

Energy & Store
Development Conference

E+Sd

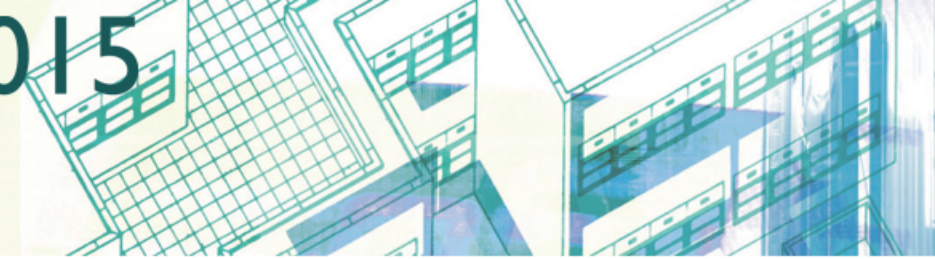
2015



Construction Value Engineering

Todd Ketterman

Crossland Construction Company



Agenda

- Introduction
- Managing Budget Expectations
- Schedule
- Specification & Construction Design
- Ask Why??
- Questions

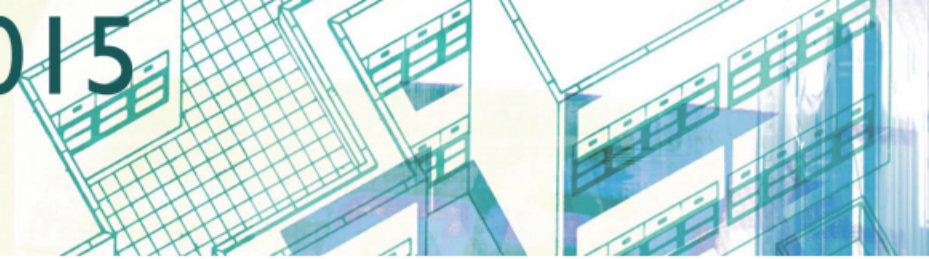


SERVING OUR CLIENTS NATIONWIDE

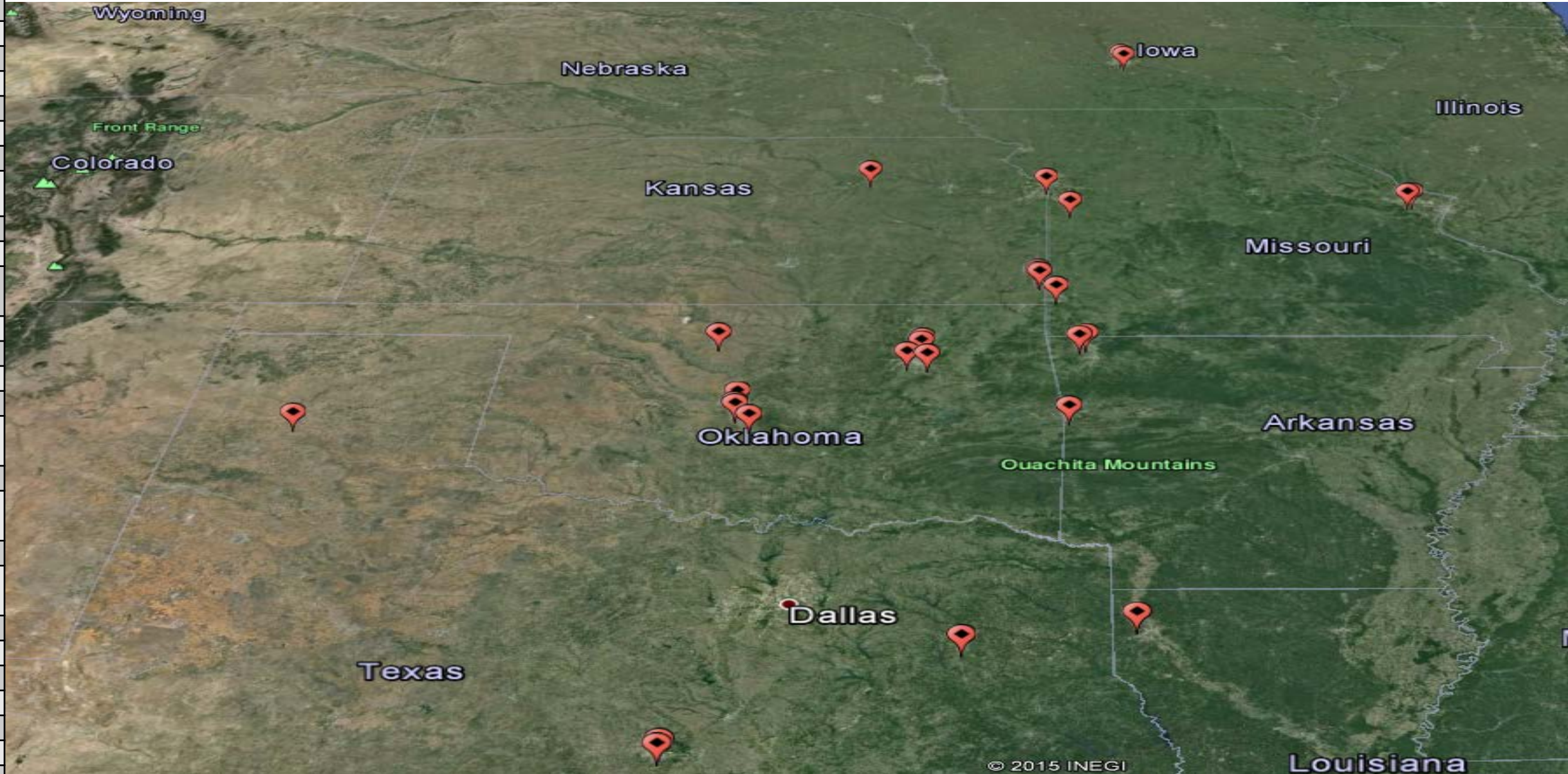


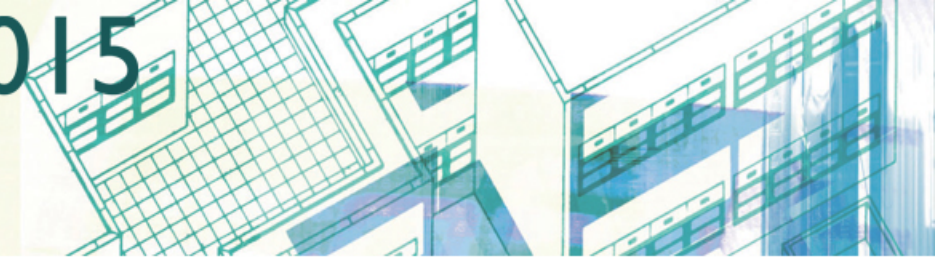
WALMART STORES, INC.
NEIGHBORHOOD MARKET, BY WALMART
SAM'S CLUB
KROGER COMPANY
TARGET STORES
ALDI STORES
REASOR'S
SAVE-A-LOT
WILLIAMS DISCOUNT FOODS
ASSOCIATED WHOLESALE GROCERS
RON'S SUPERMARKET
DILLONS FOOD STORES
WOODS SUPERMARKET
ROUSES SUPERMARKETS
PHELPS MARKET
QUEEN'S SUPERMARKETS
DOC'S FOOD STORES
WILLIAMS DISCOUNT FOODS
PRICE CHOPPER
SUN FRESH
APPLE MARKET

CROSSLAND
CONSTRUCTION COMPANY, INC.



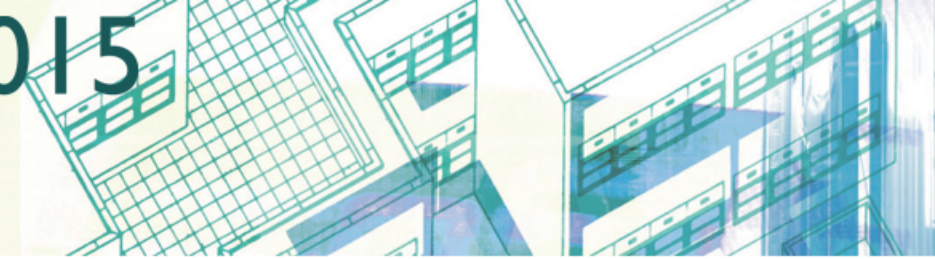
City	State	Store Type
Bentonville	AR	4376-00 NHM
Fort Smith	AR	4579-00 NHM
Amarillo	TX	4464-00 NHM
Owasso	OK	4585-00 NHM
Tyler	TX	5700-00 NHM
Joplin	MO	4470-00 NHM
Killeen	TX	3449-00 NHM
Broken Arrow	OK	4655-00 NHM
Blanchard	LA	6932-00 SC
Pittsburg	KS	5791-00 NHM
Oklahoma City	OK	7189-00 Sam's
Norman	OK	7294-00 SC
Harrisonville	MO	6065-501 Paving
St Peters	MO	5421-00 NHM
St Peters	MO	5427-00 NHM
Oklahoma City	OK	7326-00 SC
Centerton	AR	4282-00 SC
Oklahoma City	OK	NHM
Killeen	TX	SC
Kansas City	KS	Northwood Shopping
Des Moines	IA	Price Chopper
Des Moines	IA	Price Chopper
Owasso	OK	Reasors
Tulsa	OK	Reasors
Pittsburg	KS	
Manhattan	KS	
Enid	OK	
Pittsburg	KS	Dillon's Remodel





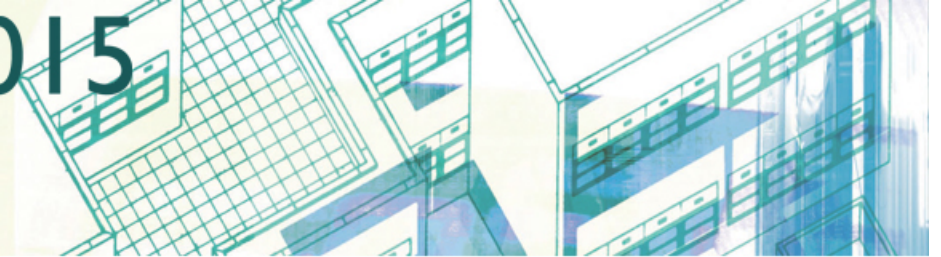
I. Managing Budget Expectations

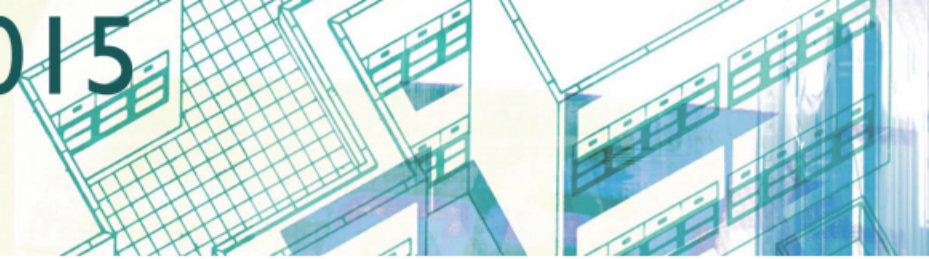
- Who/What decides an accurate budget?
 - Market driven?
 - Architect/Engineer?
 - Functionality vs Performance vs Image vs Cost?

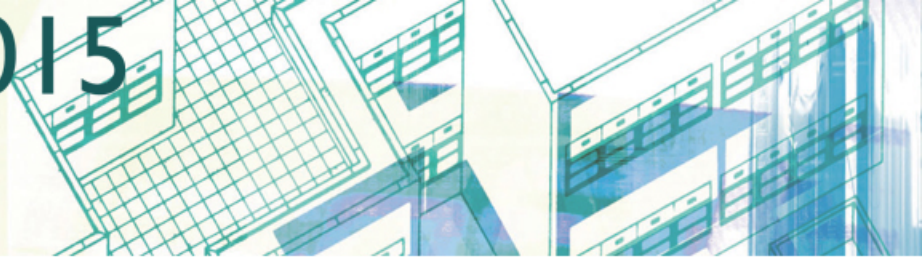


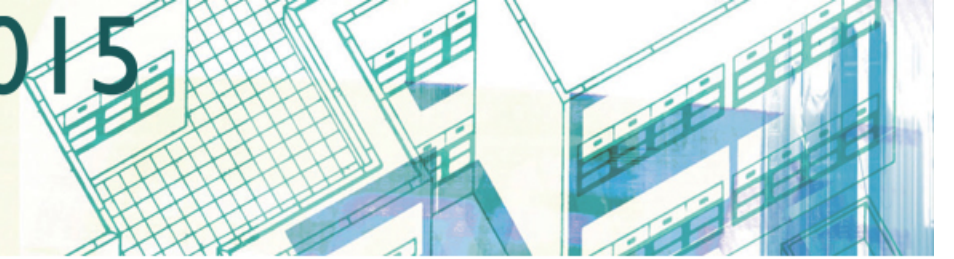
I. Managing Budget Expectations

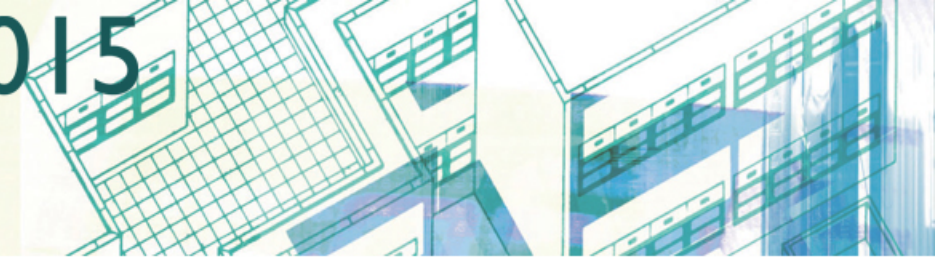
- The focus of this presentation is not to change your minds on finishes of a building or its overall aesthetics, but to show the significance in cost of the work that is not seen







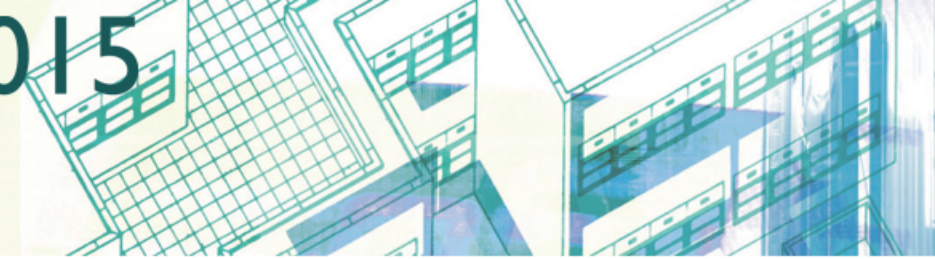




I. Managing Budget Expectations

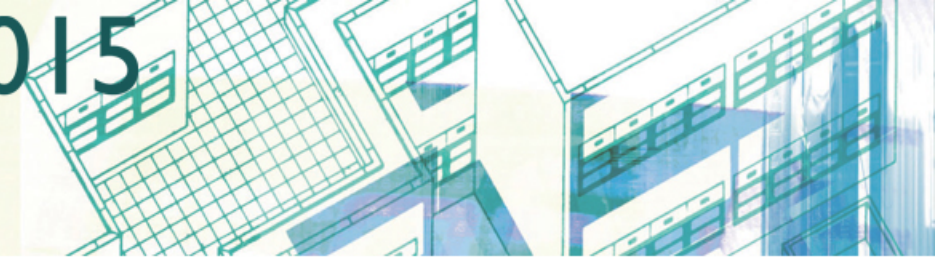
- When shopping for a car, do you start with BMW when you have a Kia budget and visa versa.



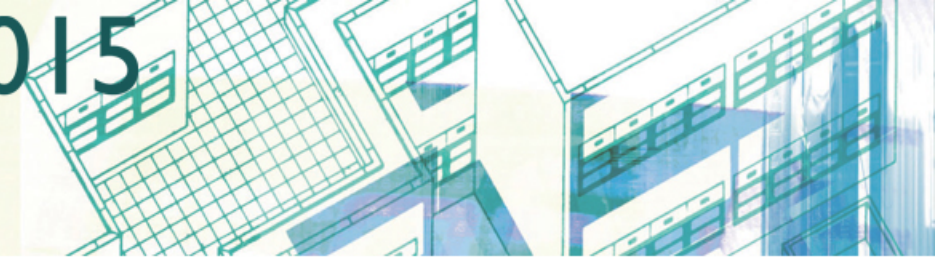


I. Managing Budget Expectations

- If the upgraded façade and entrance you want was budgeted at \$200,000, and bid at \$300,000, do you build it?
- What if it is budgeted at \$300,000 and bids at \$275,000?
- Accurate budgeting influences what gets built.







II. Schedule

- Monthly cost of general conditions
- Aggressive schedules to keep the construction costs down
- Integrated move ins
- Lost sales
- Separate site and building contracts

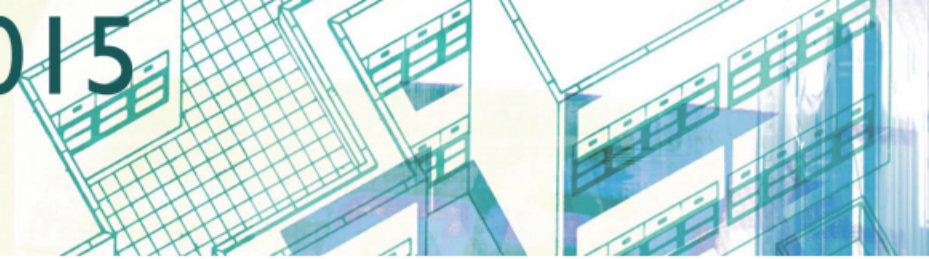
Monthly Cost of General Conditions

6 months - \$367,257

0100 GENERAL CONDITIONS	42000	SF	
MOBILIZATION	2	EA	\$ 3,067
JOB SIGN	1	EA	\$ 1,064
SITE MANAGEMENT	6	MO	\$ 107,428
SITE ASSISTANT	6	MO	\$ 20,800
WORK TRUCKS	12	MO	\$ 8,839
FUEL - TRUCKS	6	MO	\$ 10,717
FOOD ALLOWANCE	6	MO	\$ 66,840
OFFICE COMPLEX	6	MO	\$ 9,900
OFFICE SUPPLIES	6	MO	\$ 3,043
PLAN REPRODUCTION	1	LS	\$ 1,200
TEMP PHONE	6	MO	\$ 3,600
TEMP ELECTRIC	42000	SF	\$ 23,048
TEMP TOILET	6	MO	\$ 3,417
TEMP FENCE	3800	LF	\$ 12,726
ACCESS GATE	1	EA	\$ 1,421
FLOOR SCRUBBER	42000	SF	\$ 12,247
FLOOR PROTECTION-LT DUTY	10000	SF	\$ 3,837
TOOLS	42000	SF	\$ 4,000
LAYOUT	42000	SF	\$ 3,012
SAFETY	42000	SF	\$ 2,750
DEWATERING	42000	SF	\$ 1,202
WEEKLY CLEAN UP	42000	SF	\$ 12,582
FINAL CLEAN UP	42000	SF	\$ 6,145
DUMPSTER	42000	SF	\$ 17,500
MATERIAL HANDLING	42000	SF	\$ 6,104
SKIDLOADER	6	MO	\$ 10,698
FUEL - EQUIPMENT	6	MO	\$ 2,991
PUNCH LIST	42000	SF	\$ 5,365
JOB PHOTOS	6	EA	\$ 1,714
TOTAL			\$ 367,257

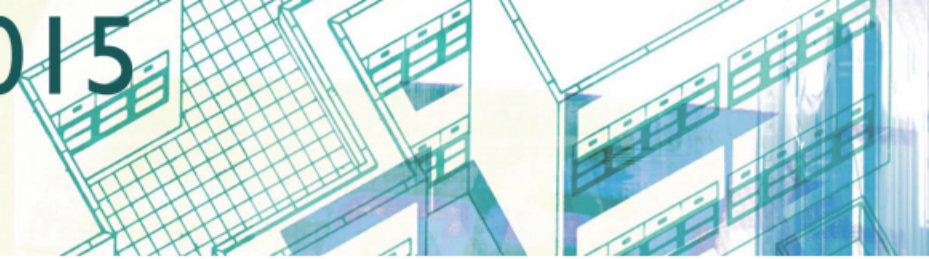
7 months - \$409,503

0100 GENERAL CONDITIONS	42000	SF	
MOBILIZATION	2	EA	\$ 3,067
JOB SIGN	1	EA	\$ 1,064
SITE MANAGEMENT	7	MO	\$ 125,333
SITE ASSISTANT	7	MO	\$ 24,267
WORK TRUCKS	14	MO	\$ 10,312
FUEL - TRUCKS	0	GA	\$ 12,503
FOOD ALLOWANCE	7	MO	\$ 77,980
OFFICE COMPLEX	7	MO	\$ 11,550
OFFICE SUPPLIES	7	MO	\$ 3,550
PLAN REPRODUCTION	1	LS	\$ 1,200
TEMP PHONE	7	MO	\$ 4,200
TEMP ELECTRIC	42000	SF	\$ 23,048
TEMP TOILET	7	MO	\$ 3,987
TEMP FENCE	3800	LF	\$ 12,726
ACCESS GATE	1	EA	\$ 1,421
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TOOLS	42000	SF	\$ 4,000
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FINAL CLEAN UP	42000	SF	\$ 6,145
DUMPSTER	42000	SF	\$ 17,500
MATERIAL HANDLING	42000	SF	\$ 6,104
SKIDLOADER	7	MO	\$ 12,481
FUEL - EQUIPMENT	0	GA	\$ 4,070
PUNCH LIST	42000	SF	\$ 5,365
JOB PHOTOS	7	EA	\$ 2,000
TOTAL			\$ 409,503



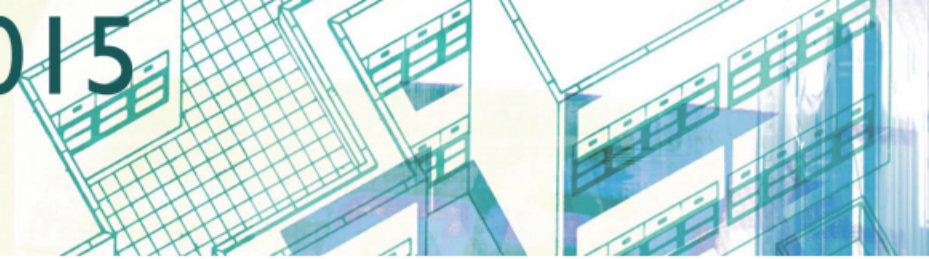
Integrated move in





Integrated move in

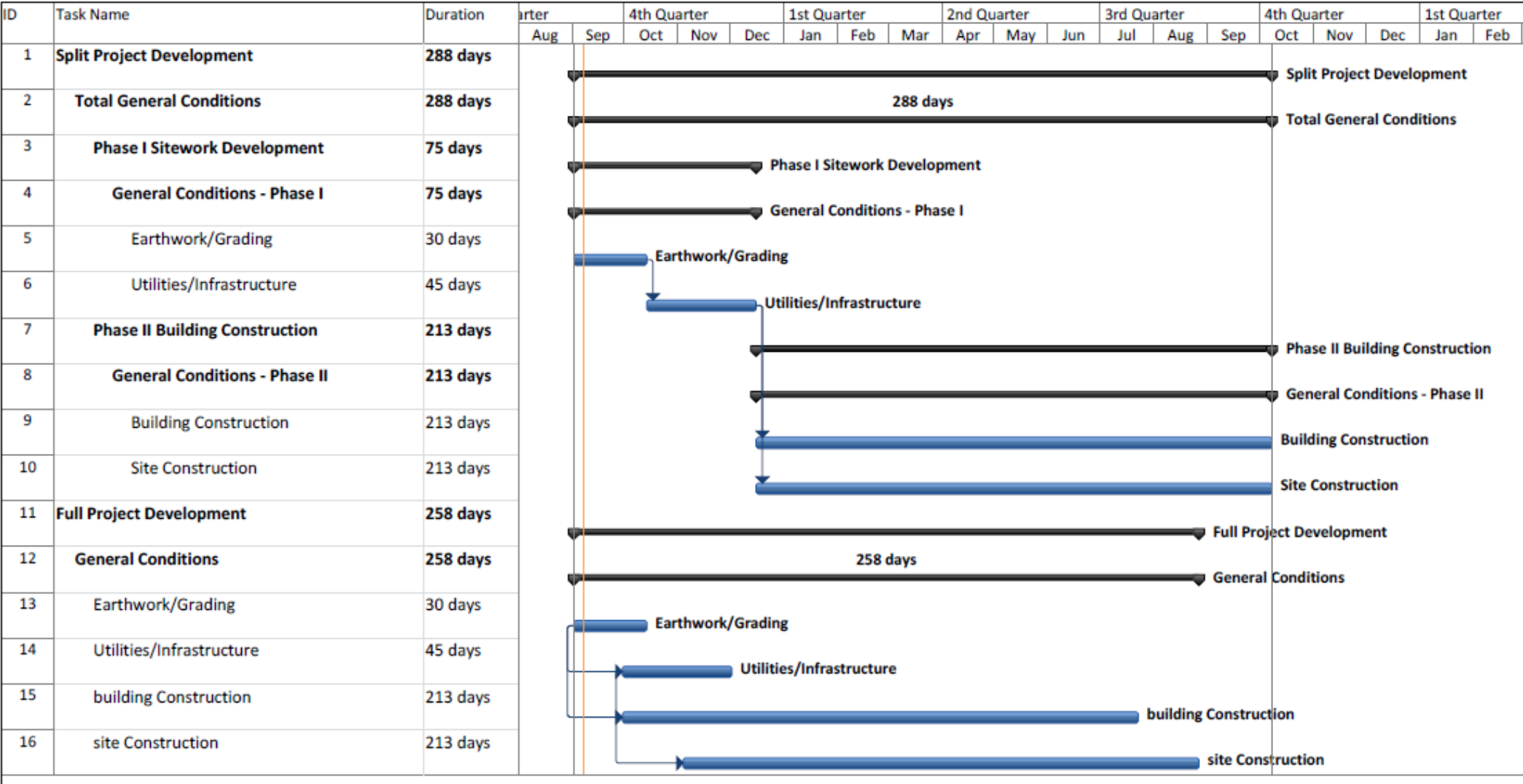


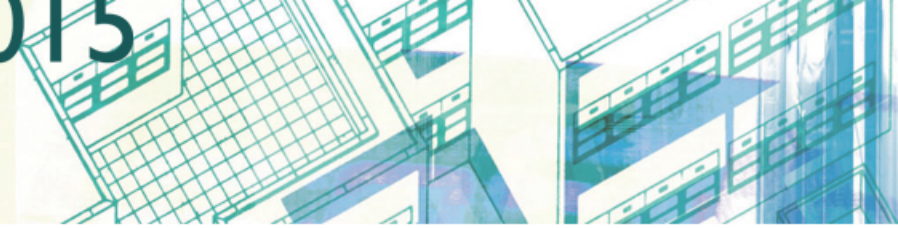


Integrated move in



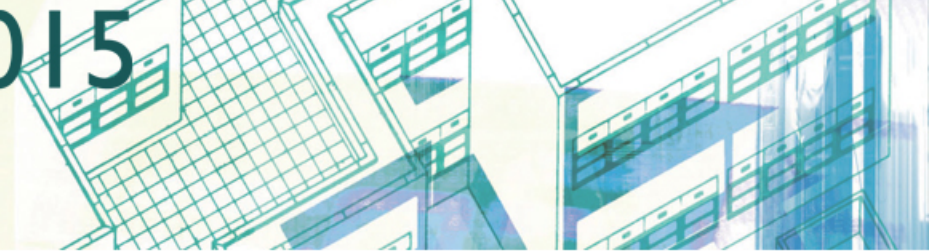
Schedule – Separate Site & Building vs. Full Development





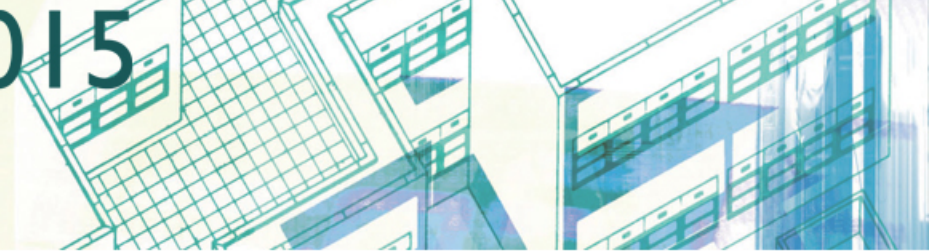
III. Specifications & Design

- Options create competition and can lead to savings
 - Alternates in bid
- Preference may dictate final decisions, but know what that preference costs



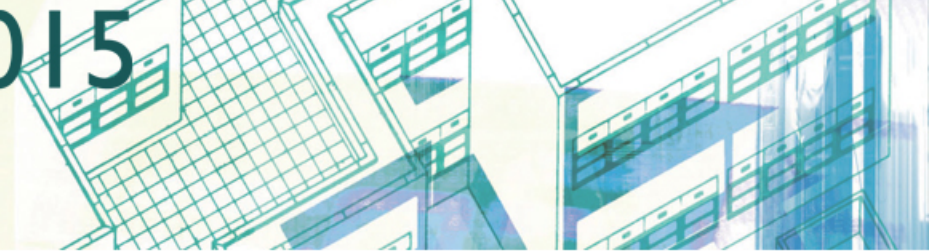
III. Specifications & Design

- Market, location and resource availability should all influence design



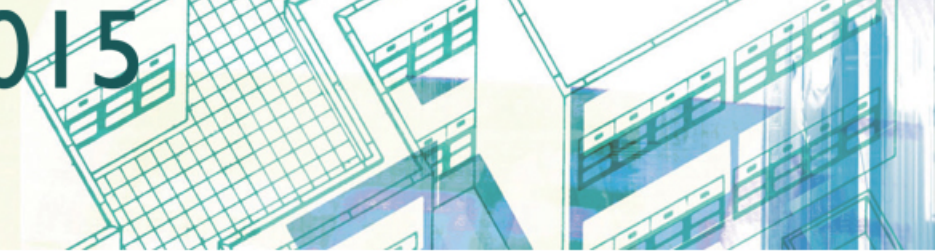
III. Specifications & Design

- Use your bid leverage before the project bids, not after



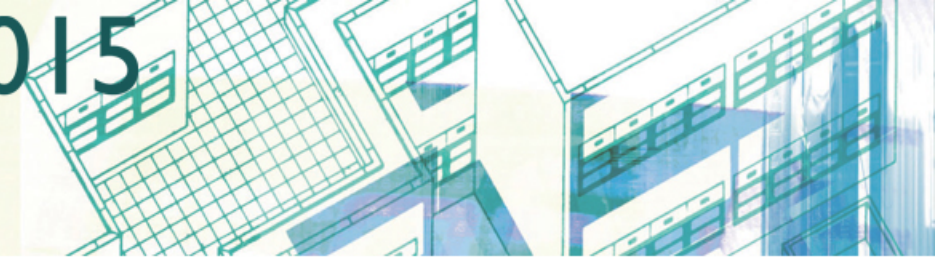
IV. Ask Why

- Challenge A/E or Contractor to explain/justify
- It's your project!!
- It's your money!!
- They work for you.



Things You Don't See- Site Work

- Import/Export
- On Site Cut/Fill
- Balance Your Site
- LVC
- Pavement type and sections
- Utility (storm, sanitary, water) routing
- Utility material



Site Work- Select Fills

- What is LVC?
- What is liquid limit and plasticity index?
- Science behind pad design (as clear as mud)

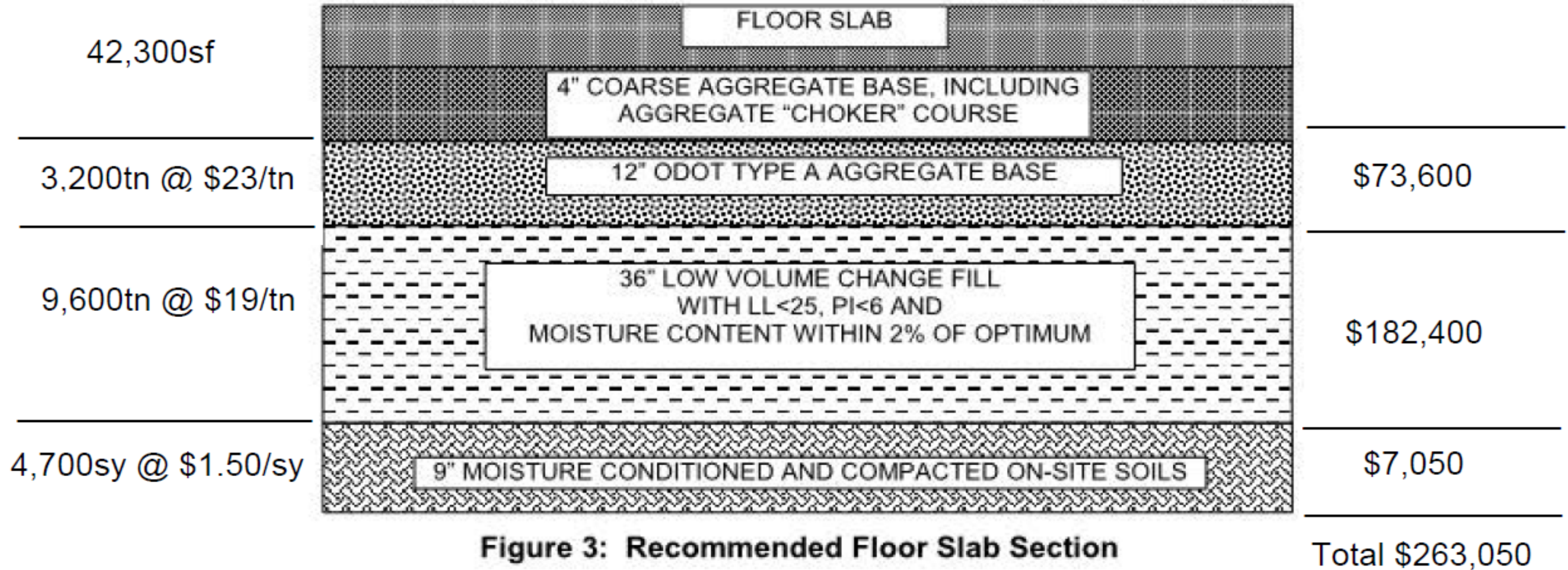
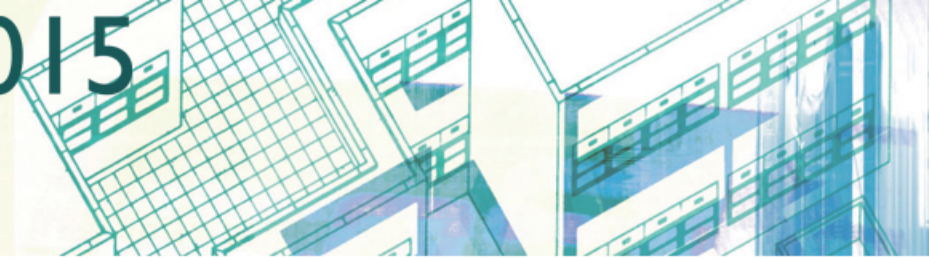
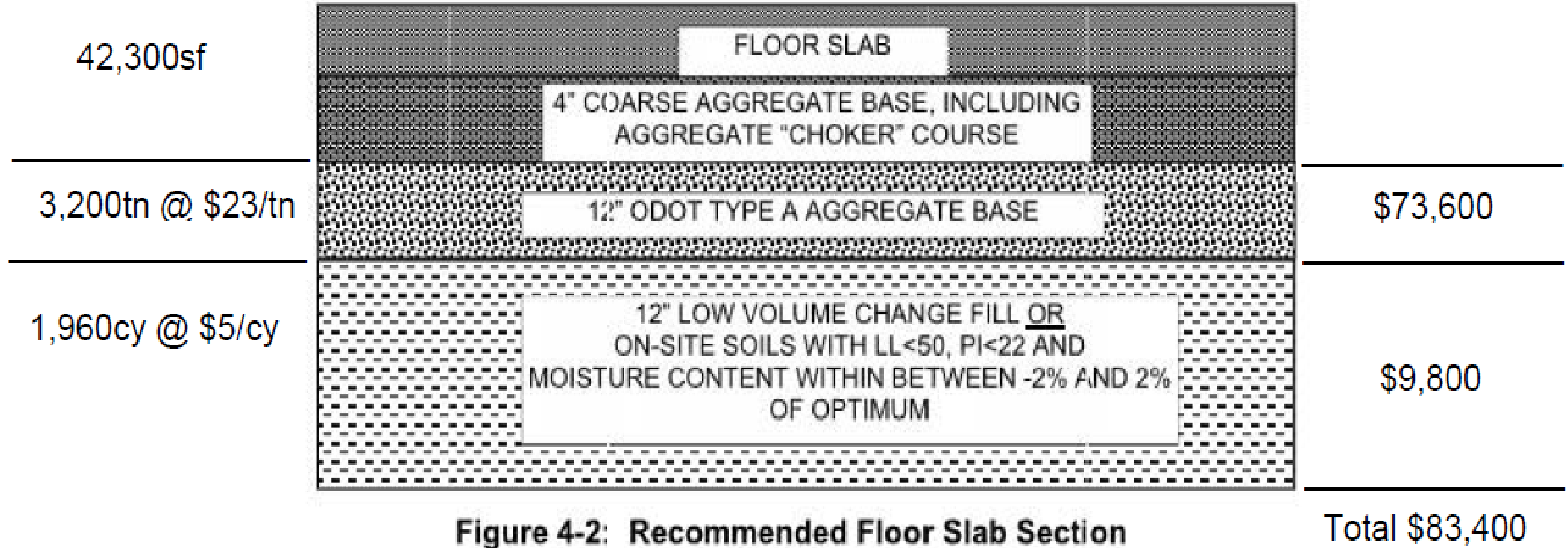
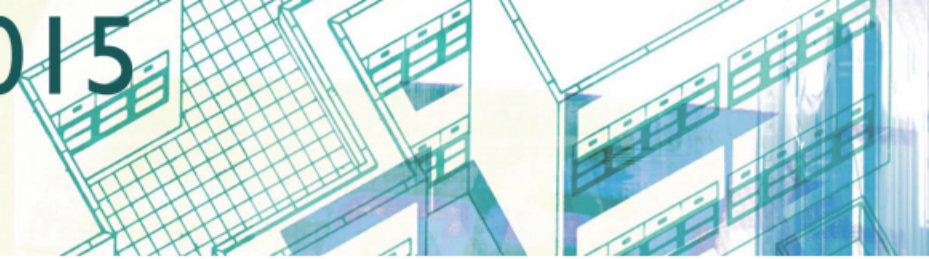
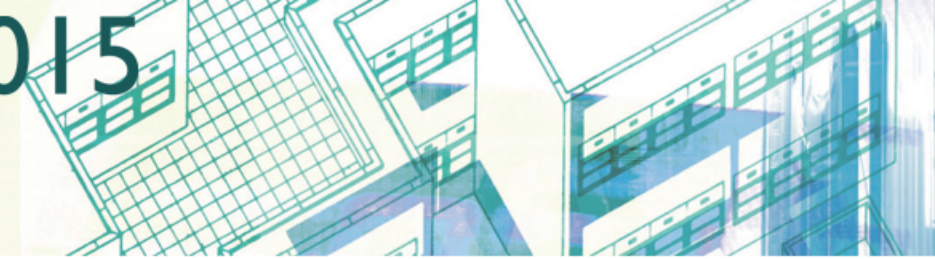


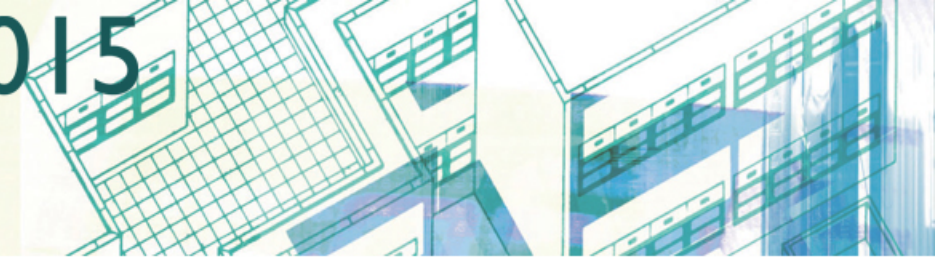
Figure 3: Recommended Floor Slab Section





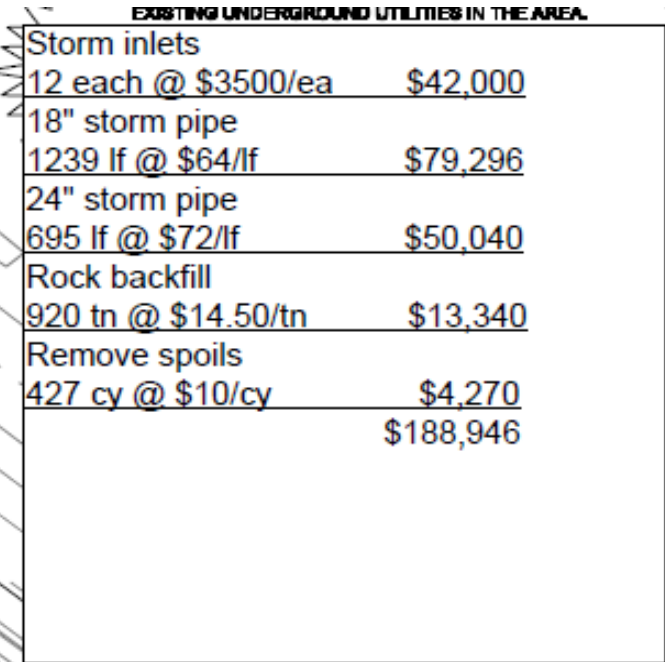
Significance of asking WHY?

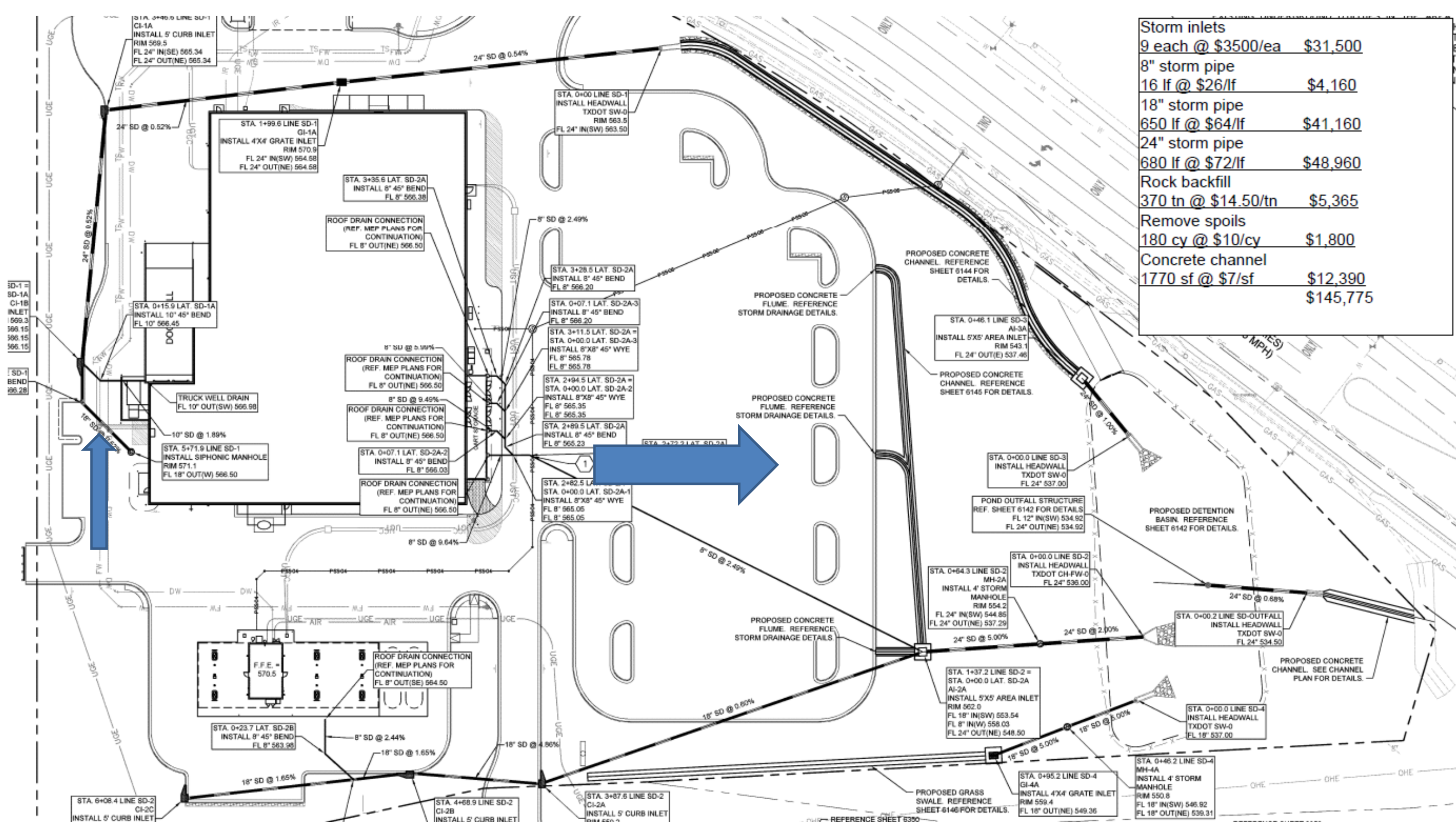
\$179,650 savings!!



Specifications & Design - Storm Water Systems

- It costs money to fight gravity
- Storm Sewer Options (Asking Why)
 - Backfill material selection
 - Pipe types
 - Pipe alternatives



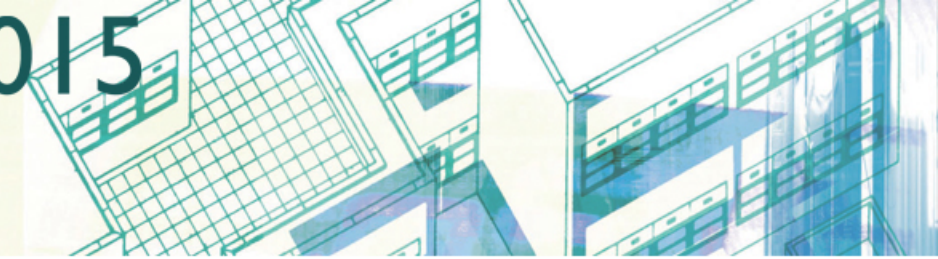


Storm inlets		
9 each @ \$3500/ea		\$31,500
8" storm pipe		
16 lf @ \$26/lf		\$4,160
18" storm pipe		
650 lf @ \$64/lf		\$41,160
24" storm pipe		
680 lf @ \$72/lf		\$48,960
Rock backfill		
370 tn @ \$14.50/tn		\$5,365
Remove spoils		
180 cy @ \$10/cy		\$1,800
Concrete channel		
1770 sf @ \$7/sf		\$12,390
		\$145,775



Significance of asking WHY?

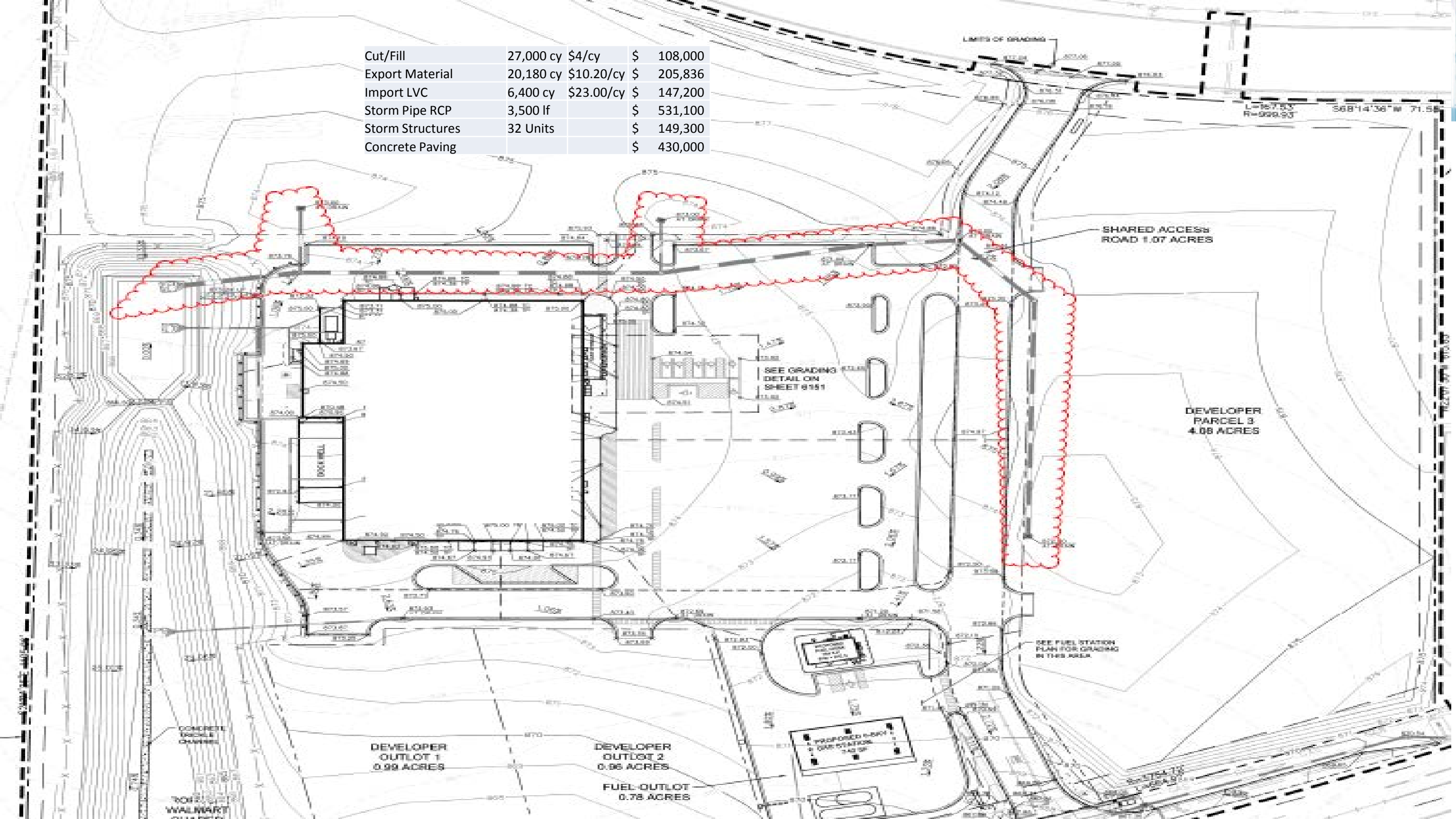
\$43,000 savings!!

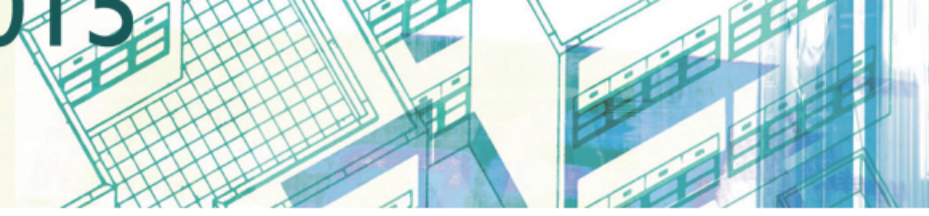


Specifications & Design- Site and Utilities

- Site Construction Value Engineering Example
 - Original Design
 - 20 acre site
 - 20,000 cy of export
 - 6,400 cy of LVC import
 - 3,500 lf of RCP storm pipe with 32 structures
 - Concrete paved parking lot

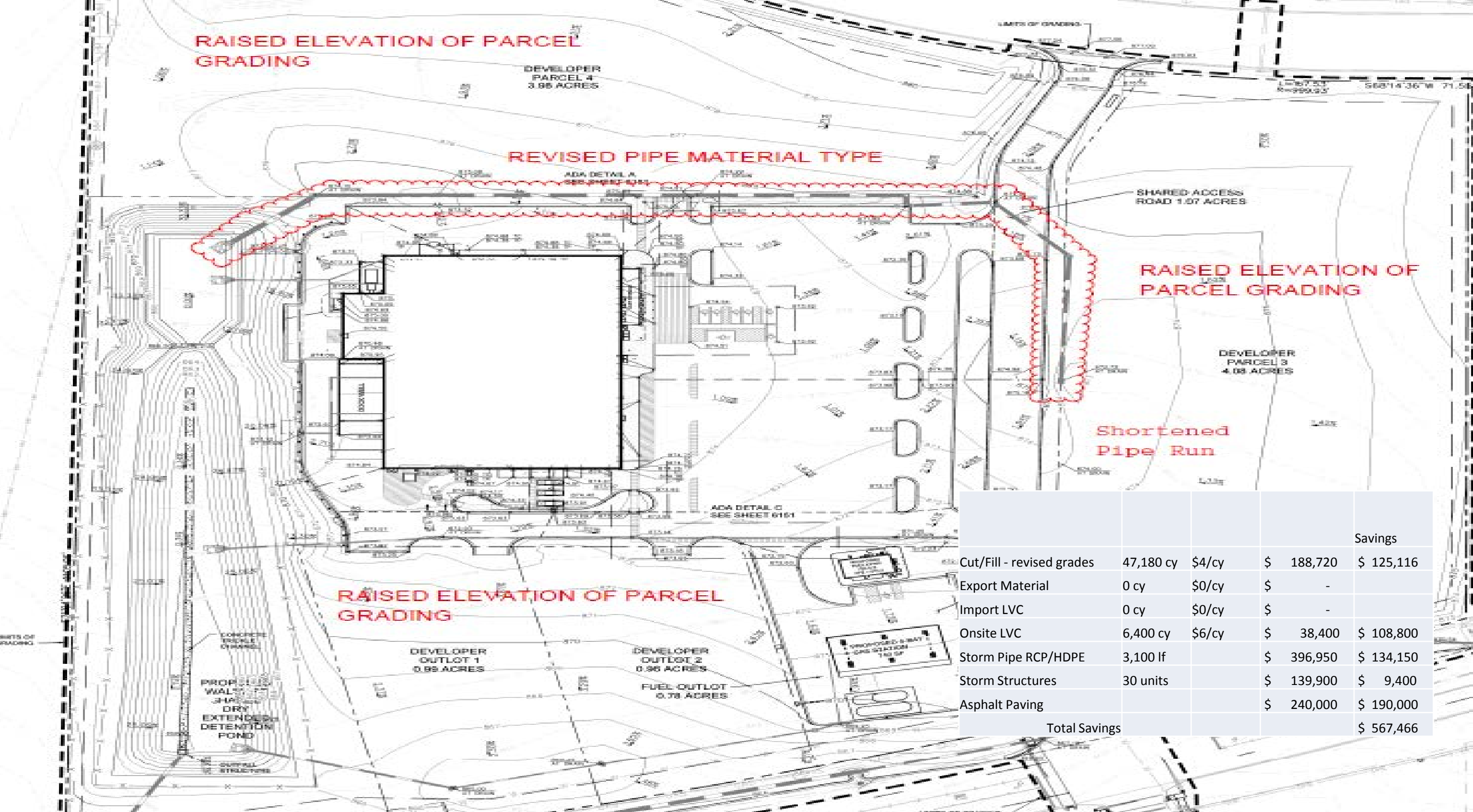
Cut/Fill	27,000 cy	\$4/cy	\$ 108,000
Export Material	20,180 cy	\$10.20/cy	\$ 205,836
Import LVC	6,400 cy	\$23.00/cy	\$ 147,200
Storm Pipe RCP	3,500 lf		\$ 531,100
Storm Structures	32 Units		\$ 149,300
Concrete Paving			\$ 430,000



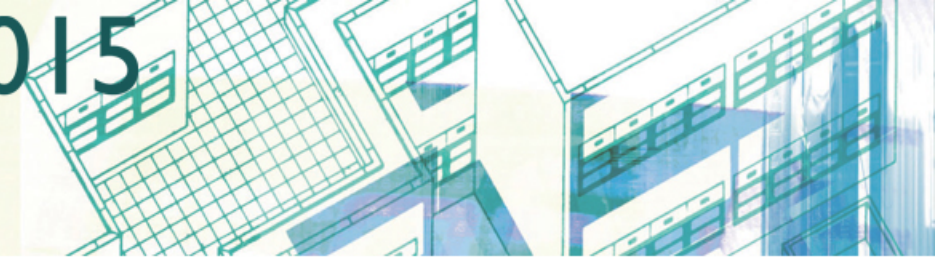


Ask Why!

- Site Construction Value Engineering Example
 - Revised Design
 - Revised out parcel grading 4"-6" to eliminate 20,000 cubic yards of export.
 - Revised LVC Requirement for the building pad to allow use of onsite materials saving import of 6,400 cubic yards of material
 - Revised layout of storm piping where possible to eliminate aggregate backfill which also allowed for elimination of two costly storm structures
 - Revise storm pipe material where possible from Concrete to HDPE
 - No changes were made to the building interior or exterior

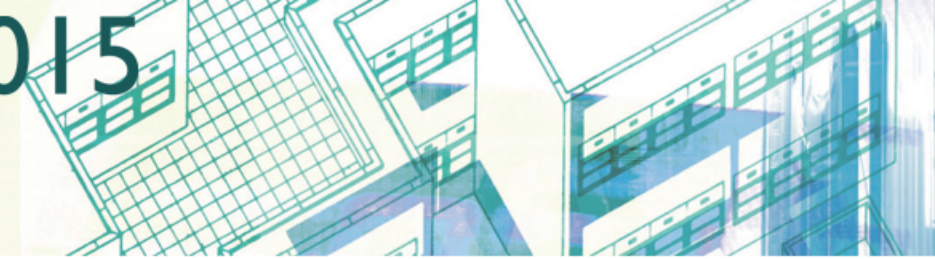


				Savings
Cut/Fill - revised grades	47,180 cy	\$4/cy	\$ 188,720	\$ 125,116
Export Material	0 cy	\$0/cy	\$ -	
Import LVC	0 cy	\$0/cy	\$ -	
Onsite LVC	6,400 cy	\$6/cy	\$ 38,400	\$ 108,800
Storm Pipe RCP/HDPE	3,100 lf		\$ 396,950	\$ 134,150
Storm Structures	30 units		\$ 139,900	\$ 9,400
Asphalt Paving			\$ 240,000	\$ 190,000
Total Savings				\$ 567,466



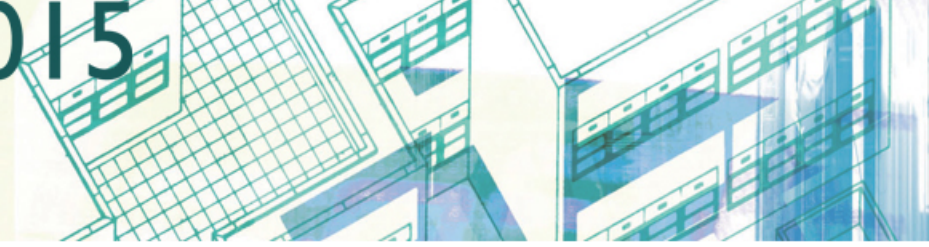
Significance of asking WHY?

\$567,500 savings!!



Summary

- An accurate budget reflects what gets built
- Involve construction partners early in process
- Don't give away bid leverage
- Aggressive construction schedule
- Challenge Spec and Design...ask WHY?



QUESTIONS???

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