUTES
"	INCHES, SECONDS
°	DEGREE
#	NUMBER
℄	CENTERLINE
(E)	EXISTING
(P)	PROPOSED
C&G	CURB AND GUTTER
[PIP]	PROTECT-IN-PLACE
ELEC	ELECTRIC
SAN	SANITARY
SWR	SEWER
UG	UNDERGROUND
WTR	WATER
XING	CROSSING

GENERAL NOTES:

1. THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.
2. LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION; "INC" MAY MEAN INCLUDED OR INCLUDING AND "REINF" MAY MEAN EITHER REINFORCE OR REINFORCING.

BID SET
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER: S. BURKE
DESIGNED BY: BES
DRAWN BY: MGP
CHECKED BY: BES
PROJECT NUMBER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

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PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
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COLORADO SPRINGS, CO 80903

DELMONICO STORM SEWER REPLACEMENT PROJECT

LEGEND AND ABBREVIATIONS

SCALE
HORZ: –
VERT: –

ISSUE DATE
10/30/15

SHEET
G001

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF COLORADO SPRINGS, ENGINEERING DIVISION, GENERAL PROVISIONS, SPECIAL PROVISIONS, STANDARD SPECIFICATIONS, REVISIONS TO STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS, CDOT STANDARD SPECIFICATIONS, LATEST REVISION.

2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE STANDARDS AND REGULATIONS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.).

3. NO FIELD CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE PROJECT ENGINEER.

4. SUBMITTALS SHALL BE MADE FOR ALL MATERIALS TO BE INCORPORATED INTO THIS PROJECT.

5. UTILITY LINES ARE SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION AND PROTECTION OF ALL UTILITIES IN PLACE.

6. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 TWO BUSINESS DAYS IN ADVANCE OF ANY EXCAVATION OR GRADING. FOR A LIST OF SPECIFIC CONTACTS SEE SPECIFICATIONS.

7. THE CONTRACTOR SHALL PROJECT AND MAINTAIN ALL UTILITIES AND STRUCTURES AFFECTED BY THE WORK AND ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE CITY OF COLORADO SPRINGS. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS AS NECESSARY. THE CITY ENGINEERING INSPECTIONS AND UTILITY DEPARTMENTS SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK WHERE THESE DEPARTMENTS MAY BE AFFECTED.

8. THE CONTRACTOR SHALL NOTIFY THE GAS DIVISION INSPECTOR (636-5736) AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION NEAR ANY GAS FACILITIES. THE GAS DIVISION WILL RELOCATE THE GAS SERVICES REQUIRED ON AN AS NEEDED BASIS.

9. EXCAVATION AT GAS LINES: TEMPORARY COVER DURING CONSTRUCTION SHALL BE AT LEAST 18 INCHES OVER THE GAS CONDUIT. FINISH GRADE MUST BE AT LEAST 2 FEET AND NO MORE THAN 6 FEET OVER THE GAS CONDUIT.

10. IN SOME OF THE PROPOSED AREAS OF CONSTRUCTION EXISTING UNDERGROUND TELEPHONE AND CABLE TELEVISION FACILITIES MAY BE LOCATED IN CLOSE PROXIMITY TO THE WORK. THE CONTRACTOR MAY, IF NECESSARY TEMPORARILY DISPLACE THE CABLES DURING CONSTRUCTION AND REINSTALL THEM IN ACCORDANCE WITH THE APPROPRIATE TELEPHONE OR CABLEVISION COMPANY'S GUIDELINES. COORDINATION WITH BOTH THE TELEPHONE AND THE CABLE TELEVISION COMPANY IS REQUIRED TO BE DONE BY THE CONTRACTOR.

11. THE CONTRACTOR SHALL OBTAIN AN APPROVED TRAFFIC CONTROL PLAN PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

12. THE PHYSICAL FEATURES WITHIN THE LIMITS OF THE PROJECT HAVE BEEN SHOWN BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN. THE ENGINEERING ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FEATURES SHOWN. THE CONTRACTOR SHALL REVIEW AND VERIFY EXISTING PHYSICAL FEATURES AND ELEVATIONS AND INFORM THE THEMSELVES OF THE CONDITIONS TO BE ENCOUNTERED DURING THE CONSTRUCTION.

13. THE CONTRACTOR SHALL LIMIT ALL WORK AND STORAGE AREAS TO THE PUBLIC RIGHT-OF-WAYS AND EASEMENTS. USE OF ANY PRIVATE AREAS FOR THIS PROJECT BY THE CONTRACTOR MUST BE APPROVED IN WRITING BY THE PROPERTY OWNER WITH A COPY OF THIS APPROVAL PROVIDED TO THE ENGINEER PRIOR TO USAGE.

14. ALL CONSTRUCTION IS TO INCLUDE COMPACTION AND FINISH GRADING IN THE UNIT PRICE OF RELATED WORK ITEM.

15. ALL WORK SHALL BE DONE TO THE LINES, GRADES, SECTIONS, AND ELEVATIONS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.

16. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF COLORADO SPRINGS AND THE ENGINEER.

17. THE ENGINEER SHALL BE NOTIFIED WITHIN 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

18. PAYMENT, DIMENSIONS AND RADII ARE SHOWN TO THE FLOWLINE UNLESS OTHERWISE NOTED.

19. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS BY THE CONTRACTOR AT HIS/HER OWN EXPENSE. CONSTRICTION PARKING OF VEHICLES OR EQUIPMENT. DISPOSAL OF LITTER AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.

20. THE CONTRACTOR SHALL NOT REMOVE AND SHALL PROTECT FROM DAMAGE ALL TREES, BUSHES, AND EXISTING IMPROVEMENTS INSIDE AND OUTSIDE OF THE LIMITS OF WORK. SPECIFIC PROVISIONS ARE SHOWN ON THE PLANS.

21. NO TREES SHALL BE REMOVED OR TRIMMED WITHOUT PRIOR ACKNOWLEDGMENT OF THE PROPERTY OWNER AND/OR PROJECT ENGINEER.

22. THE CONTRACTOR SHALL PROTECT THE EXISTING DRAINAGE STRUCTURES AND REROUTE ANY RUNOFF AS NECESSARY DURING CONSTRUCTION ACTIVITIES TO PREVENT EROSION AND DAMAGE.

23. THE CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN ACCESS AT ALL TIMES DURING THE PROJECT.

24. THE CONTRACTOR SHALL CLOSELY MONITOR ACCESS FOR HEAVY CONSTRUCTION EQUIPMENT THROUGH THE PROJECT AND RESIDENTIAL AREAS.

25. SHOULD THE CONSTRUCTION ACTIVITY CONTINUE PAST 7:00 P.M., THE CONTRACTOR SHALL ENSURE THAT THE NOISE LEVEL DOES NOT EXCEED THE LIMITS SPECIFIED IN THE CITY ORDINANCE.

26. WHERE PAVEMENT IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE BY FULL DEPTH SAWING. SAWING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCIDENTAL TO "REMOVAL OF ASPHALT PAVEMENT". THE CONTRACTOR WILL BE REQUIRED TO PAINT THE EDGE OF CUT PAVEMENT WITH DILUTED EMULSIFIED ASPHALT (SLOW SETTING) PRIOR TO PAVING OPERATIONS. VERTICAL EDGES SHALL NOT REMAIN OVERNIGHT. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF ONE PART EMULSIFIED ASPHALT AND ONE PART WATER.

27. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATION SHALL BE AS ORDERED. THE COST OF WATER SHALL BE INCIDENTAL TO OTHER BID ITEMS.

28. THE PHYSICAL FEATURES REQUIRING REMOVAL OR OBLITERATION WITHIN THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND ASPHALT BE DISPOSED OF OFF-SITE. THE EXCEPTION IS TRAFFIC CONTROL DEVICES, WHICH SHALL BE SALVAGED FOR CITY MAINTENANCE.

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING ANY MONUMENT, RANGE POINTS, TIES, BENCHMARKS AND/OR SURVEY CONTROL POINTS WHICH MAYBE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENT BY A REGISTERED PROFESSIONAL LAND SURVEYOR AUTHORIZED TO PRACTICE LAND SURVEYING IN THE STATE OF COLORADO.

30. THE CONTRACTOR SHALL HAVE A COPY OF ALL APPLICABLE STANDARDS ON SITE FOR THE DURATION OF THE PROJECT.

31. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL WITHIN 10 FT. OF THE EDGE OF THE TRAVELED WAY.

32. THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVER. THIS DEVICE SHALL BE USED ON ALL PASSES AND LIFTS OF BITUMINOUS PAVEMENT PLACE

    A. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
    B. SHORT SKI OR OR SHOE.
    C. CONTROL LINE AND STAKES, SUFFICIENT FOR EACH PHASE OF THE PROJECT.

33. ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACE.

34. BEFORE PLACEMENT OF THE TACK COAT, THE CONTRACTOR SHALL CLEAN THE PRESENT ROADWAY AS DIRECTED. CLEANING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.

35. A TACK COAT OF EMULSIFIED ASPHALT (SLOW SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COARSES TO IMPROVEMENT BOND. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.

36. STORM INLET STATIONING AND ELEVATION REFERENCE TOP FRONT MIDDLE OF BOX. STORM MANHOLE STATIONING REFERENCE CENTER OF MANHOLE.

37. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES NECESSARY THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT TRAFFIC ENGINEERING FORTY-EIGHT (48) HOURS IN ADVANCE FOR ANY REQUIRED MODIFICATION OF TRAFFIC SIGNALS WITHIN CONSTRUCTION AREA AS NECESSARY TO MAINTAIN SAFE OPERATIONS.

38. EXISTING AND PROPOSED JUNCTION BOX LIDS, WATER VALVES, SANITARY SEWER, OR STORM SEWER MANHOLE LIDS SHALL BE RAISED TO MATCH PROPOSED NEW GRADE. ALL ADJUSTMENTS OR MATERIALS REQUIRED FOR THE ADJUSTMENT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

39. ALL WORK DONE ON OR AROUND WATER RESOURCES DEPARTMENT FACILITIES MUST BE INSPECTED BY A WATER RESOURCES DEPARTMENT INSPECTOR. THE CONTRACTOR IS REQUIRED TO NOTIFY THE WATER RESOURCES DEPARTMENT PIPELINE INSPECTION SECTION (638-5654) TWO WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION. IF THIS PROJECT INVOLVES A TAP, DO NOT CALL TO SCHEDULE TAP UNTIL THE PIPELINE INSPECTION NOTIFICATION. INSPECTION REQUIRED AFTER WORKING HOUR MUST BE COORDINATED WITH THE PIPELINE INSPECTOR IN ADVANCE AND WILL BE SUBJECT TO OVER TIME CHARGES PER W.R.D. SPECIFICATIONS.

40. THE CONTRACTOR SHALL AT THEIR EXPENSE, SUPPORT AND PROTECT ALL WATER MAINS SO THAT THEY WILL FUNCTION CONTINUOUSLY DURING CONSTRUCTION EXCEPT THOSE DESIGNATED TO BE TEMPORARILY SHUT DOWN. TEMPORARY WATER SERVICE DISRUPTION SHALL BE DONE TO MINIMIZE THE EFFECTS ON COLORADO SPRING UTILITIES CUSTOMERS. SHOULD A WATER MAIN FAIL AS A RESULT OF THE CONTRACTOR'S OPERATIONS, IT WILL BE REPAIRED IMMEDIATE EITHER THE CONTRACTOR OR THE WATER RESOURCES DEPARTMENT AT THE FULL COST OF LABOR AND MATERIALS TO THE CONTRACTOR.

41. ANY DISCREPANCY WITHIN THESE PLANS SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND WORK SHALL STOP UNTIL THE DISCREPANCY IS DISCUSSED AND DECISIONS/AGREEMENTS HAVE BEEN MADE.

42. REFER TO PROJECT MANUAL FOR PAY ITEM DESCRIPTIONS AND MEASUREMENT. ALL WORK WITHOUT A SPECIFIC BID ITEM IS INCIDENTAL TO OTHER PAY ITEMS.

43. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL ALL PERMITS HAS BEEN ISSUED.

44. THE APPROVAL OF THESE PLAN OR ISSUANCE OF A PERMIT BY THE CITY OF COLORADO SPRINGS DOES NOT AUTHORIZE THE OWNER OR CONTRACTOR TO VIOLATE ANY FEDERAL, STATE OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES.

EARTHWORK:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LEGAL DISPOSAL OF ANY EXCESS SOIL, DEBRIS AND WASTE MATERIAL OFF OF THE PROJECT SITE.

2. ANY SOIL LYING BELOW THE SUBGRADE ELEVATION WHICH IS DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.

3. ANY MATERIAL NOT SUITABLE FOR BACKFILL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF, BY AND AT THE EXPENSE OF THE CONTRACTOR.

BENCHMARK AND SURVEY CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING OF BOTH HORIZONTAL AND VERTICAL LAYOUT ON THIS PROJECT. COORDINATES ARE REFERENCED IN THE COORDINATE LIST SHOWN ON THESE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER FOR INTERPRETATION AND INFORMATION IN STAKING OF THE PROJECT FOR CONSTRUCTION.

2. A TEMPORARY BENCHMARK HAS BEEN ESTABLISHED FOR THIS PROJECT UNLESS OTHERWISE NOTED.

3. PRIOR TO PROJECT COMPLETION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY PROPERTY MONUMENTATION DISTURBED OR REMOVED BY CONSTRUCTION OPERATIONS. THIS WORK SHALL BE PERFORMED BY A LAND SURVEYOR LICENSED IN THE STATE OF COLORADO. PROPERTY CORNERS WHICH FALL WITHIN NEW CONCRETE FLATWORK SHALL BE DURABLE AND SET FLUSH. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

TRAFFIC GENERAL NOTES:

1. BEFORE EXCAVATING, CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING.

3. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT HAS BEEN ISSUED.

4. THE APPROVAL OF THESE PLANS OR ISSUANCE OF A PERMIT BY THE CITY OF COLORADO SPRINGS DOES NOT AUTHORIZE THE SUBDIVIDER AND OWNER TO VIOLATE ANY FEDERAL, STATE OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW, TEMPORARY AND EXISTING TRAFFIC SIGNS FROM THE START OF THE CONSTRUCTION PROJECT UNTIL ACCEPTANCE BY CITY TRAFFIC ENGINEERING.

6. ALL TRAFFIC SIGNS, PAVEMENT MARKINGS, AND TRAFFIC SIGNALS SHALL MEET OR EXCEED M.U.T.C.D. STANDARDS.

7. THE CONTRACTOR SHALL NOT REMOVE ANY EXISTING SIGNS, PAVEMENT MARKINGS OR TRAFFIC SIGNALS DURING THE PROJECT WITHOUT SIGNED AUTHORIZATION OF THE CITY ENGINEERING INSPECTOR ASSIGNED TO THE PROJECT.

8. CONTRACTOR SHALL PREPARE A DETAILED TRAFFIC CONTROL PLAN, SUBMIT TO CITY TRAFFIC ENGINEERING FOR APPROVAL, AND OBTAIN APPROPRIATE PERMITS IN ACCORDANCE WITH THE "TRAFFIC CONTROLS FOR STREET CONSTRUCTION, UTILITY WORK AND MAINTENANCE OPERATIONS", MUTCD SUPPLEMENT FOR THE CITY OF COLORADO SPRINGS, AUGUST 1992.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE TRAFFIC CONTROL. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAINTAINING THE TEMPORARY TRAFFIC CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW, TEMPORARY AND EXISTING TRAFFIC SIGNAL MODIFICATIONS.

STRIPING AND SIGNAGE GENERAL NOTES:

1. THE CONTRACTOR SHALL LEVEL ALL DISTURBED AREAS WITH TOPSOIL AND HAND-RAKE TO A UNIFORM APPEARANCE. THE AREA SHALL BE SEEDED WITH PROTECTIVE STRAW MAT COVER DURING WINTER MONTHS OR SODDED ALL OTHER TIMES. THIS WORK IS TO BE CONSIDERED AN INCIDENTAL ITEM.INSTALLATION OF ALL STRIPING, SIGNS AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVAL OF EXISTING PAVEMENT MARKINGS (SCARRING OF PAVEMENT IS NOT PERMITTED). AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR OVERLAYING OR CHIP SEALING ROADWAY, IF SCARRING OCCURS DURING REMOVAL OF EXISTING OR TEMPORARY PAVEMENT MARKINGS. THE CITY TRAFFIC ENGINEER WILL DETERMINE METHOD OF PAVEMENT REPAIR.

4. ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENT ADOPTED EDITION OF THE FOLLOWING MANUALS AND THEIR SUPPLEMENTAL AMENDMENTS:
    A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
    B. CITY OF COLORADO SPRINGS SIGNS AND MARKING GUIDELINES
    C. CITY OF COLORADO SPRINGS STANDARD SPECIFICATIONS
    D. CITY OF COLORADO SPRINGS PUBLIC WORKS DESIGN MANUAL

5. ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE CITY TRAFFIC ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.

6. CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS AND LEGENDS BY HYDROBLASTING, SANDBLASTING AND/OR GRINDING. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.

7. SIGN POSTS SHALL BE INSTALLED WITH A MINIMUM OF 1 ¾" X 10' SQUARE PERFORATED STEEL TUBING WITH SLEEVE PER CITY OF COLORADO SPRINGS STANDARD.

8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM OF HIGH INTENSITY GRADE SHEETING.

9. ANY DEVIATION FROM THE STRIPING AND SIGNING PLANS SHALL BE APPROVED BY THE ENGINEER OF WORK AND THE CITY TRAFFIC ENGINEER PRIOR TO ANY CHANGES BEING MADE IN THE FIELD.

10. ALL SIGNS SHOWN ON THE STRIPING AND SIGNING PLANS SHALL BE NEW SIGNS PROVIDED AND INSTALLED BY THE CONTRACTOR, EXCEPT FOR EXISTING SIGNS SPECIFICALLY INDICATED TO BE RELOCATED OR TO REMAIN.

11. STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET AND CONTINENTAL CROSSWALKS SHALL HAVE A MINIMUM WIDTH OF 9 FEET UNLESS INDICATED OTHERWISE.

12. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE A MINIMUM OF 90MIL THICKNESS THERMOPLASTIC OR PREFORM PLASTIC TAPE.

13. ALL LONGITUDINAL LINES SHALL BE A MINIMUM OF 15MIL THICKNESS EPOXY.

14. CONTRACTOR TO DELIVER ALL REMOVED SIGNS TO THE CITY OF COLORADO SPRINGS SIGNS/MARKINGS SHOP AT 404 FONTANERO STREET, (719) 578-6721.

15. CONTRACTOR SHALL NOTIFY CITY TRAFFIC ENGINEER (719) 385-5908 A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNAGE.

NPDES DRAINAGE WATER QUALITY NOTES:

1. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENTS, MUD, AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOWLINES AND PUBLIC RIGHTS OF WAY AS A RESULT OF THIS CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER.

2. THE CLEANING OF CONCRETE TRUCK DELIVERY CHUTES IS PROHIBITED AT THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER IS PROHIBITED.

3. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATION, INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

4. THE CONTRACTOR MUST KEEP ALL POLLUTANTS, INCLUDING TRENCH BACKFILL MATERIAL, FROM WASHING INTO THE STORM SEWER SYSTEM.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A STORM WATER MANAGEMENT PLAN PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, IF THE PROJECT MEETS MINIMUM REQUIREMENTS FOR A PERMIT.

6. THE CONTRACTOR SHALL LEVEL ALL DISTURBED AREAS WITH TOPSOIL AND HAND-RAKE TO A UNIFORM APPEARANCE. THE AREA SHALL BE SEEDED WITH PROTECTIVE STRAW MAT COVER DURING WINTER MONTHS OR SODDED ALL OTHER TIMES. THIS WORK IS TO BE CONSIDERED AN INCIDENTAL ITEM.

GENERAL CONSTRUCTION NOTES:

1. PAY ITEMS LISTED IN THE BID SCHEDULE ARE THE ONLY PAY ITEMS FOR THE PROJECT. ANY OTHER ITEMS NECESSARY FOR A COMPLETE PROJECT, BUT NOT SHOWN IN THE BID SCHEDULE SHALL BE CONSIDERED AN INCIDENTAL ITEM AND IT'S COST TO BE INCLUDED IN OTHER ITEMS. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO BIDDING PROJECT. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE, EXCEPT AS NOTED.

2. ANY CONTRACTOR-CAUSED DAMAGE TO UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT NO COST TO THE CITY OF COLORADO SPRINGS AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR, SUBCONTRACTOR OR AS APPROVED BY THE CITY ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK IN THE PROJECT AREA. LIKEWISE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK AND THAT OF THE INVOLVED UTILITIES IN THE PROJECT AREA.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTAL ITEMS NEEDED TO PROVIDE ADEQUATE CONSTRUCTION SIGNING, BARRICADES, TRAFFIC CONTROL DEVICES AND OTHER RELATED ITEMS FOR THE PROJECT AREA, DURING THE CONSTRUCTION PERIOD. THIS WORK SHALL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEM.

4. THE CONTRACTOR SHALL CAREFULLY REMOVE, STORE AND REINSTALL ALL CITY-OWNED SIGNS WHOSE REMOVAL IS REQUIRED BY THIS CONSTRUCTION WORK IN THE PROJECT AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR THE CITY TO INSPECT ALL SIGNS SCHEDULED FOR REMOVAL PRIOR TO THEIR REMOVAL. ONCE SAID SIGNS HAVE BEEN REMOVED, IT WILL BE ASSUMED THAT THEY WERE IN GOOD CONDITION AT THE TIME OF REMOVAL. ANY SIGNS DAMAGED OR LOSS BY THE CONTRACTOR SHALL BE REPLACED AT NO COST TO THE CITY. MATERIALS SHALL BE APPROVED BY THE PROJECT ENGINEER. ALL POST-MOUNTED SIGNS SHALL BE RESET AT THE PROPER HEIGHT AND LOCATION (CITY TO PROVIDE LOCATION OR AS SHOWN ON THE ENCLOSED PLAN).

5. ALL SIDEWALK AND PAVED DRIVEWAY REMOVALS SHALL BE BOUNDED BY JOINTS OR SAWCUTS. SAWCUTS IS TO BE CONSIDERED AN INCIDENTAL ITEM AND THE COST OF THIS ITEM IS TO BE INCLUDED IN OTHER PAY ITEMS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL DRIVEWAY CLOSINGS WITH THE RESPECTIVE PROPERTY OWNERS AND TENANTS, IF PROPERTY IS RENTED. EXISTING CONCRETE DRIVES SHALL BE REPLACED PER CITY OF COLORADO SPRINGS STANDARD SPECIFICATIONS.

7. PROPERTY OWNERS WILL BE NOTIFIED BY THE CITY, PRIOR TO CONSTRUCTION, THAT IT WILL BE THE OWNER'S RESPONSIBILITY TO REMOVE TREES, SHRUBS OR OTHER PROPERTY WHICH THEY INTEND TO KEEP. IF THE ITEMS ARE NOT REMOVED AT THE TIME OF CONSTRUCTION AND ARE WITHIN THE PROPOSED SIDEWALK CONSTRUCTION AREA, THE MISC. ITEMS AND/OR VEGETATION REMOVED SHALL BE PLACED ON THE PROPERTY OWNER'S LAND OR DISPOSED OF OFFSITE AS DIRECTED BY THE PROJECT ENGINEER. FENCES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR UNIT PRICE FOR FENCES AS DIRECTED BY THE PROJECT ENGINEER. TREES MARKED TO BE TRIMMED IN THE PLANS SHALL BE DONE AT THE DIRECTION OF THE PROJECT ENGINEER. THIS WORK SHALL BE INCLUDED IN THE CLEARING AND GRUBBING PAY ITEM.

8. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE TREES AND SHRUBS UNLESS SO DIRECTED BY THE PROJECT ENGINEER.

9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO THE START OF WORK. THIS WORK IS TO BE CONSIDERED AN INCIDENTAL ITEM AND THE COST OF THIS ITEM IS TO BE INCLUDED IN OTHER PAY ITEMS.

10. ANY SURPLUS EXCAVATION TO INCLUDE BUT NOT LIMITED TO THE REMOVAL OF LANDSCAPING FOR SIDEWALK INSTALLATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND DISPOSAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY AT NO ADDITIONAL COST.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEYING AND CONSTRUCTION STAKING FOR THE PROJECT. ALL GRADING AND SURFACING SHALL BE IN ACCORDANCE WITH THE PLAN SHEETS AND THE CITY OF COLORADO SPRINGS STANDARD SPECIFICATIONS.

12. THE CONTRACTOR SHALL REMOVE AND STOCKPILE ALL SALVAGED TOPSOIL TO BE USED LATER AS BACKFILL BEHIND CURBS AND DRIVES OR IN THE RESTORATION OF DISTURBED AREAS. THIS WORK IS TO BE CONSIDERED AN INCIDENTAL ITEM AND THE COST OF THIS ITEM IS TO BE INCLUDED IN OTHER PAY ITEMS.

13. CAUTION: FOR UNDERGROUND UTILITY LOCATIONS, CONTACT 1-800-922-1987 PRIOR TO EXCAVATION. ALL COSTS ASSOCIATED WITH THE LOCATION AND VERIFICATION OF EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

NOTE:

1. THIS IS A STANDARD DRAWING SHOWING COMMON NOTES. ALL NOTES ARE NOT NECESSARILY APPLICABLE TO THIS PROJECT.

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER: S. BURKE
DESIGNED BY: BES
DRAWN BY: MGP
CHECKED BY: BES
PROJECT NUMBER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

CITY OF COLORADO SPRINGS
PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

DELMONICO STORM SEWER REPLACEMENT PROJECT

GENERAL NOTES

SCALE
HORZ: –
VERT: –

ISSUE DATE
10/30/15

SHEET
G002
3 OF 9 SHEETS

BOULDERS:

1. MINIMUM DENSITY FOR ACCEPTABLE BOULDERS SHALL BE ONE HUNDRED SIXTY FIVE (165) POUNDS PER CUBIC FOOT. THE SPECIFIC GRAVITY SHALL BE A MINIMUM OF 2.65 ACCORDING TO THE BULK–SATURATED SURFACE–DRY BASIS, PER AASHTO T8.
2. TWELVE (12) CYCLES OF FREEZING AND THAWING WHEN TESTED IN ACCORDANCE WITH AASHTO TEST T103 FOR LEDGE ROCK, PROCEDURE A.
3. BOULDERS SHALL BE ROUGHLY BOX–SHAPED. BOULDER DIMENSIONS SHALL CONFORM TO THE SPECIFICATIONS.
4. CONTROL OF GRADATION WILL BE BY VISUAL INSPECTION. HOWEVER, IN THE EVENT ENGINEER DETERMINES THE BOULDERS TO BE UNACCEPTABLE, ENGINEER SHALL PICK TWO RANDOM TRUCKLOADS TO BE DUMPED AND CHECKED FOR GRADATION. MECHANICAL EQUIPMENT AND LABOR NEEDED TO ASSIST IN CHECKING GRADATION SHALL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
5. BOULDERS SHALL BE CERTIFIED AND FREE OF CALCITE INTRUSIONS. NO RHYOLITE OR DOLOMITE SHALL BE USED.
6. THE BOULDERS SHALL BE CAREFULLY PICKLED AND ARRANGED SO THAT ADJACENT ROCK SURFACES MATCH WITHIN TWO(2) INCHES IN TOP ELEVATION AND TWO (2) INCHES ALONG VERTICAL EXPOSED FACES UNLESS SHOWN DIFFERENTLY IN DRAWINGS. BOULDERS SHALL BE PLACED SUCH THAT ADJACENT BOULDERS "TOUCH" EACH OTHER AND VOIDS DO NOT EXCEED FOUR (4) INCHES. IT IS THE INTENT OF CONSTRUCTION TO MINIMIZE VOIDS AND GROUT PLACED BETWEEN BOULERS.

DEMOLITION:

1. FAILED VERTICAL CONCRETE WALL, AS WELL AS THE TWO REMAINING VERTICAL WALL SECTIONS LOCATED IN CHANNEL, SHALL BE REMOVED AND DISPOSED OF OFF SITE.
2. RIP RAP AT SOUTH EAST END OF THE VERTICAL WALLED DRAINAGE WAY SHALL BE REMOVED, STORED ON SITE, AND REPLACED WITH PROPOSED RIP RAP SLOPE
3. TREES IDENTIFIED TO BE REMOVED SHALL BE HAULED OFF SITE BY THE CONTRACTOR.
4. DEBRIS AND NON–NATIVE MATERIAL FOUND ON THE SURFACE IN THE PROJECT AREA SHALL BE HAULED OFF SITE.
5. CARE IS TO BE TAKEN TO NOT DAMAGE FURTHER THE EXISTING CHANNEL'S CONCRETE BOTTOM.

GROUT NOTES:

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE OF THE CITY OF COLORADO SPRINGS STANDARD SPECIFICATIONS EXCEPT AS MODIFIED HEREIN.
2. ALL GROUT SHALL BE TYPE B WITH A MIN 28–DAY COMPRESSIVE STRENGTH EQUAL TO4500 PSI.
3. ONE CUBIC YARD OF GROUT SHALL HAVE A MIN OF SIX (6) SACKS OF TYPE II PORTLAND CEMENT.
4. THE AGGREGATE SHALL BE COMPRISED OF 314 INCH MAX GRAVEL, STRUCTURAL CONCRETE AGGREGATE.
5. THE GROUT SLUMP SHALL BE 4–INCHES TO 6–INCHES.
6. AIR ENTRAINMENT SHALL BE 5% TO 8%.
7. ADD 1.5 LBS PER CUBIC YARD BASF MASTER FIBER OR APPROVED EQUAL FIBER MESH SECONDARY REINFORCEMENT.
8. ALL GROUT SHALL BE DELIVERED BY MEANS OF A LOW PRESSURE (LESS THAN 10 PSI) CONCRETE PUMP USING A 3–INCH NOZZLE.
9. GROUT SHALL BE DELIVERED IN A CONTROLLED MANNER. AN "S" ATTACHMENT MAY BE REQUIRED
10. FULL DEPTH PENETRATION OF THE GROUT INTO THE BOULDER VOIDS SHALL BE ACHIEVED BY INJECTING GROUT STARTING WITH THE NOZZLE NEAR THE BOTTOM AND RAISING IT AS GROUT FILLS WHILE VIBRATING GROUT INTO PLACE USING A PENCIL VIBRATOR.
11. AFTER GROUT PLACEMENT, EXPOSED BOULDER FACES SHALL BE CLEANED AND PRESSURE WASHED.
12. ALL GROUT BETWEEN BOULDERS SHALL BE TREATED WITH BROOM FINISH.
13. SPECIAL PROCEDURES SHALL BE REQUIRED FOR GROUT PLACEMENT WHEN THE AIR TEMPERATURES ARE LESS THAN 40°F OR GREATER THAN 90°F. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER OF THE PROCEDURES TO BE USED FOR PROTECTING THE GROUT.

LANDSCAPE RESTORATION-SITE MAINTANENCE:

1. THE SITE WILL NEED TO BE MANAGED FOR WEEDS AFTER GERMINATION AND PRIOR TO WEED SEED MATURITY. AN EARLY SUMMER TO MID–SUMMER TREATMENT AND FALL TREATMENT IS MINIAMLLY NEEDED TO REDUCE COMPETITION. HAND POWER TOOLS AND MANUAL METHODS DURING NATIVE GRASS SEEDLING ESTABLISHMENT SHALL BE USED TO PROTECT DESIRABLE SPECIES. MOWING AND BAGGING WEED SEED HEADS IN THE FALL IS ACCEPTABLE.
2. SEEDING RATES: RATES ARE SPECIFIED IN PLS PER ACRE. THE SEED TAG SHOULD BE USED TO GUARANTEE THAT 60 LIVE SEEDS ARE APPLIED PER SQUARE FOOT.
3. SEEDLING DENSITY: AFTER GERMINATION A SUCCESSFUL PLANTING WILL HAVE 30–40 SEEDLINGS PER SQUARE FOOD.
4. NATIVE PLANT DENSITY: ONE YEAR AFTER SEEDING THE EXPECTED DENSITY OF DESIRABLE SPECIES IS EQUAL TO THE ADJACENT REFERENCE SITE. ON AVERAGE GRASS AND HERB SPECIES SHALL BE AT A DENSITY OF 8 PLANTS PER SQUARE FOOT AND/OR 70% COVER PER A POINT INTERCEPT SAMPLING METHODS.
5. SEASONAL RAINFALL AND MOISTURE CONDITIONS IMPACT SEEDING SUCCESS. CONTRACTOR SHALL INCLUDE PRICING FOR SUPPLEMENTAL WATERING, IF NEEDED. INCLUDE A DETAILED DESCRIPTION OF METHODS TO BE USED IN THE EVENT PRECIPITATION AND SOIL MOISTURE ARE NOT CONDUCIVE TO REACHING SEEDLING AND STAND DENSITY GOALS. IRRIGATION THROUGH PRESS

MULCHING:

1. APPLY AT A RATE OF 2 TONS PER ACRE. CRIMP IN PLACE. APPLY TACKIFIER OVER MULCHED AREAS AT A RATE OF 5 GALLONS PER 1,000 SQUARE FEET IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. MULCH SHALL BE APPLIED WHERE EROSION CONTROL BLANKET IS NOT USED. MULCHING SHALL ONLY BE UTILIZED WHEN RESTORING STAGING AREAS AND HAUL ROAD.
2. EROSION CONTROL BLANKET: INSTALL AS SHOWN ON PLANS. BLANKET SHALL BE NEOIA ENTERPRISES KOIR WRAP 1000 OR APPROVED EQUAL.

BACKFILL AND COMPACTION:

1. UNDISTURBED SUB–GRADE BENEATH THE GROUTED BOULDERS SHALL BE PREPARED PRIOR TO BOULDER PLACEMENT BY SCARIFYING THE TOP 8 INCHES, MOISTURE CONDITIONING, AND COMPACTING TO AT LEAST 92 PERCENT MODIFIED PROCTOR DENSITY (ASTM D–1557) AT A MOISTURE CONTENT THAT IS –2 PERCENT TO +2 PERCENT OF OPTIMUM OR TO A MINIMUM OF 95 PERCENT STANDARD PROCTOR DENSITY (ASTM D–1557) AT A MOISTURE CONTENT THAT IS –2 PERCENT TO +2 PERCENT OF OPTIMUM.
2. BEDROCK MATERIAL MAY NOT BE UTILIZED AS STRUCTURAL FILL OR CHANNEL BOTTOM FILL.
3. LOOSE ROCK THAT HAS BEEN DEPOSITED WITHIN THE PROJECT REACH MAY BE BURIED ON SITE, BUT MUST NOT BE PLACED ADJACENT TO BOULDERS, SOIL WRAPS, SOIL RIPRAP OR RIPRAP. ANY ROCK BURIED ON SITE MUST HAVE A MINIMUM OF 2' OF NATIVE MATERIAL PLACED OVER IT.

LANDSCAPE RESTORATION:

1. CONTRACTOR SHALL PREPARE THE SITE BY REMOVING WEED MATERIAL THROUGH MECHANICAL AND MANUAL METHODS.
2. NO FERTILIZERS SHALL BE APPLIED TO THE SEEDING AREA.
3. IF AMENDMENTS (SUCH AS COMPOST) ARE RECOMMENDED BY THE CONTRACTOR, A SOIL ANALYSIS OF NATIVE TOPSOIL SHALL BE SUBMITTED FOR EVALUATION BY THE COLORADO STATE UNIVERSITY EXTENSION AGENCY. RECOMMENDATIONS WILL BE BASED ON APPROPRIATE NUTRIENTS TO SUPPORT NATIVE GRASSES. RESULTS AND RECOMMENDATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO AMENDMENT APPLICATION.
4. SEEDING SHALL BE DRILL SEEDED WHERE POSSIBLE AND PRACTICAL.
5. BROADCAST SEEDING MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3(H):1(V) OR IN OTHER AREAS NOT PRACTICAL TO DRILL SEED. SEEDING RATES SHALL BE DOUBLED FOR BROADCAST METHODS.
6. CONTRACTOR SHALL USE A NATIVE SEED MIX PER THE PLAN SPECIFICATIONS. SEED VARIETIES SHALL BE CERTIFIED WEED FREE. A SEED TAG SHALL BE PROVIDED TO THE ENGINEER TO ENSURE VIABILITY AND CONFIRM PLS APPLICATION RATES.
7. RESTORATION SEEDING SHOULD TAKE PLACE IN THE FALL (SEPTEMBER–NOVEMEBER) OR SPRING (MARCH–MAY).
8. SEEDING RATES SHALL BE DOUBLE FOR BROADCAST SEEDING. BROADCAST SEED SHALL BE LIGHTLY HAND RAKED INTO THE SOIL. BROADCAST SEED SHALL BE RAKED OR HARROWED AT A MINIMUM 1/4" DEPTH TO ENSURE GOOD SEED TO SOIL CONTACT.
9. SEED SHALL NOT BE SOWN WHEN SOIL IS FROZEN.
10. THE MIXTURE SHALL CONSIST OF THE SPECIES AND RATES IN CONFORMANCE WITH THE CITY OF COLORADO SPRINGS STANDARDS AND SPECIFICATIONS.

EROSION CONTROL NOTES:

1. ANY LAND DISTURBANCE BY ANY OWNER, DEVELOPER, BUILDER, CONTRACTOR, OR OTHER PERSON SHALL COMPLY WITH THE BASIC GRADING, EROSION AND STORMWATER QUALITY CONTROL REQUIREMENTS AND GENERAL PROHIBITIONS NOTED IN THE DRAINAGE CRITERIA MANUAL VOLUME II.
2. NO CLEARING, GRADING, EXCAVATION, FILLING OR OTHER LAND DISTURBING ACTIVITIES SHALL BE PERMITTED UNTIL SIGNOFF AND ACCEPTANCE OF THE GRADING PLAN AND EROSION AND STORMWATER QUALITY CONTROL PLAN IS RECEIVED FROM CITY ENGINEERING.
3. THE INSTALLATION OF THE FIRST LEVEL OF TEMPORARY EROSION CONTROL FACILITIES AND BMP'S SHALL BE INSTALLED AND INSPECTED PRIOR TO ANY EARTH DISTURBANCE OPERATIONS TAKING PLACE. CALL CITY STORMWATER INSPECTIONS 48 HOURS PRIOR TO CONSTRUCTION.
4. SEDIMENT (MUD AND DIRT) TRANSPORTED ONTO A PUBLIC ROAD, REGARDLESS OF THE SIZE OF THE SITE, SHALL BE CLEANED AT THE END OF EACH DAY.
5. CONCRETE WASH WATER SHALL NOT BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
6. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN TWENTY–ONE (21) CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.
7. THE GRADING AND EROSION CONTROL PLAN WILL BE SUBJECT TO RE–REVIEW AND RE–ACCEPTANCE BY THE CITY OF COLORADO SPRINGS ENGINEERING SHOULD ANY OF THE FOLLOWING OCCUR: GRADING DOES NOT COMMENCE WITHIN 12 MONTHS OF THE CITY ENGINEER'S ACCEPTANCE OF THE PLAN, A CHANGE IN PROPERTY OWNERSHIP, PROPOSED DEVELOPMENT CHANGES, OR PROPOSED GRADING REVISIONS.
8. THE CONTRACTOR SHALL OBTAIN STATE AND CITY CONSTRUCTION ACTIVITY PERMITS AS REQUIRED AND SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THOSE PERMITS FOR STORMWATER DISCHARGE, THE STORMWATER MANAGEMENT PLAN, AND THE EROSION CONTROL PLAN.
9. DE–WATERING AND TEMPORARY EROSION CONTROL FOR CONSTRUCTION WITHIN THE STREAM BED SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL STATE, CITY, COUNTY, AND FEDERAL REGULATIONS.
10. ALL DISTURBED AREAS SHOULD BE PROTECTED AFTER FINAL SEEDING WITH MULCH AND/OR EROSION CONTROL BLANKETS AS SPECIFIED HEREIN.
11. GRAVEL FILTRATION PACKS SHALL BE USED AT ALL PUMPS.
12. EROSION AND SEDIMENT CONTROL STRUCTURES ARE TO BE INSPECTED AND MAINTAINED AFTER EVERY RUNOFF EVENT AND SHALL BE CONTINUOUSLY MAINTAINED.
13. THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND TRASH FROM PROJECT AREA.
14. THE QUANTITY OF MATERIALS STORED ON SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON–SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS. MATERIALS SHALL NOT BE STORED WITHIN THE CHANNEL LIMITS.
15. SPILL PREVENTION AND CONTAINMENT MEASURES SHALL BE USED AT STORAGE AND EQUIPMENT FUELING AND SERVICING AREAS TO PREVENT THE POLLUTION OF ANY STATE WATERS. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY OR CONTAINED UNTIL APPROPRIATE CLEANUP METHODS CAN BE EMPLOYED. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE FOLLOWED ALONG WITH PROPER DISPOSAL METHODS.

NOTE:

1. THIS IS A STANDARD DRAWING SHOWING COMMON NOTES. ALL NOTES ARE NOT NECESSARILY APPLICABLE TO THIS PROJECT.

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER S. BURKE
DESIGNED BY BES
DRAWN BY MGP
CHECKED BY BES
PROJECT NUMBER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

CITY OF COLORADO SPRINGS
PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

DELMONICO STORM SEWER REPLACEMENT PROJECT

PROJECT CONSTRUCTION NOTES

SCALE
HORZ: –
VERT: –

ISSUE DATE
10/30/15

SHEET
G003

SUMMARY OF QUANTITIES

PROJECT FILLIN AN LOCATION

CDOT ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNITS
202-00019	REMOVAL OF INLET	1	EA
202-00035	REMOVAL OF PIPE	1855	LF
202-00200	REMOVAL OF SIDEWALK	19	SY
202-00203	REMOVAL OF CURB AND GUTTER	160	LF
202-00220	REMOVAL OF ASPHALT MAT	1875	SY
208-10000	EROSION CONTROL	1	LS
212-00006	SEEDING (NATIVE)	0.22	AC
400-00000	ASPHALT CONCRETE PAVEMENT	1875	SY
500-01040	CONCRETE SIDEWALK	19	SY
506-00212	RIPRAP (12 INCH)	8	CY
603-50018	18 INCH PLASTIC PIPE (PE) (COMPLETE IN PLACE)	179	LF
603-50024	24 INCH PLASTIC PIPE (PE) (COMPLETE IN PLACE)	612	LF
603-50030	30 INCH PLASTIC PIPE (PE) (COMPLETE IN PLACE)	558	LF
603-50036	36 INCH PLASTIC PIPE (PE) (COMPLETE IN PLACE)	517	LF
604-19006	6' INLET TYPE D-10-R	1	EA
604-33204	MANHOLE (CITY TYPE 2) (4' DIAMETER)	3	EA
604-33206	MANHOLE (CITY TYPE 2) (6' DIAMETER)	1	EA
609-31100	CONCRETE CURB AND GUTTER (CITY TYPE 1)	160	LF
614-00000	TRAFFIC CONTROL	1	LS
621-04000	DEWATERING	1	LS
626-00005	MOBILIZATION	1	LS

QUANTITIES LEGEND:

AC = ACRES
CY = CUBIC YARDS
EA = EACH
LF = LINEAL FEET
LS = LUMP SUM
SY = SQUARE YARDS

Peak Resource conservation

BID SET
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER S. BURKE
DESIGNED BY BES
DRAWN BY MGP
CHECKED BY BES
PROJECT NUMBER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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CITY OF COLORADO SPRINGS
PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

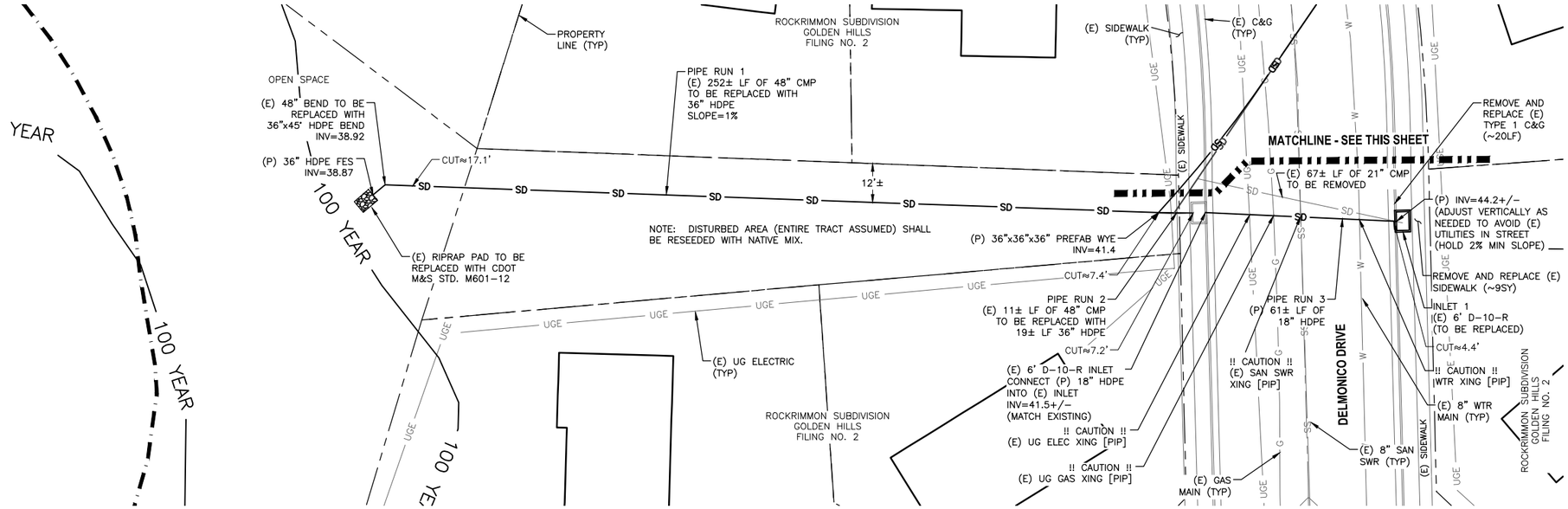
DELMONICO STORM SEWER REPLACEMENT PROJECT

SUMMARY OF QUANTITIES

SCALE
HORZ: –
VERT: –

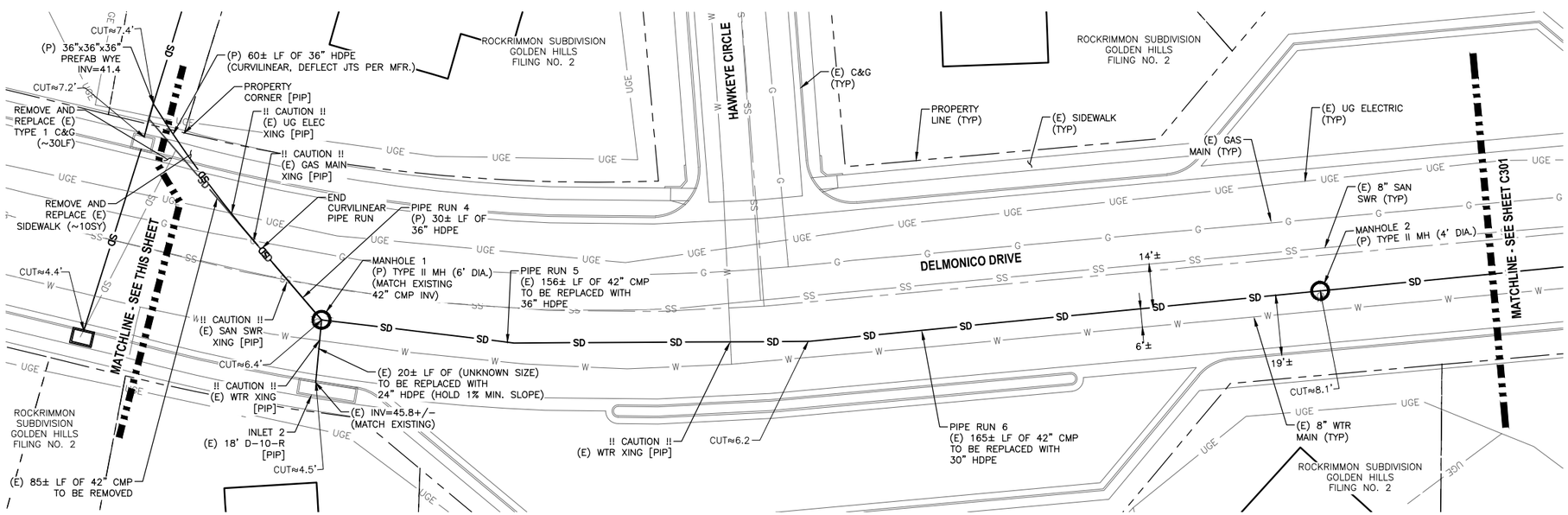
ISSUE DATE
10/30/15

SHEET
G004
5 OF 9 SHEETS



STORM - PLAN VIEW

SCALE: 1"=20'



STORM - PLAN VIEW

SCALE: 1"=20'

NOTE:

1. THE LOCATION OF ALL UTILITIES ARE SOURCED FROM FIMS GIS DATA AND ONLY REPRESENT APPROXIMATE LOCATION. ALL LOCATIONS OF EXISTING UTILITIES, INCLUDING LOCATIONS OF DRAINAGE STRUCTURES, SHALL BE FIELD VERIFIED PRIOR TO BEGINNING OF CONSTRUCTION.
2. "CUT' DEPTH VALUE FROM FINISHED GRADE TO PIPE INVERT (PER CITY ENGINEERING RECORD PLANS).

Call before you dig.

20 0 10 20 40

HORIZ. SCALE: 1"=20'

Peak Resource conservation

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER	S. BURKE
DESIGNED BY	BES
DRAWN BY	MGP
CHECKED BY	BES
PROJECT NUMBER	

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PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

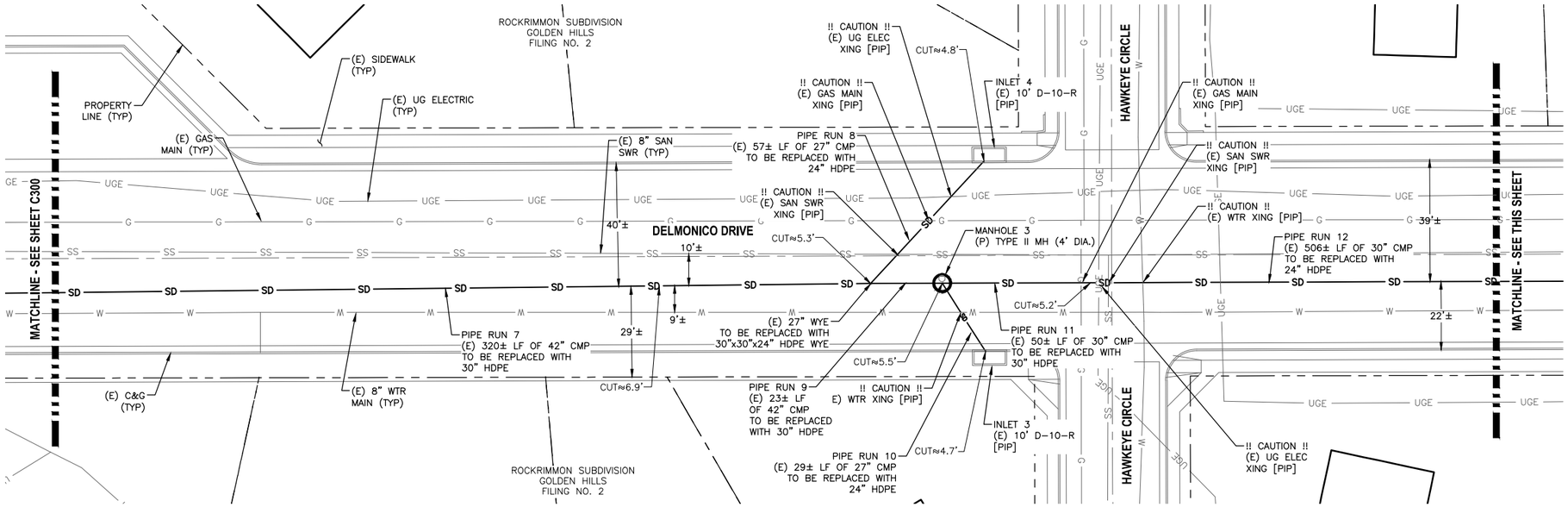
DELMONICO STORM SEWER REPLACEMENT PROJECT

STORM SEWER PLAN

SCALE
HORZ: 1"=20'
VERT: –

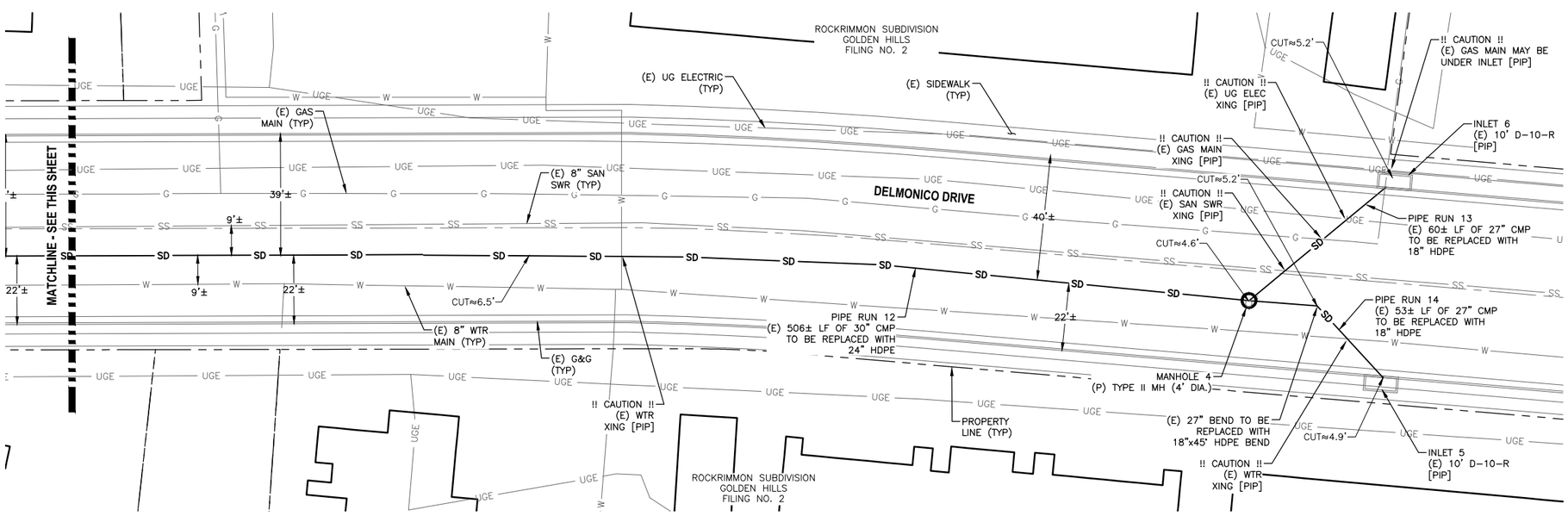
ISSUE DATE
10/30/15

SHEET
C300
6 OF 9 SHEETS



STORM - PLAN VIEW

SCALE: 1"=20'



STORM - PLAN VIEW

SCALE: 1"=20'

NOTE:

1. THE LOCATION OF ALL UTILITIES ARE SOURCED FROM FIMS GIS DATA AND ONLY REPRESENT APPROXIMATE LOCATION. ALL LOCATIONS OF EXISTING UTILITIES, INCLUDING LOCATIONS OF DRAINAGE STRUCTURES, SHALL BE FIELD VERIFIED PRIOR TO BEGINNING OF CONSTRUCTION.
2. "CUT' DEPTH VALUE FROM FINISHED GRADE TO PIPE INVERT (PER CITY ENGINEERING RECORD PLANS).

811 Call before you dig.

20 0 10 20 40

HORIZ. SCALE: 1"=20'

Peak Resource conservation

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER	S. BURKE
DESIGNED BY	BES
DRAWN BY	MGP
CHECKED BY	BES
PROJECT NUMBER	

VERIFY SCALES
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CITY OF COLORADO SPRINGS
PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

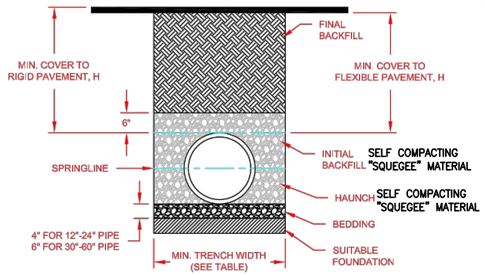
DELMONICO STORM SEWER REPLACEMENT PROJECT

STORM SEWER PLAN

SCALE
HORZ: 1"=20'
VERT: –

ISSUE DATE
10/30/15

SHEET
C301



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
2	ADDED E-80 INFORMATION	TJR	08/20/07	

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

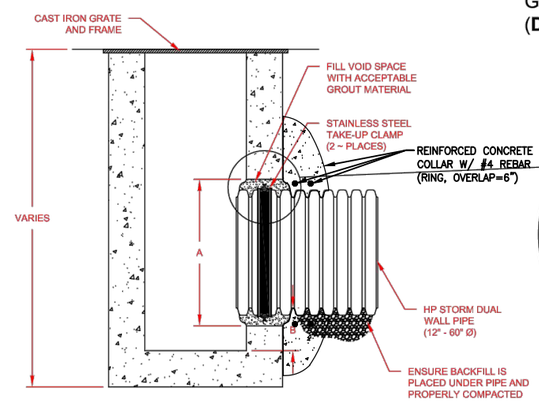
TYPICAL TRENCH DETAIL
DRAWING NUMBER: STD-101

ADS ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026

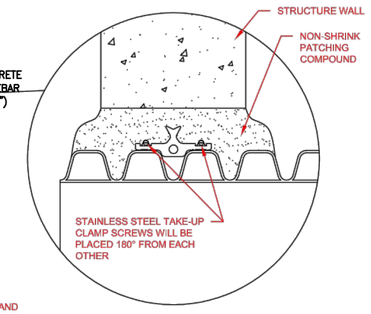
DRAWN BY: CKS
DATE: 10/18/06
DES'D BY:
SCALE: NTS
SHEET: 1 OF 1

12"-60" HP STORM WATERSTOP GROUTED MANHOLE CONNECTION (DUAL WALL)

INSTALLATION VIEW



DETAILED CONNECTION VIEW



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE Ø (IN)	"B" MIN. DISTANCE FROM PIPE INVERT TO STRUCTURE INVERT (IN)	ADS PRODUCT CODE
12	14.5	19.50	3.7	1202PS
15	17.6	23.00	4.0	1502PS
18	21.2	26.50	4.2	1802PS
21	24.8	30.25	4.5	2102PS
24	27.8	33.25	4.5	2402PS
30	35.1	40.50	5.2	3002PS
36	41.1	47.00	5.5	3602PS
42	47.7	53.00	5.7	4202PS
48	53.6	59.00	5.7	4802PS
60	66.3	72.00	6.4	6002PS

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST ENSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN INSTALLATION GUIDE 1.05: WATERSTOP INSTALLATION

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
2	ADDED 21" DATA	SL	10/07/15	

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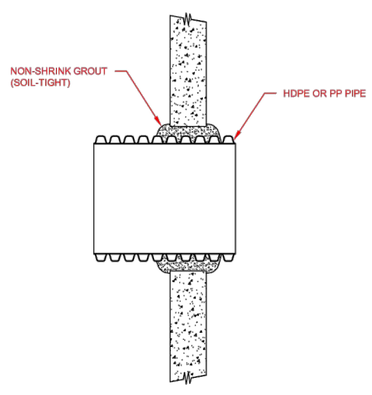
WATERSTOP STRUCTURE 12"-60" HP STORM DETAIL
DRAWING NUMBER: STD-206A

ADS ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026

DRAWN BY: JAB
DATE: 4/3/09
DES'D BY:
SCALE: NTS
SHEET: 1 OF 1

HDPE OR PP SOILTIGHT GROUTED MANHOLE CONNECTION



NOTES:
SEE STANDARD DETAIL STD-201 AND TECHNICAL NOTE: 5.04 CONNECTIONS TO MANHOLES AND STRUCTURES FOR INSTALLATION RECOMMENDATIONS.

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
4	UPDATED DRAWING	SL	10/7/14	

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SOIL-TIGHT STRUCTURE HDPE OR PP DETAIL
DRAWING NUMBER: STD-202A

ADS ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026

DRAWN BY: BRV
DATE: 9/15/06
DES'D BY:
SCALE: NTS
SHEET: 1 OF 1

NOTE:

1. REFER TO CITY STD. DETAIL DRAWINGS FOR ADDITIONAL INFORMATION. 1ST SHEET OF STD DETAILS SHOWN ONLY FOR EACH STRUCTURE.

BID SET
NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER: S. BURKE
DESIGNED BY: BES
DRAWN BY: MGP
CHECKED BY: BES
PROJECT NUMBER: XXXX

VERIFY SCALES
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PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

DELMONICO STORM SEWER REPLACEMNET PROJECT

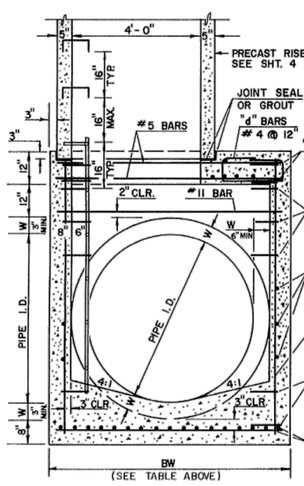
PROJECT SPECIFIC DETAILS

SCALE
HORZ: N.T.S.
VERT: –

ISSUE DATE
10/30/15

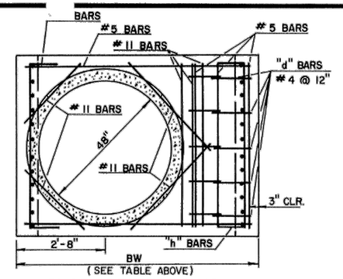
SHEET
C400
8 OF 9 SHEETS

PIPE I.D.	BW
48" AND SMALLER	6'-4"
54"	6'-10"
60" AND LARGER	O.D. + 16"



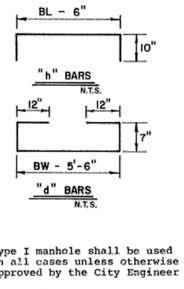
SECTION VIEW

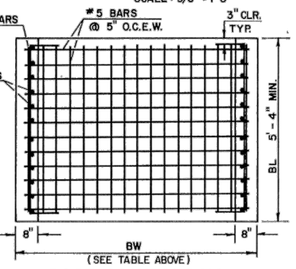
SCALE: 3/8" = 1'-0"



SLAB REINFORCING

SCALE: 3/8" = 1'-0"





BASE REINFORCING

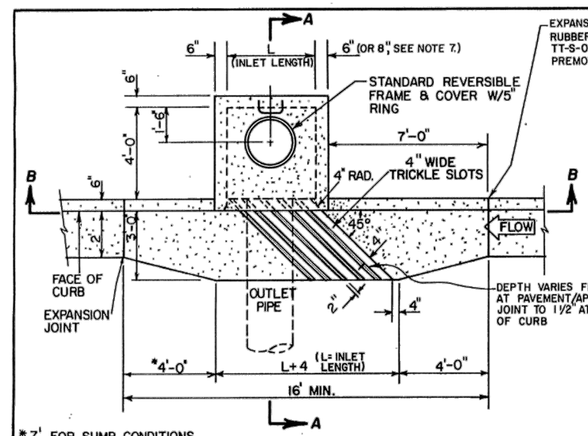
SCALE: 3/8" = 1'-0"

NOTES

1. Type I manhole shall be used in all cases unless otherwise approved by the City Engineer
2. View and Details shown are typical for straight through design only. Design Engineer shall determine manhole base configuration and dimensions for particular pipe sizes and alignment.
3. Either ladder or steps shall be installed when manhole depth exceeds 30". Lowest step shall be a maximum of 16" above the floor.
4. Floor of the manhole shall be trowelled to a smooth, hard surface and shall slope towards the outlet (8:1 max., 1/2" per ft. min.). Floor shall be shaped and channelled; see sheet 2 for typical channel details.

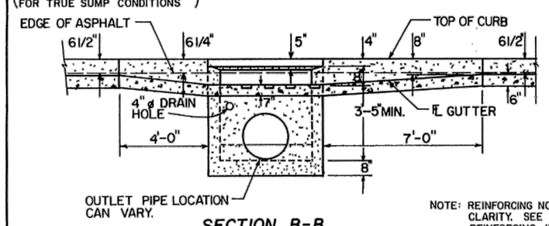
TYPE I BASE MANHOLE

CITY OF COLORADO SPRINGS			
STORM SEWER MANHOLE-TYPE I			
APPROVED BY Gary R. Haynes CITY ENGINEER			
SCALE: AS SHOWN	DATE: JAN. 89	DRAWN: P.L.B.	SHEET: D-20A 1 OF 4



PLAN VIEW

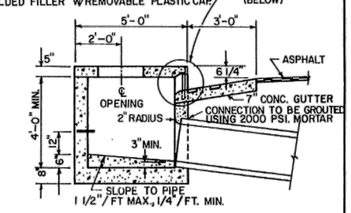
*7' FOR SUMP CONDITIONS (CENTERED ON INLET) (TRICKLE SLOTS MAY BE OMITTED FOR TRUE SUMP CONDITIONS)



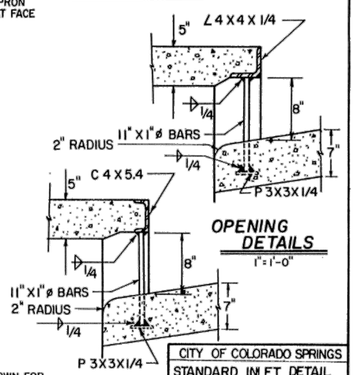
SECTION B-B

NOTE: REINFORCING NOT SHOWN FOR CLARITY. SEE SHT. 2 OF 3 FOR REINFORCING DETAILS.

EXPANSION JOINT (TYP.) USE 1/2" POLYURETHANE RUBBER SEALANT (FEDERAL SPECIFICATION TT-S-00227E, CLASS A, TYPE II) AND 1/2" PREMOLDED FILLER W/REMOVABLE PLASTIC CAP.



SECTION A-A

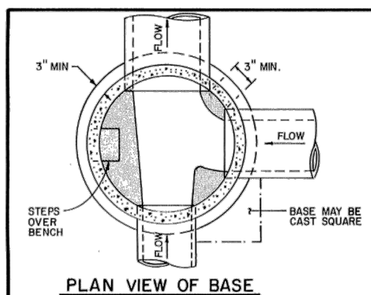


OPENING DETAILS

1" = 1'-0"

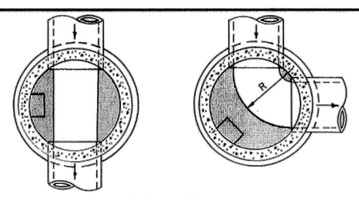
CITY OF COLORADO SPRINGS			
STANDARD INLET DETAIL			
APPROVED BY: CITY ENGINEER			
SCALE: 1/4" = 1'-0"	DATE: 10-86	DRAWN:	D-10-8 SHT. 1 OF 3

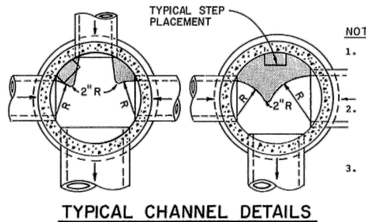
REVISED 3/93 J2 AP



PLAN VIEW OF BASE

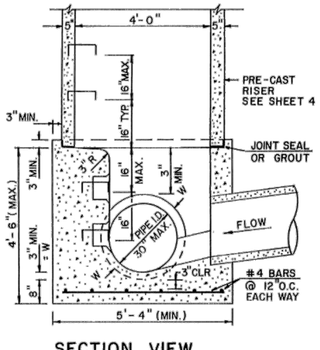
SCALE 3/8" = 1'-0"





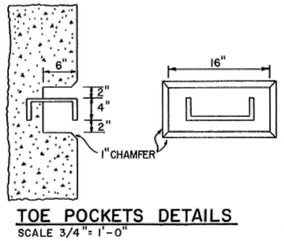
TYPICAL CHANNEL DETAILS

SCALE 1/4" = 1'-0"



SECTION VIEW

SCALE 3/8" = 1'-0"



TOE POCKETS DETAILS

SCALE 3/4" = 1'-0"

NOTES

1. Type II manholes shall be used only with approval of the City Engineer and only when the pipe sizes are 30" or less inside diameter.
2. View and Details are typical. Design Engineer shall determine manhole base configuration and dimensions for particular pipe sizes and alignment.
3. Either ladder or steps shall be installed when manhole depth exceeds 30". Steps in base shall be installed in "toe pockets" (see detail this sheet). Lowest step shall be a maximum of 16" above the floor.
4. Pipes shall be trimmed to final shape and set before manhole is poured.
5. Bench shall be sloped toward center of manhole base (4:1 max., 1/2" per ft. min.).
6. Floor of manhole shall be trowelled to a smooth, hard surface and shall slope towards the outlet (8:1 max., 1/2" per ft. min.). Floor shall be shaped and channelled; see details this sheet.

CITY OF COLORADO SPRINGS			
STORM SEWER MANHOLE-TYPE II			
APPROVED BY Gary R. Haynes CITY ENGINEER			
SCALE: AS SHOWN	DATE: JAN. 89	DRAWN: P.L.B.	SHEET: D-20B OF 4

NOTE:

1. REFER TO CITY STD. DETAIL DRAWINGS FOR ADDITIONAL INFORMATION. 1ST SHEET OF STD DETAILS SHOWN ONLY FOR EACH STRUCTURE.

BID SET

NOT FOR CONSTRUCTION

NO.	REVISION	BY	DATE

PROJECT MANAGER	S. BURKE
DESIGNED BY	BES
DRAWN BY	MGP
CHECKED BY	BES
PROJECT NUMBER	XXXX

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

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PUBLIC WORKS / CITY ENGINEERING
PO BOX 1575, MAIL CODE 410
30 S. NEVADA AVE., SUITE 401
COLORADO SPRINGS, CO 80903

DELMONICO STORM SEWER REPLACEMNET PROJECT

CITY STANDARD DETAILS

SCALE
HORZ: N.T.S.
VERT: –

ISSUE DATE
10/30/15

SHEET
C500
9 OF 9 SHEETS