



Contract Change Orders (CCOs)



Contract Change Orders: Objectives



Be able to ...

- Understand the purpose of a CCO
- Determine if the CCO is within the scope of your contract
- Write a CCO
- Determine appropriate method of payment
- Write a CCO memorandum



Contract Change Orders: Definition



A CCO is...

**A legally binding document used to
make changes to the contract.**



Contract Change Orders: Purpose



Reasons for writing CCOs?

- Change plans/specifications
- Add work

LAPM 16.13 Contract Change Orders

1



Contract Change Orders: Purpose



Reasons for writing CCOs? (cont'd)

- Specify method of payment for contract stipulated extra work
- Authorize additional funds for existing CCO
- Adjust item payment (+/- 25%)

CM 5-303 Purpose of Contract Change Orders



Contract Change Orders: Purpose



Reasons for writing CCOs? (cont'd)

- Implement a value engineering change
- Clarify terms of the contract
- Resolve disputes/potential claims prior to the proposed final estimate

CM 5-303 Purpose of Contract Change Orders



Contract Change Orders: Initiation



Who initiates the CCO?

- RE
- Contractor
- Other Agency Units
- Outside Agencies
- Others?

CM 5-304 Initiation of Contract Change Orders



Contract Change Orders: Scope



**Is proposed change within
the project scope?**



Contract Change Orders: Scope



Within the project scope?

- Significantly different from other contract work?
- Necessary to mobilize specialized forces and equipment?
- Over the approved contract allotment?
- Significant deletion to the original contract?
- Outside the approved contract limits?



Contract Change Orders: Preliminary Considerations



- Is the proposed work already covered in the contract?
- Is CCO necessary to complete the work as contemplated at PS&E approval?
- Are there sufficient contingency funds?
- Can additional funds be obtained soon enough to prevent delays?

CM 5-305 Preliminary Considerations



Contract Change Orders: Preliminary Considerations



- What is the overall impact on the planned work?
- Will it cause a work character change?
- Will the contract time be affected?
- What methods of payment should be used?
- How will any adjustments of compensation be determined?

CM 5-305 Preliminary Considerations



Contract Change Orders: Preliminary Considerations



Does CCO impact your environmental documents?

Contact Caltrans *if change may affect:*

- permit conditions,
- environmental mitigation commitments, or
- introduction of new social, environmental, or economic issues that need to be addressed under applicable federal, state, or local law

LAPM 16.10 Contract Change Orders



Contract Change Orders: Writing the CCO



CCO describes the :

- Changes or added (extra) **work**
- **Payment** basis
- **Time** adjustment

CM 5-306 Contract Change Order Content



Contract Change Orders: Writing the CCO



Clear, concise, explicit.

- Describe the changes and extra work
- Detail location and limits of proposed work
- PE Stamp, sign and date *Engineering* plans, specs, calculations and reports
- Include specs or spec changes

CM 5-306 Contract Change Order Content



Contract Change Orders: Specifications



Include specifications in the CCO?

- Increases in **contract bid item**: **No**
- **Extra Work** (AP or FA): **Yes**, include the specifications directly or by reference

The contractor must complete extra work exactly as it is specified in the CCO.

CM 5-306A Specifications



CM Example 5-3.10B

**Item Quantities (Work-
Character Change
Payment Adjustment and
Extra Work at Force
Account)**

(Handout Pgs. 1-2)

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Contract Change Orders: Examples

CM Example 5-3.10B Item Quantities (Work- Character Change Payment Adjustment and Extra Work at Force Account) (Handout Pgs. 1-2)

Example 5-3.10B. Work Character Change/Payment Adjustment and Extra Work Force Account

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

CHANGE ORDER

CEM-4900 (REV 2/2014)

Sheet 2 of 2

CHANGE ORDER NO.	SUPL. NUMBER	CONTRACT NUMBER	CO-RTE-PM	FEDERAL NUMBER(S)
10B				

For this work, the contractor is compensated \$1,320.00. This sum constitutes full and complete compensation, for providing all labor, materials, equipment, tools, and incidentals, including all markups for this change.

Extra Work at Agreed Lump Sum = \$1,320.00

Based on a time impact analysis, this change delays the controlling activity by 2 days. A time adjustment of 2 working days is granted.

Estimated Cost: <input checked="" type="checkbox"/> Increase <input type="checkbox"/> Decrease \$ 313.50		
For this order, the time of completion will be adjusted as follows: 2 working days		
SUBMITTED BY		
SIGNATURE	(PRINT NAME AND TITLE)	DATE
APPROVAL RECOMMENDED BY		
SIGNATURE	(PRINT NAME AND TITLE)	DATE
ENGINEER APPROVAL BY		
SIGNATURE	(PRINT NAME AND TITLE)	DATE
We, the undersigned contractor, have given careful consideration to the change proposed and agree to provide equipment, furnish materials, and perform the work specified above, and will accept as full payment the prices shown above. NOTE: If you do not sign this order, you are directed to proceed with the ordered work. You may file a Request for Information within the time specified.		
CONTRACTOR ACCEPTANCE BY		
SIGNATURE	(PRINT NAME AND TITLE)	DATE



Contract Change Orders: Method of Payment



Order of preference:

1. Contract items at contract unit prices
2. Contract items at contract prices *with an adjustment in compensation*
3. Extra work at agreed unit price or lump sum
4. Extra work at force account

**One or a combination of the
above methods.**

CM 5-302A Contract Change Order Payment
CTSS 9-1.03, Payment Scope



Contract Change Orders: Method of Payment



Not extra work if it can be paid for by:

- A contract item,
- A combination of contract items, or
- A contract item with an adjustment in compensation

CM 5-306C Methods of Payment



Contract Change Orders: Method of Payment



Increases in Bid Items at Bid Item Prices:

At station 782 + 32, perform excavation and backfill for the reinforced concrete box culvert shown on sheet 3 of 3 of this change order.

Item No. 43 | , Structure Excavation: 220 CF (7 %) @ \$8.83/CF = \$ 1,942.60 (+18 %)

Item No. 44 | , Structure Backfill: 250 CF (3%) @ \$18.85/CF = \$ 4,712.50 (+11 %)

Increases in Bid Items at Bid Item Prices = \$ 6,655.10

CM 5-306C Methods of Payment



Contract Change Orders: Method of Payment



Extra work at agreed prices

- Agreed Unit Price
- Agreed Lump Sum

Contractor must *agree!*

CM 5-306C Methods of Payment



Contract Change Orders: Method of Payment



Agreed price documentation:

- Must perform an **independent** force account cost estimate:
 - Performed by the agency *independently* of Contractor
 - Supports the agreed price in the CCO
 - Signed and dated by Calculator
 - Signed and dated by *Checker*
 - Filed



Contract Change Orders: Method of Payment



**Agreed price
documentation:
Force Account Style
Cost Estimate
(Handout 3)**

Estimate of cost saving to the Contractor to use an Inertial Profiler in lieu of the California Profilograph called for in the contract. (CCO 7)					
Assume Inertial Profiler will perform the work in 1/2 day with one operator and no lane closures. Assume the CA Profilograph would have used 1 operator and taken 3 days. Cost Savings will be:					
1. Cost savings of 3 days of CA Profilograph vs 1/2 day Inertial Profiler (Operator and Equip.)					
<u>Operator Savings:</u>					
Operator Rate = \$59.85/hr. x 1.12 (labor surcharge) x 1.35 (labor Markup) = \$ 90.49/hr					
Hours saved = 3 days (work as orig planned) - 0.5 days (work per CCO) = 2.5 days saved.					
Operator Cost Savings = \$90.49/hr x 8 hr/day x 2.5 days saved =					\$1,809.86
<u>Equipment Savings:</u>					
(Cost to use CA Profilograph for 3 days - cost to use Inertial Profiler for 1/2 day.)					
CA Profilograph Cox CS 8500 \$15.81/hr x 1.15 (Equip. Markup) x 8 hr x 3 days =					\$436.36
Inertial Profiler CS9100 Mid \$18.44/hr x 1.15 (Equip. Markup) x 4 hr x 1 day =					\$84.83
<u>Equipment Savings:</u>					
2. The savings for elimination of 3 days of traffic control lane closures.					
<u>Labor Savings:</u>					
Laborer Rate = \$45.28/hr x 1.12 (labor surcharge) x 1.35 (labor Markup) = \$ 68.4					
Laborer Costs Savings = \$68.46/hr x 2 laborers x 8 hr x 3 days =					\$3,286.08
<u>Equipment Saving:</u>					
Equipment	rate	Qty	per hr/d	hrs (days)	cost
Truck (12-20)	\$32.90	1	hr	8	\$263.20
Truck Arrow	\$0.78	1	hr	8	\$6.24
Arrowboard	\$3.33	1	hr	8	\$26.64
Cones(100)	\$7.77	1	day	1	\$7.77
3 Signs	\$2.48	3	day	1	\$7.44
Beacon	\$5.48	1	day	1	\$5.48
Daily Equipment Rate					\$316.77
\$316.77 (Daily Equip rate) x 1.15 (Equip. Markup) x 3 days (traffic control days) =					\$1,092.86
Total Credit to Agency					\$6,709.99
Calculated by: <u>Jot Engineer, 2/18/2013</u>					
Checked by: <u>Jane Engineer, 2/20/2013</u>					





Contract Change Orders: Method of Payment



Extra Work at Force Account

Use when:

- The work cannot be estimated within reasonable limits of accuracy
- The RE and contractor are unable to *agree* on an agreed price
- When the work is urgent/time sensitive

CM 5-306C Methods of Payment



Contract Change Orders: Method of Payment



If a work-character change has occurred:

1. Determine a correct and equitable adjustment in compensation *to the contract item unit price*
2. **Last resort!** – Delete the entire contract item, or the portion of it affected by the change, and pay for the entire work as extra work

CM 5-302A Contract Change Order Payment
CTSS 4-1.05B Changes in Character of Work



Contract Change Orders: Time Extensions/Reductions



Add contract time in a CCO?

- CCO must affect the scheduled completion date
 - contractor submits a Time Impact Analysis (TIA)
- If CCO work **affects the controlling activity** on the critical path, there *may* be basis for a time adjustment.
- The Department grants a time extension only if the **total float is absorbed** and the **scheduled completion date** is delayed 1 or more working days.

CTSS 8-1.02D(8)(c) Ordered Changes
CM 5-306 Contract Change Order Content



Contract Change Orders: Deferred Time Adjustment



- Can't determine / agree on an adjustment of time
- Determine time adjustment ASA work is completed
- Unilaterally approve the supplemental CCO if you still cannot agree

LAPM 16.10 Contract Change Orders
CM 5-306D Adjustment to Time of Completion



Contract Change Orders: Time Adjustment Documentation

- File TIA used to support CCO time adjustment.
- No supporting documentation
 - = loss of federal funds
 - = number unsupported days given x LDs(\$)

LAPM 16.10 Contract Change Orders
CM 5-306D Adjustment to Time of Completion



Contract Change Orders: Resources



CT Construction Manual!

Chapter 5 Contract Administration

Section 3 Change Orders

- **CM 5-306E Contract Change Order Standard Clauses**
- **CM 5-315 Examples of Contract Change Orders**



Contract Change Orders: Sample Clauses



Situation 2:

Adjustment for Increase in Quantities in Excess of 25 Percent of the Quantities Shown on the Bid Item List

Standard Clause for Situation 2:

Payment adjustment in accordance with Section 9-1.06B, “Increases of More Than 25 Percent,” of the *Standard Specifications*:

The following adjustment(s) will be made for units of work in excess of 125 percent of the quantities shown on the bid item list:

[List the bid(s), unit adjustments, quantities, and total item adjustment(s).]

**CM 5-306E Change Order Standard Clauses
(Handout Pgs. 4-8)**



Contract Change Orders: Sample Clauses



Situation 9:

Extra Work or Payment Adjustment at Agreed Unit Price

Standard Clause for Situation 9:

For this work, the contractor shall receive and accept \$ ____ per [*unit*] of [*pipe, fence, among other items*]. This sum constitutes full and complete compensation for furnishing all labor, material, equipment, tools, and incidentals including all markups by reason of this change.

**CM 5-306E Change Order Standard Clauses
(Handout Pgs. 4-8)**



Contract Change Orders: Examples



CM 5-315 Examples of Change Orders:

(Handout Pg. 9)



Contract Change Orders: Memorandum



What is the CCO Memorandum?

- Internal document
- Explains the scope and reasons for the change
- Provides justification for the work
- Supports reasonableness of the compensation
 - Money
 - Time

CM 5-307 Contract Change Order Memorandum



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION				Page <u>1</u> of <u>1</u>	
CHANGE ORDER MEMORANDUM				DATE _____	
CEM-4903 (REV 2/2014)					
TO _____			FILE _____		
FROM _____			CONTRACT NO. _____		
			CO-RTS-PM _____		
			FED NO. _____		
CHANGE ORDER NO. 10B	SUPPLEMENT NO.	CATEGORY CODE CCPX	CONTINGENCY BALANCE (Including this change) \$ _____		
CHANGE ORDER AMOUNT \$ 313.50 <input checked="" type="checkbox"/> INCREASE <input type="checkbox"/> DECREASE			HEADQUARTERS APPROVAL REQUIRED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
SUPPLEMENTAL FUNDS PROVIDED \$ _____			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input type="checkbox"/> YES <input type="checkbox"/> NO		
ORIGINAL CONTRACT TIME: _____ DAY(S)	TIME ADJUSTMENT THIS CHANGE: _____ 2 _____ DAY(S)	PREVIOUSLY APPROVED TIME ADJUSTMENTS: _____ DAY(S)	PERCENTAGE TIME ADJUSTED (Including this change) _____ %	TOTAL # OF UNRECONCILED DEFERRED TIME (Including this change) _____	
THIS CHANGE ORDER PROVIDES FOR (Use additional pages as needed):					
This Change Order Provides for:					
1. Installing two additional sections of each type of HMA Dike (Type A and Type C). After consulting with the project engineer, it was confirmed these four sections of cut slope dike were accidentally omitted from the project plans. This work will be paid by increasing the respective bid item quantity.					
2. Adding three sections of HMA Dike (Type F). After consulting the project engineer, it was confirmed the mountable dike was not included in the project plans. This work will be paid as extra work at agreed unit price since there is no applicable bid item.					
3. Deleting four sections of planned HMA Dike (Type E). Dike at these locations is not necessary because they are located on the high side of the roadway super. This deletion will be credited by decreasing the bid item quantity.					
4. Adding three HMA overside drains with rock energy dissipaters. For each section of added HMA Dike (Type F), an overside drain at their respective low point is necessary to transfer water from the dike to the adjacent ditch. This work will be paid as extra work at agreed lump sum since there are no applicable bid items.					
The project engineer, project manager, and construction engineer concur with this change.					
Cost information and a force account analysis supporting the unit price and lump sum for the respective extra work are on file in the project records.					
This change will affect the controlling activity by 2 days. A time adjustment of 2 working days is granted.					
CONCURRED BY:			ESTIMATE OF COST		
CONSTRUCTION ENGINEER/BRIDGE ENGINEER	DATE		THIS REQUEST (\$1,186.50)	TOTAL TO DATE (\$1,186.50)	
PROJECT ENGINEER	DATE		FORCE ACCOUNT		
PROJECT MANAGER	DATE		AGREED PRICE \$1,500.00	\$1,500.00	
FHWA REP.	DATE		ADJUSTMENT		
ENVIRONMENTAL	DATE		TOTAL \$313.50	\$313.50	
OTHER (SPECIFY)	DATE		FEDERAL PARTICIPATION		
	DATE		<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (Maintenance) <input type="checkbox"/> NON-PARTICIPATING		
HQ OR DISTRICT PRIOR APPROVAL BY	DATE		FEDERAL SEGREGATION (If more than one funding source or P.I.P. type)		
RESIDENT ENGINEER SIGNATURE	DATE		<input type="checkbox"/> CHANGE ORDER FUNDED PER CONTRACT <input type="checkbox"/> CHANGE ORDER FUNDED AS FOLLOWS <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">FEDERAL FUNDING SOURCE</div> <div style="width: 45%;">PERCENT</div> </div>		



Contract Change Orders: Memorandum



Include:

- Summary line or two of what the change order provides
- Why the change is needed

CM 5-307 Contract Change Order Memorandum



Contract Change Orders: Memorandum



Include:

- Why the particular method of payment was chosen.
- State the method used in making the cost analysis
- Include the cost analysis in the files

CM 5-307 Contract Change Order Memorandum



Contract Change Orders: Memorandum



Include:

- Justification for **contract time adjustment**:
 - State controlling operation during the delay period
 - Indicate the specific calendar or working days represented by the time extension (if work done)
 - Note that TIA is on file

CTSS 8-1.07B

Green Book 6-4.2 Extensions of Time



Contract Change Orders: Memorandum



Include:

- Who requested the change
- Names and dates of concurrences obtained
- Explanation of any concurrences not obtained

CM 5-307 Contract Change Order Memorandum



Contract Change Orders: Memorandum



If ...

- **Work character change** results from CCO, explain why
- CCO was **unilaterally approved**, explain why

CM 5-307 Contract Change Order Memorandum



Contract Change Orders: Federal Funding Participation



- Indicate on the Memorandum:
 - Federal fund participation,
 - Participation in part, or
 - Nonparticipation

***Don't use nonparticipation to
circumvent federal requirements.***

LAPM 16.10 Contract Change Orders



Contract Change Orders: Nonparticipating Items



FHWA List of Frequently Encountered Non-Federal
Participating Items
(Handout Pgs. 11-12)

LAPM 16.10 Contract Change Orders



Contract Change Orders: Poll





Contract Change Orders: Poll



True or False

CCO payment method order of preference:

- 1. Contract items at contract unit prices**
- 2. Contract items at contract prices with an adjustment in compensation**
- 3. Extra work at agreed unit price or lump sum**
- 4. Extra work at force account**



Contract Change Orders: Poll



True or False

CCO payment method order of preference:

- 1. Contract items at contract unit prices**
- 2. Contract items at contract prices with an adjustment in compensation**
- 3. Extra work at agreed unit price or lump sum**
- 4. Extra work at force account**

True



Contract Change Orders: Poll





Contract Change Orders: Quiz



Which of the following is not a reason to write a change order:

- a. To change contract plans/specifications**
- b. To describe the extra work and method of payment for extra work**
- c. To make adjustments in compensation**
- d. To implement the contractor's cost reduction proposal to eliminate the project environmental documents**



Contract Change Orders: Quiz



Which of the following is not a reason to write a change order:

- a. To change contract plans/specifications**
- b. To describe the extra work and method of payment for extra work**
- c. To make adjustments in compensation**
- d. To implement the contractor's cost reduction proposal to eliminate the project environmental documents**



Contract Change Orders: Quiz





Contract Change Orders: Quiz



True or False

Only use the extra work at force account method of payment under the following conditions:

- **When the work cannot be estimated within reasonable limits of accuracy**
- **When the resident engineer and the contractor are unable to agree on a unit or lump sum price for the work**



Contract Change Orders: Quiz



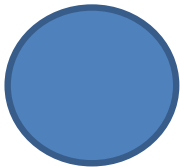
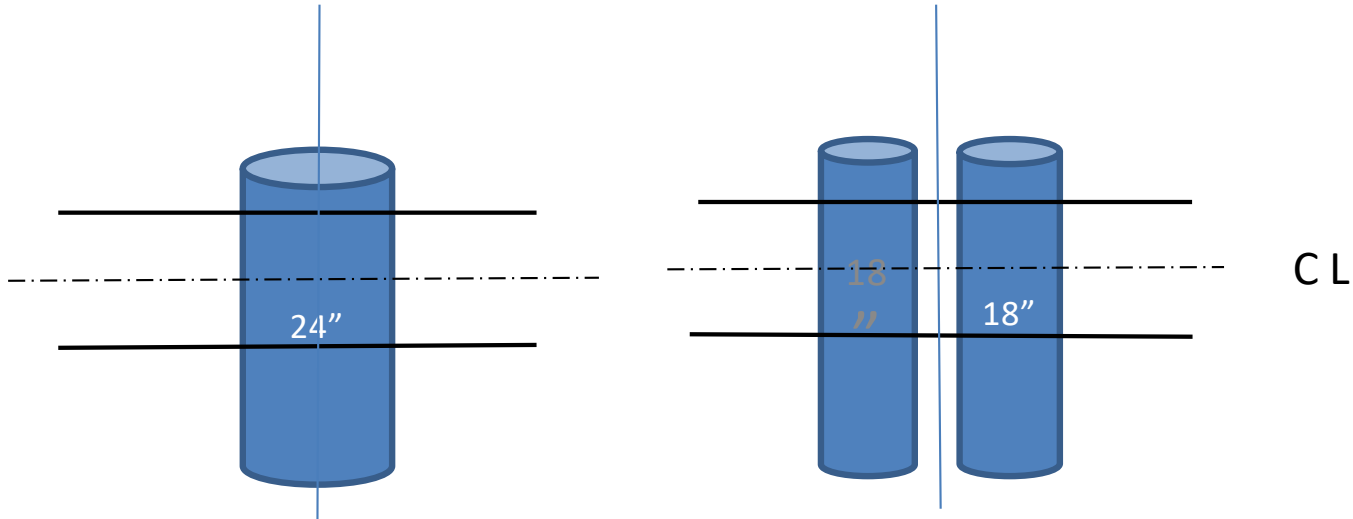
True or False

Only use the extra work at force account method of payment under the following conditions:

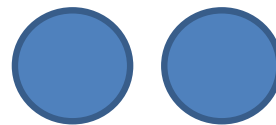
- **When the work cannot be estimated within reasonable limits of accuracy**
- **When the resident engineer and the contractor are unable to agree on a unit or lump sum price for the work**
- **When the work is urgent/time sensitive and no time to negotiate**

CCO/Memo Exercise: All Groups

(Handout Pg. 13-16)



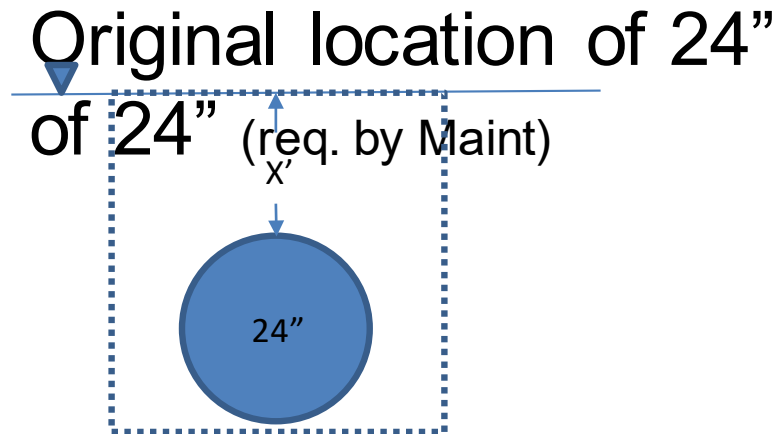
Sta. 14 + 50
As Planned:



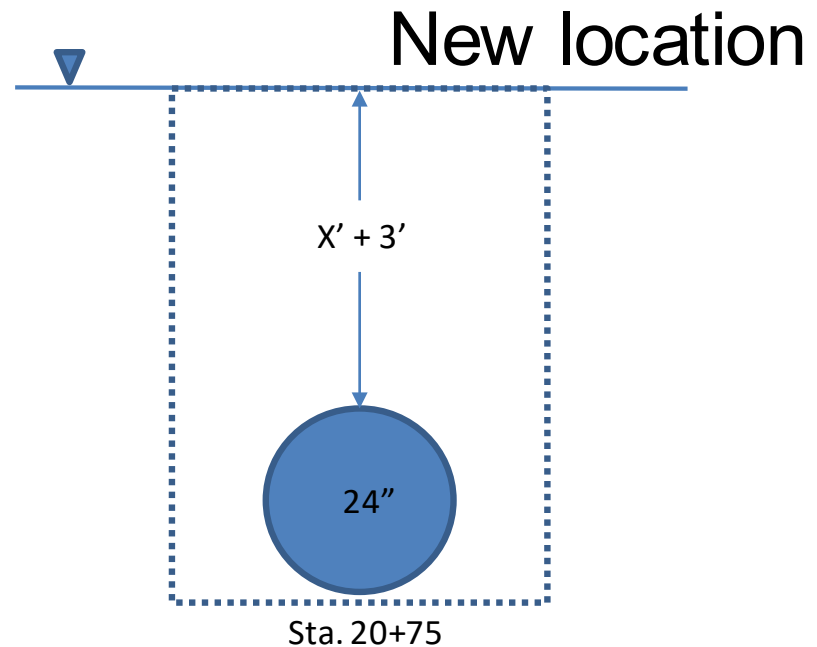
Sta. 14+50
As Changed:

CCO/Memo Exercise: Group 3

Additional Information



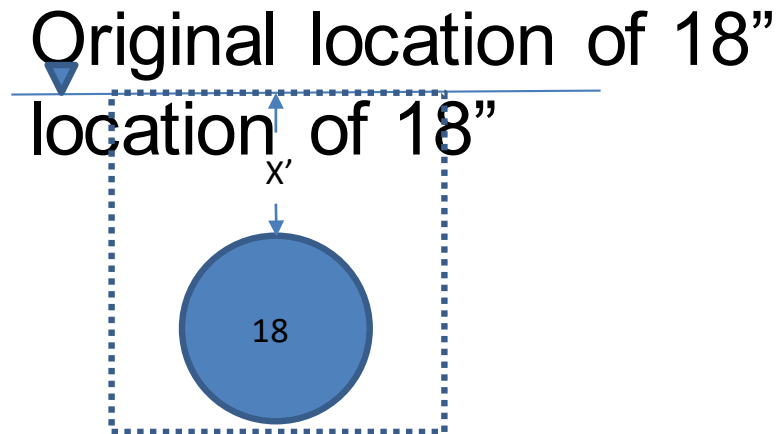
Sta. 14+50



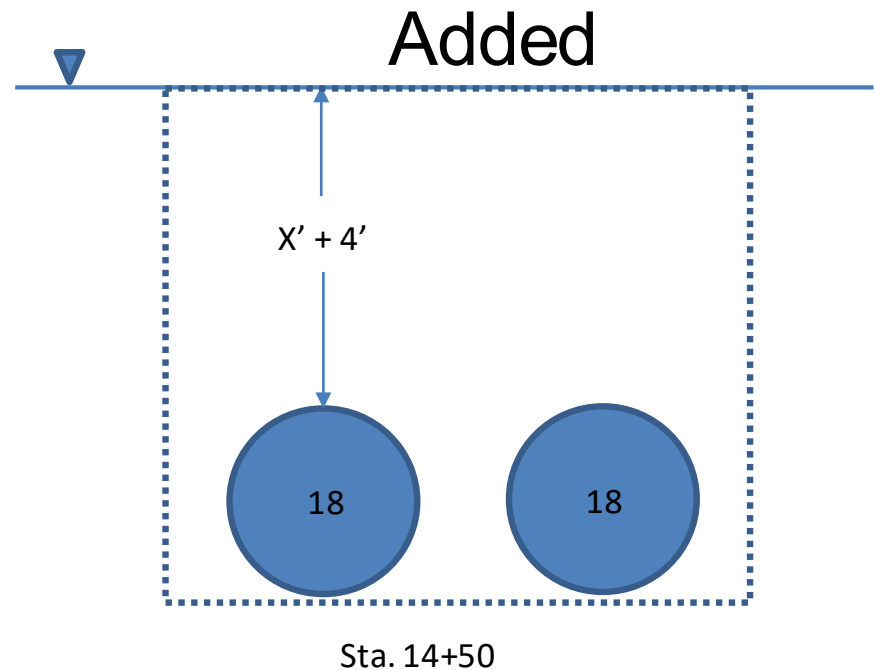
Sta. 20+75

CCO/Memo Exercise: Group 4

Additional Information



Original location
of 18" as bid for
Item 16. (Station
not provided)





Contract Change Orders Exercise

(Small group work)

